California Fish and Game Commission

Meeting Binder

April 17, 2019

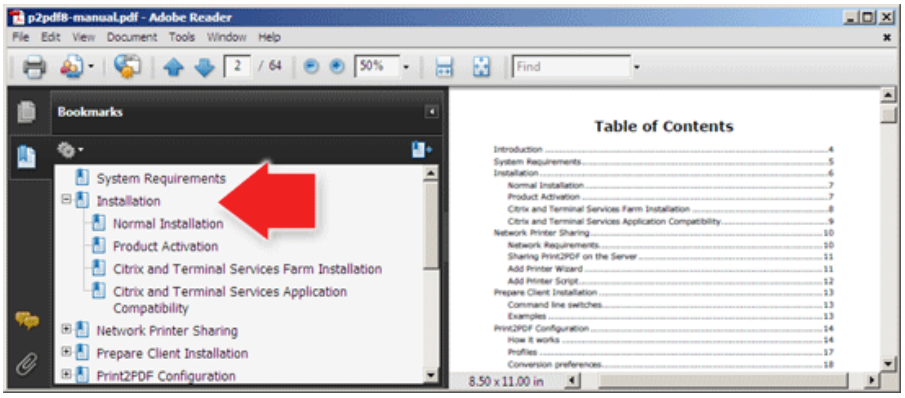
Santa Monica

EASY GUIDE TO USING THE BINDER

1. Download and open the binder document using your Adobe Acrobat program/app.

2. If a bookmark panel does not automatically appear on either the top or left side of the screen, click/tap on the “bookmark symbol” located near the top left-hand corner.

3. To make adjustments to the view, use the Page Display option in the View tab. You should see something like:



4. We suggest leaving open the bookmark panel to help you move efficiently among the staff summaries and numerous supporting documents in the binder. It’s helpful to think of these bookmarks as a table of contents that allows you to go to specific points in the binder without having to scroll through hundreds of pages.

5. You can resize the two panels by placing your cursor in the dark, vertical line located between the panels and using a long click /tap to move in either direction. ⇹

6. You may also adjust the sizing of the documents by adjusting the sizing preferences located on the Page Display icons found in the top toolbar or in the View tab.

7. Upon locating a staff summary for an agenda item, notice that you can obtain more information by clicking/tapping on any item underlined in blue.

8. Return to the staff summary by simply clicking/tapping on the item in the bookmark panel.

9. Do not hesitate to contact staff if you have any questions or would like assistance.

OVERVIEW OF FISH AND GAME COMMISSION BUSINESS MEETINGS

- This year marks the beginning of the 150th year of operation of the California Fish and Game Commission in partnership with the California Department of Fish and Wildlife. Our goal is the preservation of our heritage and conservation of our natural resources through informed decision making. These meetings are vital in achieving that goal. In that spirit, we provide the following information to be as effective and efficient toward that end. Welcome and please let us know if you have any questions.

- We are operating under the Bagley-Keene Open Meeting Act and these proceedings are being recorded and broadcast via https://videobookcase.com/.

- In the unlikely event of an emergency, please note the location of the nearest emergency exits. Additionally, the restrooms are located _____.

- Items may be heard in any order pursuant to the determination of the Commission President.

- The amount of time for each agenda item may be adjusted based on time available and the number of speakers.

- Speaker cards need to be filled out **legibly** and turned in to the staff **before** we start the agenda item. Please make sure to list the agenda items you wish to speak to on the speaker card.

- We will be calling the names of several speakers at a time so please line up behind the speakers' podium when your name is called. If you are not in the room when your name is called you may forfeit your opportunity to speak on the item.

- When you speak, please state your name and any affiliation. Please be respectful. Disruptions from the audience will not be tolerated. Time is precious so please be concise.

- To receive meeting agendas and regulatory notices about those subjects of interest to you, please visit the Commission's website, www.fgc.ca.gov, and sign up for our electronic mailing lists.

- All petitions for regulation change must be submitted in writing on the authorized petition form, FGC 1, Petition to the California Fish and Game Commission for Regulation Change, available at http://www.fgc.ca.gov/public/information/petitionforregulatorychange.aspx.

- **Reminder!** Please silence your mobile devices and computers to avoid interruptions.

- **Warning**! The use of a laser pointer by someone other than a speaker doing a presentation may result in arrest.

INTRODUCTIONS FOR FISH AND GAME COMMISSION MEETINGS

Fish and Game Commission

Eric Sklar	President (Saint Helena)
Jacque Hostler-Carmesin	Vice President (McKinleyville)
Russell Burns	Member (Napa)
Peter Silva	Member (Jamul)
Samantha Murray	Member (Del Mar)

Commission Staff

Melissa Miller Henson	Acting Executive Director
Susan Ashcraft	Acting Deputy Executive Director
Mike Yaun	Legal Counsel
Elizabeth Pope	Acting Marine Advisor
Ari Cornman	Wildlife Advisor
Sherrie Fonbuena	Analyst
Sergey Kinchak	Analyst

California Department of Fish and Wildlife

Chuck Bonham	Director
Wendy Bogdan	General Counsel
David Bess	Deputy Director and Chief, Law Enforcement Division
Stafford Lehr	Deputy Director, Wildlife and Fisheries Division
Clark Blanchard	Assistant Deputy Director, Office of Communications, Education and Outreach
Kari Lewis	Chief, Wildlife Branch
Kevin Shaffer	Chief, Fisheries Branch
Craig Shuman	Manager, Marine Region

I would also like to acknowledge special guests who are present:
(i.e., elected officials, including tribal chairpersons, and other special guests)

STATE OF CALIFORNIA
Gavin Newsom, Governor

Fish and Game Commission

Wildlife Heritage and Conservation
Since 1870

Melissa Miller-Henson
Acting Executive Director
P.O. Box 944209
Sacramento, CA 94244-2090
(916) 653-4899
fgc@fgc.ca.gov
www.fgc.ca.gov

REVISED* MEETING AGENDA
April 17, 2019, 8:30 AM

City of Santa Monica, Civic Auditorium, East Wing
1855 Main Street, Santa Monica, CA 90403

The meeting will be live streamed; visit www.fgc.ca.gov the day of the meeting.

*This agenda is revised to include new items 4-6 regarding private lands wildlife habitat enhancement and management area (PLM) licenses and plans.

Notes: **See important meeting deadlines and procedures at the end of the agenda. Unless otherwise indicated, the California Department of Fish and Wildlife is identified as Department.**

Call to order/roll call to establish quorum

1. **Consider approving agenda and order of items**

2. **General public comment for items not on agenda**
   Receive public comment regarding topics within the Commission's authority that are not included on the agenda.
   Note: The Commission **may not** discuss or take action on any matter raised during this item, except to decide whether to place the matter on the agenda of a future meeting (sections 11125 and 11125.7(a), Government Code).

3. **Committee assignments**
   The Commission forms three committees from its membership, consisting of at least one commissioner (Pursuant to sections 105, 106 and 106.5, Fish and Game Code).

   (A) Marine Resources Committee
   (B) Wildlife Resources Committee
   (C) Tribal Committee

CONSENT ITEMS

4. **Initial private lands wildlife habitat enhancement and management area (PLM) license and plan**
   Consider approving initial PLM plan and 2019-2023 license for:
   (Pursuant to Section 601, Title 14, CCR)

   (A) Glenn County
      I. Anderson Ranch

5. **Five-year PLM plans**
   Consider approving five-year PLM plans and 2019-2023 licenses for:
   (Pursuant to Section 601, Title 14, CCR)

   (A) Humboldt County
      I. Redwood House Ranch
      II. Smith River PLM
      III. Wiggins Ranch
   (B) Kern/Los Angeles counties
      I. Tejon Ranch
   (C) Mendocino County
      I. Capistran Ranch
      II. Four Pines Ranch
   (D) Monterey County
      I. Work Ranch
   (E) San Luis Obispo County
      I. Hearst Ranch
   (F) Tehama County
      I. Bell Ranch

6. **Annual PLM plans**
   Consider approving annual PLM plans and 2019/2020 licenses for:
   (Pursuant to Section 601, Title 14, CCR)

   (A) Del Norte County
      I. Alexandre Ecodairy Farms PLM
   (B) Humboldt County
      I. Big Lagoon
      II. Cottrell Ranch
      III. Diamond C Outfitters
      IV. Hunter Ranch
      V. Klamath PLM
      VI. Rainbow Ridge PLM
      VII. Stover Ranch
   (C) Mendocino County
      I. Amann Ranch
      II. Carley Ranch
      III. Christensen Ranch
      IV. Elk Creek Ranch

CONSENT ITEMS

V. Miller-Eriksen Ranch
VI. Sanhedrin Ranch
VII. Seven Springs Ranch
VIII. Shamrock Ranch
IX. Spring Valley Ranch
X. Summer Camp Ranch

(D) Merced County
I. DeFrancesco/Eaton Ranch

(E) Modoc County
I. Roberts Ranch

(F) Monterey County
I. Alexander Ranch
II. Hartnell Ranch
III. Indian Valley Cattle Company (Lombardo Ranch)
IV. Peachtree Ranch
V. Sky Rose Ranch, LLC. PLM

(G) Monterey/San Benito counties
I. Morisoli Ranch

(H) Monterey/San Luis Obispo counties
I. Camp 5 Outfitters - Roth Ranch PLM

(I) San Benito County
I. Lewis Ranch
II. Lone Ranch
III. Rancho La Cuesta
IV. Trinchero Ranch

(J) San Joaquin County
I. Connolly and Corral Hollow Ranch

(K) San Luis Obispo County
I. Avenales Ranch
II. Carnaza Ranch
III. Carrizo Ranch
IV. Chimney Rock Ranch
V. Clark and white Ranches
VI. D – Rafter “L” Ranch, LLC

(L) San Luis Obispo/Kern counties
I. Temblor Ranch

(M) Shasta County
I. Stackhouse Ranch

(N) Solano County
I. Buckeye Ranch

(O) Tehama County
I. 3D Ranch
II. R Wild Horse Ranch

(P) Trinity County
I. Stewart Ranch
II. Travis Ranch

CONSENT ITEMS

7. **Bumble bees**
Receive 90 day evaluation report from the Department for the petition to list Crotch bumble bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*), Suckley cuckoo bumble bee (*Bombus suckleyi*), and western bumble bee (*Bombus occidentalis occidentalis*) as endangered species under the California Endangered Species Act (CESA).(Pursuant to Section 2073.5, Fish and Game Code)

8. **San Bernadino kangaroo rat**
Receive a petition to list San Bernardino kangaroo rat (*Dipodomys merriami parvus)* as an endangered species under CESA.
(Pursuant to Section 2073.3, Fish and Game Code, and subsection 670.1(c), Title 14, CCR)

9. **Transgenic zebrafish**
Receive an application for a permit to import, possess, transport or rear, or conduct research on, transgenic zebrafish.
(Pursuant to subdivision 15007(e), Fish and Game Code, and subsection 671.1(a)(8)(H), Title 14, CCR)

10. **Archery equipment and crossbow**
Consider adopting proposed changes to archery equipment and crossbow regulations, including bow draw weight and possession of a firearm while bow hunting.
(Section 354, Title 14, CCR)

11. **Hagfish traps**
Consider authorizing publication of notice of intent to amend commercial take of hagfish regulations, including use of barrel traps and buoy marking requirements for all trap types.
(Section 180.6, Title 14, CCR)

12. **Acting executive director's report**
Receive an update from the acting executive director on staffing and legislative information.

(A) Staff report
(B) Legislative report, federal regulatory notices, and possible action
    I. Proposed delisting of gray wolf under the federal Endangered Species Act

13. **Tribal Committee**
Discuss and consider approving draft agenda topics for the next committee meeting. Consider approving new topics to address at a future committee meeting.

(A) Work plan development
    I. Update on work plan and draft timeline
    II. Discuss and consider approving new topics

14. **Wildlife Resources Committee**
Discuss and consider approving draft agenda topics for the next committee meeting. Consider approving new topics to address at a future committee meeting.

(A) Work plan development
I. Update on work plan and draft timeline
II. Discuss and consider approving new topics

15. **Mammal hunting**
Consider adopting proposed changes to mammal hunting regulations, including sheep/elk tag quotas, and deer/elk tag validation.
(Sections 362, 364, 364.1 and 708.6, Title 14, CCR)
Commission staff will recommend that this item be continued for possible adoption at the Commission's May 16, 2019 teleconference.

16. **Waterfowl**
Consider adopting proposed changes to migratory waterfowl regulations and concurrence with federal regulations.
(Sections 502 and 509, Title 14, CCR)

17. **Klamath River Basin sport fishing**
Discuss proposed changes to Klamath River Basin sport fishing regulations.
(Subsection 7.50(b)(91.1), Title 14, CCR)

18. **Central Valley salmon sport fishing**
Discuss proposed changes to Central Valley salmon sport fishing regulations.
(Subsections 7.50(b)(5), (68), (124) and (156.5), Title 14, CCR)

19. **Upper Klamath-Trinity river spring Chinook salmon**
Discuss and consider authorizing take.
(Pursuant to Section 2084, Fish and Game Code)

20. **Strategic planning**
Receive an update on and discuss next steps in the strategic planning process.

21. **Petitions for regulation change**
Consider petitions submitted by members of the public to adopt, amend or repeal a regulation.
(Pursuant to Section 662, Title 14, CCR)

(A) Action on current petitions
I. Petition #2018-018 AM 1: Extend crow hunting season in Hollenbeck Canyon Wildlife Area
II. Petition #2018-019: Increase trap opening size for recreational take of shrimp south of Point Conception
III. Petition #2019-001: Limit use of leased parking sites in Ballona Wetlands Ecological Reserve parking lot

IV. Petition #2019-002: Authorize purchase of trap endorsement for nearshore permits converted at 2:1 rate
V. Petition #2019-003: Emergency regulation for recreational take of purple sea urchin at Tanker's Reef in Monterey County

(B) Action on pending regulation petitions referred to staff or the Department for review – None scheduled at this time

22. **Non-regulatory requests**

Consider non-regulatory requests submitted by members of the public at previous meetings.

(A) Action on current non-regulatory requests
(B) Action on pending non-regulatory requests referred to staff or the Department for review – None scheduled at this time

23. **Departmental informational items**

The Department will highlight items of note since the last Commission meeting.

(A) Director's report
I. Update on tricolored blackbird population estimates and progress with safe harbor agreements
(B) Law Enforcement Division
(C) Wildlife and Fisheries Division, and Ecosystem Conservation Division
I. Recruitment, retention and reactivation (R3) report
II. Update on efforts to eradicate nutria in California
(D) Marine Region
I. Year in review – 2018
II. Update on annual recreational ocean salmon and Pacific halibut regulations, and automatic conformance to federal regulations
III. Update on federal fishery disaster declaration requests
IV. Update on transition to electronic commercial fisheries landing receipts ("E-Tix")

24. **Marine Resources Committee**

Discuss updates and/or recommendations from the March 20, 2019 committee meeting. Consider approving new topics to address at a future committee meeting.

(A) March 20, 2019 meeting summary
I. Receive and consider adopting recommendations
(B) Work plan development
I. Update on work plan and draft timeline
II. Discuss and consider approving new topics

25. **Whale and turtle protection in the Dungeness crab fishery**

Update on legal settlement agreement to protect whales and sea turtles from entanglement in commercial Dungeness crab gear, and potential application to the recreational Dungeness crab fishery.

26. **Commission administrative items**
Discuss and consider action on the upcoming meeting agenda items and rulemaking timetable, and identify any new business for discussion at a future meeting.

(A) Next meetings – May 16, 2019 (teleconference) and June 12-13, 2019
(B) Rulemaking timetable updates
(C) New business

Adjourn

EXECUTIVE SESSION
(Not Open to the Public)

At a convenient time during the regular agenda of the meeting listed above, the Commission will recess from the public portion of the agenda and conduct a closed session on the agenda items below. The Commission is authorized to discuss these matters in a closed session pursuant to Government Code Section 11126, subdivisions (a)(1), (c)(3), and (e)(1), and Fish and Game Code Section 309. After closed session, the Commission will reconvene in public session, which may include announcements about actions taken during closed session.

(A) Pending litigation to which the Commission is a Party

I. Dennis Sturgell v. California Fish and Game Commission, California Department of Fish and Wildlife, and Office of Administrative Hearings (revocation of Dungeness crab vessel permit No. CT0544-T1)

II. California Cattlemen's Association and California Farm Bureau Federation v. California Fish and Game Commission (gray wolf listing)

III. Public Interest Coalition v. California Fish and Game Commission (CEQA compliance during adoption of dog collar regulation)

IV. Pacific Star Sportfishing, Inc. v. California Fish and Game Commission, et al. (suspension of commercial vessel fishing permit)

V. Aaron Lance Newman v. California Fish and Game Commission (revocation of hunting and sport fishing privileges)

(B) Possible litigation involving the Commission

(C) Staffing

(D) Deliberation and action on license and permit items

I. Consider Agency Case No. 17ALJ18-FGC, the appeal filed by James Smith regarding the suspension of his guide license

II. Consider Agency Case No. 18ALJ02-FGC, the appeal filed by Charles Williams regarding a request to renew a transferable Dungeness crab vessel permit and salmon vessel permit

III. Consider Agency Case No. 18ALJ05-FGC, the appeal filed by James Verboon regarding a request to renew a salmon vessel permit

IV. Consider Agency Case No. 18ALJ07-FGC, the appeal filed by John Fraser regarding a request to renew a nontransferable Dungeness crab vessel permit

V. Consider Agency Case No. 18ALJ11-FGC, the appeal filed by Louis Ferrari regarding the transferability of a nearshore fisheries permit

VI. Consider Agency Case No. 18ALJ15-FGC, the appeal filed by Peter Aliotti regarding a request to renew a salmon vessel permit

VII. Consider Agency Case No. 18ALJ16-FGC, the appeal filed by Steve Escobar regarding a request to renew a south coast region nearshore fishery gear endorsement

VIII. Consider Agency Case No. 18ALJ21-FGC, the Accusation filed against Shan Xiang Xue regarding a 20-year suspension of sport fishing privileges

California Fish and Game Commission
2019 Meeting Schedule

Note: As meeting dates and locations can change, please visit www.fgc.ca.gov for the most current list of meeting dates and locations.

Meeting Date	Commission Meeting	Committee Meeting
May 16		**Wildlife Resources** Natural Resources Building Redwood Room, 14th Floor 1416 Ninth Street Sacramento, CA 95814
May 16	Teleconference – Arcata, Fairfield, Sacramento, and San Diego	
June 11		**Tribal** Red Lion Hotel Redding 1830 Hilltop Drive Redding, CA 96002
June 12-13	Red Lion Hotel Redding 1830 Hilltop Drive Redding, CA 96002	
July 11		**Marine Resources** California Department of Parks and Recreation Orange Coast District Office Training Room 3030 Avenida del Presidente San Clemente, CA 92672
August 7-8	Natural Resources Building Auditorium, First Floor 1416 Ninth Street Sacramento, CA 95814	
September 5		**Wildlife Resources** Justice Joseph A. Rattigan State Building Conference Room 410 50 D Street, 4th Floor Santa Rosa, CA 95404
October 8		**Tribal** San Diego
October 9-10	San Diego	
November 5		**Marine Resources** Natural Resources Building 12th Floor Conference Room 1416 Ninth Street, Room 1206 Sacramento, CA 95814
December 11-12	Natural Resources Building Auditorium, First Floor 1416 Ninth Street Sacramento, CA 95814	

OTHER 2019 MEETINGS OF INTEREST

Association of Fish and Wildlife Agencies

- September 22-25, Saint Paul, MN

Pacific Fishery Management Council

- June 18-25, San Diego, CA
- September 11-18, Boise, ID
- November 13-20, Costa Mesa, CA

Pacific Flyway Council

- August 23, Clackamas, OR

Western Association of Fish and Wildlife Agencies

- July 11-16, Manhattan, KS

Wildlife Conservation Board

- May 22, Sacramento, CA
- August 28, Sacramento, CA
- November 21, Sacramento, CA

IMPORTANT COMMISSION MEETING PROCEDURES INFORMATION

WELCOME TO A MEETING OF THE CALIFORNIA FISH AND GAME COMMISSION

This year marks the beginning of the 150th year of operation of the Commission in partnership with the California Department of Fish and Wildlife. Our goal is the preservation of our heritage and conservation of our natural resources through informed decision making; Commission meetings are vital in achieving that goal. In that spirit, we provide the following information to be as effective and efficient toward that end. Welcome and please let us know if you have any questions.

PERSONS WITH DISABILITIES

Persons with disabilities needing reasonable accommodation to participate in public meetings or other Commission activities are invited to contact the Reasonable Accommodation Coordinator at (916) 651-1214. Requests for facility and/or meeting accessibility should be received at least 10 working days prior to the meeting to ensure the request can be accommodated.

STAY INFORMED

To receive meeting agendas and regulatory notices about those subjects of interest to you, please visit the Commission's website, www.fgc.ca.gov, to sign up on our electronic mailing lists.

SUBMITTING WRITTEN COMMENTS

The public is encouraged to comment on any agenda item. Submit written comments by one of the following methods: **E-mail** to fgc@fgc.ca.gov; **mail** to California Fish and Game Commission, P.O. Box 944209, Sacramento, CA 94244-2090; **deliver** to California Fish and Game Commission, 1416 Ninth Street, Room 1320, Sacramento, CA 95814; or **hand-deliver to a Commission meeting.** Materials provided to the Commission may be made available to the general public.

COMMENT DEADLINES

The **Written Comment Deadline** for this meeting is **5:00 p.m. on April 4, 2019.** Written comments received at the Commission office by this deadline will be made available to Commissioners prior to the meeting.

The **Late Comment Deadline** for this meeting is **noon on April 12, 2019.** Comments received by this deadline will be marked "late" and made available to Commissioners at the meeting.

After these deadlines, written comments may be delivered in person to the meeting – Please bring ten (10) copies of written comments to the meeting.

NON-REGULATORY REQUESTS

All non-regulatory requests will follow a two-meeting cycle to ensure proper review and thorough consideration of each item. All requests submitted by the **Late Comment Deadline** (or heard during public comment at the meeting) will be scheduled for receipt at this meeting, and scheduled for consideration at the next business meeting.

PETITIONS FOR REGULATION CHANGE

Any person requesting that the Commission adopt, amend, or repeal a regulation must complete and submit form FGC 1, titled, “Petition to the California Fish and Game Commission for Regulation Change” (as required by Section 662, Title 14, CCR). The form is available at http://www.fgc.ca.gov/public/information/petitionforregulatorychange.aspx. To be received by the Commission at this meeting, petition forms must have been delivered by the **Late Comment Deadline** (or delivered during public comment at the meeting). Petitions received at this meeting will be scheduled for consideration at the next business meeting, unless the petition is rejected under staff review pursuant to subsection 662(b), Title 14, CCR.

VISUAL PRESENTATIONS/MATERIALS

All electronic presentations must be submitted by the **Late Comment Deadline** and approved by the Commission executive director before the meeting.

1. Electronic presentations must be provided by email to fgc@fgc.ca.gov.
2. All electronic formats must be Windows PC compatible.
3. It is recommended that a print copy of any electronic presentation be submitted in case of technical difficulties.
4. A data projector, laptop and presentation mouse will be available for use at the meeting.

CONSENT CALENDAR

A summary of all items will be available for review at the meeting. Items on the consent calendar are generally non-controversial items for which no opposition has been received and will be voted upon under single action without discussion. Any item may be removed from the consent calendar by the Commission upon request of a Commissioner, the Department, or member of the public who wishes to speak to that item, to allow for discussion and separate action.

LASER POINTERS

Laser pointers may only be used by a speaker during a presentation; use at any other time may result in arrest.

SPEAKING AT THE MEETING

To speak on an agenda item, please complete a “Speaker Card" and give it to the designated staff member before the agenda item is announced. Cards will be available near the entrance of the meeting room. Only one speaker card is necessary for speaking to multiple items.

1. Speakers will be called in groups; please line up when your name is called.
2. When addressing the Commission, give your name and the name of any organization you represent, and provide your comments on the item under consideration.
3. If there are several speakers with the same concerns, please appoint a spokesperson and avoid repetitive testimony.
4. The presiding commissioner will allot between one and three minutes per speaker per agenda item, subject to the following exceptions:
    a. The presiding commissioner may allow up to five minutes to an individual speaker if a minimum of three individuals who are present when the agenda item is called have

ceded their time to the designated spokesperson, and the individuals ceding time forfeit their right to speak to the agenda item.

b. Individuals may receive advance approval for additional time to speak if requests for additional time to speak are received by email or delivery to the Commission office by the **Late Comment Deadline**. The president or designee will approve or deny the request no later than 5:00 p.m. two days prior to the meeting.
c. An individual requiring an interpreter is entitled to at least twice the allotted time pursuant to Government Code Section 11125.7(c).
d. An individual may receive additional time to speak to an agenda item at the request of any commissioner.

5. If you are presenting handouts/written material to the Commission at the meeting, please provide ten (10) copies to the designated staff member just prior to speaking.

STAFF SUMMARY FOR APRIL 17, 2019

2. GENERAL PUBLIC COMMENT

Today's Item **Information ☒** **Action ☐**

Receive public comments, petitions for regulation change, and requests for non-regulatory actions for items not on the agenda.

Summary of Previous/Future Actions

- **Today's receipt of requests and comments** **Apr 17, 2019; Santa Monica**
- Consider granting, denying or referring Jun 12-13, 2019; Redding

Background

This agenda item is primarily to provide the public an opportunity to address FGC on topics not on the agenda. Staff also includes written materials and comments received prior to the meeting as exhibits in the meeting binder (if received by written comment deadline), or as late comments at the meeting (if received by late comment deadline), for official FGC "receipt."

Public comments are generally categorized into three types under general public comment: (1) petitions for regulation change; (2) requests for non-regulatory action; and (3) informational-only comments. Under the Bagley-Keene Open Meeting Act, FGC cannot discuss any matter not included on the agenda, other than to schedule issues raised by the public for consideration at future meetings. Thus, petitions for regulation change and non-regulatory requests generally follow a two-meeting cycle (receipt and direction); FGC will determine the outcome of the petitions for regulation change and non-regulatory requests received at today's meeting at the next in-person FGC meeting following staff evaluation (currently Jun 12-13, 2019).

As required by the Administrative Procedure Act, petitions for regulation change will be either denied or granted and notice made of that determination. Action on petitions received at previous meetings is scheduled under a separate agenda item titled "Petitions for regulation change." Action on non-regulatory requests received at previous meetings is scheduled under a separate agenda item titled "Non-regulatory requests."

Significant Public Comments

1. New petitions for regulation change are summarized in Exhibit 1, and the original petitions are provided as exhibits 3-6.
2. Requests for non-regulatory action are summarized in Exhibit 2, and the original requests are provided as exhibits 7-9.
3. Informational comments are provided as exhibits 10-14.

Recommendation

Consider whether any new future agenda items are needed to address issues that are raised during public comment and are within FGC's authority.

Exhibits

1. Summary of new petitions for regulation change received by Apr 4, 2019 at 5:00 p.m.
2. Summary of requests for non-regulatory action received by Apr 4, 2019 at 5:00 p.m.
3. Petition #2019-004: Abandoned lobster traps, received Feb 4, 2019.
4. Petition #2019-006 AM 1: Use of bait for taking bear, received Mar 20, 2019.
5. Petition #2019-008 AM 2: Firing range in Ballona Wetlands, received Apr 8, 2019.
6. Petition #2019-009: Trinity River salmon fishing regs, received Mar 26, 2019.
7. Letter from Fred Boniello opposing use of low flow regulations to govern sport fishing access in the Gualala River, Salmon Creek, and Walker Creek, received Feb 8, 2019.
8. Email from George Osborn, on behalf of Marko Mlikotin, California Sportfishing League, requesting information on analyses and methodology used to determine sport fishing license fees, received Feb 20, 2019.
9. Letter from Dennis Fox, requesting to ban steel projectiles county-wide, and designate seasons or areas for primitive sidelock muzzleloaders, received Apr 2, 2019.
10. Letter from Brandon Criss, representing Siskiyou County Board of Supervisors, in opposition to the proposed listing of Upper Klamath-Trinity river spring Chinook salmon under California Endangered Species Act, received Feb 1, 2019.
11. Letter from Laura Bynum, on behalf of Siskiyou County Board of Supervisors, providing a copy of Resolutions 08-153 and 13-87 relating to jurisdiction over lands and/or resources in Siskiyou County, and the establishment of a policy of no net increase in State and Federal land ownership in Siskiyou County, respectively, received Feb 19, 2019.
12. Letter from Irvin Jim, Jr., representing Woodfords Washoe Community Council and the Washoe Tribe of California and Nevada, in support of Petition #2018-016 to remove Hope Valley Wildlife Area from DFW Lands Pass Program, received Mar 19, 2019.
13. Email from Jonathan Graham regarding management of aquatic vegetation and sea lion populations in the California Delta, received Mar 25, 2019.
14. Email from Thomas Mallory regarding hunting laws in Siskiyou County, received Apr 4, 2019.

Motion/Direction (N/A)

STAFF SUMMARY FOR APRIL 17, 2019

3. COMMITTEE ASSIGNMENTS

Today's Item **Information ☐** **Action ☒**

Consider and make potential changes to assignments for FGC's Marine Resources Committee (MRC), Tribal Committee (TC) and/or Wildlife Resources Committee (WRC).

Summary of Previous/Future Actions

- Eric Sklar and Peter Silva appointed to MRC — Feb 6, 2019; Sacramento
- Russell Burns appointed to WRC; second co-chair appointment vacant — Feb 6, 2019; Sacramento
- Jacque Hostler-Carmesin and Peter Silva appointed to TC — Feb 6, 2019; Sacramento
- **Today's review of committee assignments** — **Apr 17, 2019; Santa Monica**

Background

FGC has three standing committees formed from FGC membership and authorized in statute: MRC, TC and WRC (sections 105, 106.5, and 106, respectively). Each committee meets three times per year. MRC is charged with providing recommendations to FGC regarding marine issues directed to it by FGC; WRC is similarly charged related to terrestrial and inland fisheries issues. TC provides recommendations to FGC relative to matters associated with California's Native American tribes and tribal communities.

Each committee consists of at least one commissioner, and assignments are made annually by FGC; no more than two commissioners may co-chair each committee.

Current assignments were made in Feb of 2019; at that time, one commission seat was vacant, and FGC directed staff to schedule a review of committee membership upon the appointment of a new commissioner. On Mar 19, 2019 Samantha Murray was sworn in as a new commissioner, appointed by Governor Newsom.

Significant Public Comments (N/A)

Recommendation (N/A)

Exhibits (N/A)

Motion/Direction

Moved by _____ and seconded by _____ that the Commission assigns Commissioner Murray to the _____ Committee and changes other assignments as follows: _____.

STAFF SUMMARY FOR APRIL 17, 2019

4. INITIAL PLM LICENSE AND HARVEST PROGRAM (CONSENT)

Today's Item **Information** ☐ **Action** ☒

Approve the initial private lands wildlife habitat enhancement and management (PLM) area license and seasons, harvests and habitat improvements for 2019-2023 for one property (Anderson Ranch in Glenn County).

Summary of Previous/Future Actions (N/A)

Background

Fish and Game Code sections 3400-3409 and Title 14, Section 601 prescribe conditions for a PLM program that provides incentives for landholders to manage their property for the benefit of fish and wildlife in exchange for access to increased recreational opportunities, such as hunting tags or extended seasons ("harvest program"). In return for a harvest program, the landholder must prepare a biologically-sound wildlife management plan and complete specific wildlife habitat improvements on the PLM property.

There are three types of actions associated with the PLM program: an initial five-year PLM license; an annual list of PLM seasons, harvests, and habitat improvements; and a five-year PLM license renewal, with conditions unique to each participant's property.

Proposed annual seasons, harvests, and habitat improvements for one PLM property—Anderson Ranch in Glenn County—have been reviewed by DFW and found to be in compliance with FGC regulations and policies for PLMs; the applicant has identified the location where records will be kept and made available for inspection (Exhibit 1).

Significant Public Comments (N/A)

Recommendation

FGC staff: Approve initial license and seasons, harvests, and habitat improvements for one PLM property as recommended by DFW, under a motion to adopt the consent calendar.

DFW: Approve initial license and annual seasons, harvests, and habitat improvements for one property, under the conditions specified in Exhibit 2.

Exhibits

1. DFW memo, received Apr 8, 2019
2. *PLM Area License: Initial 5-Year Management Plan, 2019-2023, Proposed Seasons, Harvests, and Habitat Improvements*, received Apr 8, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission adopts items 4-11 on the consent calendar.

STAFF SUMMARY FOR APRIL 17, 2019

5. FIVE-YEAR PLM LICENSE RENEWAL AND HARVEST PROGRAMS (CONSENT)

Today's Item **Information** ☐ **Action** ☒

Approve the five-year renewal of private lands wildlife habitat enhancement and management (PLM) area licenses for 2019-2023, and seasons, harvests and habitat improvements for 2019-2023 on nine properties.

Summary of Previous/Future Actions (N/A)

Background

Fish and Game Code sections 3400-3409 and Title 14, Section 601 prescribe conditions for a PLM program that provides incentives for landholders to manage their property for the benefit of fish and wildlife in exchange for access to increased recreational opportunities, such as hunting tags or extended seasons ("harvest program"). In return for a harvest program, the landholder must prepare a biologically-sound wildlife management plan and complete specific wildlife habitat improvements on the PLM property.

There are three types of actions associated with the PLM program: an initial five-year PLM license and plan; an annual list of PLM seasons, harvests, and habitat improvements; and a five-year PLM license renewal, with conditions unique to each participant's property.

Proposed wildlife management plans and annual seasons, harvests, and habitat improvements for the nine properties have been reviewed by DFW and found to be in compliance with FGC regulations and policies for PLMs; applicants have identified the location where records will be kept and made available for inspection (Exhibit 1).

Significant Public Comments (N/A)

Recommendation

FGC staff: Approve five-year renewal of PLM licenses, and annual seasons, harvests and habitat improvements as recommended by DFW, under a motion to adopt the consent calendar.

DFW: Approve the specified wildlife management plans, five-year PLM license renewals for 2019-2023, and seasons, harvests, and habitat improvements for 2019-2023 for nine properties, under the conditions specified in Exhibit 2.

Exhibits

1. DFW memo, received Apr 8, 2019
2. *PLM Area License: New 5-Year Management Plans, 2019-2023, Proposed Seasons, Harvests, and Habitat Improvements*, received Apr 8, 2019
3. Alphabetical listing of PLM properties for five-year license renewals and new area plans, received Apr 8, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission adopts items 4-11 on the consent calendar.

STAFF SUMMARY FOR APRIL 17, 2019

6. ANNUAL PLM HARVEST PROGRAMS (CONSENT)

Today's Item **Information** ☐ **Action** ☒

Approve the annual private lands wildlife habitat enhancement and management (PLM) area seasons, harvests and habitat improvements for 2019/2020 on forty-five properties.

Summary of Previous/Future Actions (N/A)

Background

Fish and Game Code sections 3400-3409 and Title 14, Section 601 prescribe conditions for a PLM program that provides incentives for landholders to manage their property for the benefit of fish and wildlife in exchange for access to increased recreational opportunities, such as hunting tags or extended seasons ("harvest program"). In return for a harvest program, the landholder must prepare a biologically-sound wildlife management plan and complete specific wildlife habitat improvements on the PLM property.

There are three types of actions associated with the PLM program: an initial five-year PLM license; an annual list of PLM seasons, harvests, and habitat improvements; and a five-year PLM license renewal, with conditions unique to each participant's property.

Proposed annual seasons, harvests, and habitat improvements for the forty-five PLM properties have been reviewed by DFW and found to be in compliance with FGC regulations and policies for PLMs; applicants have identified the location where records will be kept and made available for inspection (Exhibit 1).

Significant Public Comments (N/A)

Recommendation

FGC staff: Approve annual seasons, harvests, and habitat improvements for forty-five PLM properties as recommended by DFW, under a motion to adopt the consent calendar.

DFW: Approve annual seasons, harvests, and habitat improvements for forty-five properties, under the conditions specified in Exhibit 2.

Exhibits

1. DFW memo, received Apr 8, 2019
2. *PLM Area License: Annual Renewals, 2019/2020, Proposed Seasons, Harvests, and Habitat Improvements*, received Apr 8, 2019
3. Alphabetical listing of PLM properties for annual licenses and area plans, received Apr 8, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission adopts items 4-11 on the consent calendar.

STAFF SUMMARY FOR APRIL 17, 2019

7. BUMBLE BEES (CONSENT)

Today's Item **Information ☒** **Action ☐**

Receive 90-day evaluation report from DFW for the petition to list four bumble bee species as endangered under the California Endangered Species Act (CESA).

Summary of Previous/Future Actions

- Received petition — Oct 17, 2018
- FGC staff transmitted petition to DFW — Oct 26, 2018
- Public receipt of petition and approved DFW's request for a 30-day extension — Dec 12-13, 2018; Oceanside
- **Today receive DFW 90-day evaluation** — **Apr 17, 2019; Santa Monica**
- Determine if listing may be warranted — Jun 12-13, 2019; Redding

Background

In Oct 2018, FGC received a petition from three organizations to list Crotch bumble bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*), Suckley cuckoo bumble bee (*Bombus suckleyi*), and western bumble bee (*Bombus occidentalis occidentalis*) as endangered under CESA.

At its Dec 2018 meeting, FGC approved a 30-day extension for DFW to complete its evaluation of the bumble bees petition, which is being received today under the consent calendar (Exhibit 1).

This meeting is not intended for FGC discussion and FGC cannot consider the petition at this meeting, as Fish and Game Code Section 2074 requires the public to have 30 days to review the petition after receipt by FGC and public release of the evaluation report; however, under the Bagley-Keene Open Meeting Act, FGC must allow public comment on this item if requested.

Significant Public Comments (N/A)

Recommendation

FGC staff: Accept any public comment and, under a motion to adopt the consent calendar, receive the DFW petition evaluation.

Exhibits

1. DFW 90-day evaluation report (to be delivered at the meeting)

Motion/Direction

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations for items 4-11 on the consent calendar.

STAFF SUMMARY FOR APRIL 17, 2019

8. SAN BERNARDINO KANGAROO RAT (CONSENT)

Today's Item **Information** ☒ **Action** ☐

Receive petition from the Endangered Habitats League (EHL) to list San Bernardino kangaroo rat (*Dipodomys merriami parvus*) as endangered under the California Endangered Species Act (CESA).

Summary of Previous/Future Actions

- Received petition — Mar 15, 2019
- FGC transmitted petition to DFW — Mar 22, 2019
- Published notice of receipt of petition — Apr 12, 2019
- **Today's public receipt of petition** — **Apr 17, 2019; Santa Monica**
- Receive DFW 90-day evaluation — Aug 7-8, 2019; Sacramento
- Determine if listing may be warranted — Oct 9-10, 2019; San Diego

Background

A petition to list San Bernardino kangaroo rat as endangered under CESA was submitted by EHL on Mar 15, 2019 (Exhibit 1). On Mar 22, 2019, FGC staff transmitted the petition to DFW for review. A notice of receipt of petition was published in the California Regulatory Notice Register on Apr 12, 2019.

Fish and Game Code Section 2073.5 requires DFW to evaluate the petition and provide FGC a recommendation as to whether the petition contains sufficient information that the petitioned action may be warranted. Until FGC receives the DFW evaluation, FGC cannot consider the petition.

Significant Public Comments (N/A)

Recommendation

Receive the petition and accept any public comment under a motion to adopt the consent calendar.

Exhibits

1. Petition to list San Bernardino kangaroo rat as endangered, dated Mar 14, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations for items 4-11 on the consent calendar.

STAFF SUMMARY FOR APRIL 17, 2019

9. TRANSGENIC ZEBRAFISH (CONSENT)

Today's Item **Information** ☒ **Action** ☐

Receive an application for a permit to import, possess, transport or rear, or conduct research on, transgenic zebrafish.

Summary of Previous/Future Actions

- **Today's receipt of application** **Apr 17, 2019; Santa Monica**
- Review and consider action related to permit issuance Jun 12-13, 2019; Redding

Background

Pursuant to Section 671.1(a)(8)(H), Title 14, when DFW determines that a restricted species permit for transgenic aquatic animals should be issued, that decision must be reviewed by FGC. FGC may deny the issuance of a permit if it determines that the applicant is unable to meet the regulatory requirements for the importation, transportation, possession, and confinement of transgenic aquatic animals.

Additionally, pursuant to Fish and Game Code Section 15007(e), DFW must notify the California State Legislature's Joint Committee on Fisheries and Aquaculture and FGC upon receipt of a permit application for medical or scientific research conducted on transgenic finfish species. Notification must take place at least 30 days prior to the approval or disapproval of the permit.

This agenda item serves as notice to FGC that a restricted species permit application for use of transgenic zebrafish for research has been received from San Diego State University (Exhibit 1).

Significant Public Comments (N/A)

Recommendation

Receive the restricted species permit application and accept any public comment, under a motion to adopt the consent calendar.

Exhibits

1. DFW memo and permit renewal application, dated Apr 4, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations for items 4-11 on the consent calendar.

STAFF SUMMARY FOR APRIL 17, 2019

10. ARCHERY EQUIPMENT AND CROSSBOW (CONSENT)

Today's Item **Information ☐** **Action ☒**

Consider adopting proposed changes to archery equipment and crossbow regulations, including bow draw weight and possession of a firearm while bow hunting.

Summary of Previous/Future Actions

- WRC vetting — Sep 20, 2018; WRC, Sacramento
- Notice hearing — Dec 12-13, 2018; Oceanside
- Discussion hearing — Feb 6, 2019; Sacramento
- **Today's adoption hearing** — **Apr 17, 2019; Santa Monica**

Background

At FGC's Dec 2018 meeting, DFW proposed two changes to archery equipment and crossbow regulations as reflected in the initial statement of reasons (ISOR). The first change proposes draw weights for bows and crossbows. The second, authorizing possession of a concealable firearm while archery hunting, was proposed in regulation change Petition #2017-001.

At the Feb 2019 discussion hearing, FGC received a report from California Bowmen Hunters of all current archery hunting regulations from nine western states for comparison purposes and as a basis for California to adopt similar regulations. Based on the report, DFW requested a modification of the proposed bow draw weight from 40 to 30 pounds, to conform with regulations established (or in progress) in the majority of western states identified in the report and to provide for more opportunity. At FGC's direction, an updated ISOR was drafted to reflect the change (Exhibit 1). A 15-day notice was provided to all interested and affected parties on Feb 26, 2019 (Exhibit 2).

Significant Public Comments (N/A)

Recommendation

FGC staff: Under a motion to adopt the consent calendar, determine that the project is exempt from the California Environmental Quality Act consistent with the analysis in the draft notice (Exhibit 3) and adopt the proposed regulation changes as noticed in the updated ISOR.

DFW: Adopt the regulation changes as presented in the amended ISOR.

Exhibits

1. Amended ISOR, dated Feb 12, 2019
2. 15-day notice letter, dated Feb 26, 2019
3. Draft notice of exemption, dated Jan 8, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations for items 4-11 on the consent calendar.

STAFF SUMMARY FOR APRIL 17, 2019

11. HAGFISH TRAPS (CONSENT)

Today's Item **Information ☐** **Action ☒**

Consider authorizing publication of notice of intent to amend commercial take of hagfish regulations, including use of barrel traps and buoy marking requirements for all trap types.

Summary of Previous/Future Actions

- **Today's notice hearing** **Apr 17, 2019; Santa Monica**
- Discussion/adoption hearing Jun 12-13, 2019; Redding

Background

In California, the open access commercial hagfish fishery is primarily managed via restrictions on the amount and type of gear allowed. The method for take is by one of three baited trap types: bucket trap, Korean trap, and, since 2015, barrel traps. Section 9000.5 and subdivision 9001.6(b) of Fish and Game Code define and authorize no more than a total of 500 Korean-style traps, or a total of 200 five-gallon bucket traps aboard a vessel or in the water or combination thereof. In Oct 2015, FGC approved the use of 25 barrel traps (of 40-gallon capacity) as an alternative trap type under subsection (b) of Section 180.6, Title 14, as a volumetric equivalent to the 200 five-gallon bucket trap limit.

In Aug 2016, Section 180.6, Title 14, was amended to redefine the 40 gallon volume to a dimension-based measurement for barrel trap size and, to streamline language regarding trap use by a vessel, stated that "…no permittee may possess more than 25 barrel traps aboard a vessel or in the water or combination thereof." However, as all participants engaged in hagfish fishing are required to have a general trap permit (pursuant to Fish and Game Code sections 9000.5 and 9001), the regulatory language inadvertently authorized the use of 25 barrel traps for each permittee aboard a vessel, rather than per vessel as intended. The proposed revision clarifies that the barrel trap limit is 25 per vessel, and adds a requirement for any hagfish trap buoy to be marked with the vessel's California commercial boat registration number.

The proposed changes to Section 180.6, Title 14, are:

- Remove the words "permittee may possess" from subsection (b), thus linking the 25 barrel trap limit to the vessel.
- Add subsection (c) requiring the use of the vessel's California commercial boat registration number to mark the buoy used to mark any hagfish trap (fishermen will continue to mark buoys with all fishermen L numbers operating the vessel, as required by Fish and Game Code subdivision 9006(b)).

Significant Public Comments (N/A)

Recommendation

FGC staff: Under a motion to adopt the consent calendar, authorize publication of the notice and request the effective date as recommended by DFW.

DFW: Authorize publication of the notice as detailed in the draft initial statement of reasons (ISOR; Exhibit 2), and request that the Office of Administrative Law make the regulation effective on or before October 1, 2019 (Exhibit 1).

Exhibits

1. DFW memo transmitting ISOR, received Mar 20, 2019
2. Draft ISOR
3. DFW report: *Final Report: Evaluation of the Use of 40-gallon Barrel Traps for the Take of Hagfish*, by Travis Tanaka, May 12, 2015
4. Draft economic and fiscal impact statement (Std. 399)
5. DFW memo regarding the California Environmental Quality Act, received Mar 20, 2019
6. Draft notice of exemption

Motion/Direction

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations for items 4-11 on the consent calendar.

STAFF SUMMARY FOR APRIL 17, 2019

12A. ACTING EXECUTIVE DIRECTOR'S REPORT – STAFF REPORT

Today's Item **Information ☒** **Action ☐**

Receive the acting executive director's staff report.

Summary of Previous/Future Actions (N/A)

Background

Staffing Update

Executive Director Valerie Termini continues to be on loan to DFW as acting chief deputy director and Melissa Miller-Henson contiunues as FGC's acting executive director. To adequately address critical staff workload, staff initiated additional personnel actions in Feb: Marine Advisor Susan Ashcraft is now acting deputy executive director and Elizabeth Pope, an environmental scientist from DFW's Marine Region, is on loan to FGC and serving as acting marine advisor. Elizabeth previously served in this capacity in 2016 and staff is grateful for her assistance.

Our new Sea Grant State Fellow Maggie McCann joined FGC in Mar. Maggie received her bachelor's degree from UC Santa Cruz in marine biology in 2009 and her master's degree in 2018 from CSU Monterey Bay in applied marine and watershed sciences, with an emphasis on marine sciences. She is assisting with FGC meetings and special projects under direction from MRC (fishing communities) and WRC (bullfrogs and non-native turtles).

After a competitive recruitment, our new Seasonal Clerk Andrea Levinson, joined FGC last month. Andrea is a student at Sacramento State University majoring in environmental studies and will work part-time as her school schedule allows.

Service-Based Budgeting

As directed by the legislature, DFW has embarked on a comprehensive review of its budget from a services delivery standpoint. Service-based budgeting (SBB) is a budgeting approach that identifies what specific tasks and personnel are needed to accomplish the organization's mission; the approach is task-based, labor-focused and organized by services provided to the public. Because FGC's budget is imbedded in DFW's budget, FGC staff is assisting in the SBB effort. Data gathered and analyzed through the SBB process will be used to inform future annual budget preparations, beginning in 2021.

Significant time has been allocated since Feb 2019 by three key staff members for the effort. Additional staff will be required as the work continues in phases over the next several months. This first phase is expected to be complete in summer 2019 and the final SBB report is due to the legislature in 2021.

CESA Exemption from Regulatory Process

With the passage of Senate Bill 473 (Hertzberg) last year, FGC is now exempt from the provisions of the Administrative Procedure Act for decisions made under the California Endangered Species Act (CESA). The result is a more streamlined and efficient process to add CESA species to Title 14. In Mar, the first four species affected by this new process (fisher, Humboldt marten, northern spotted owl, and tricolored blackbird) were filed with the Office of Adminstrative Law and promptly listed in regulation. The new process will make available valuable staff time to work on other critical FGC projects.

New Website Template Progress

After significant staff effort and guidance from DFW's webmaster, work on transitioning the FGC website to a new state template is nearly complete. The purpose of the transition is to meet state uniformity and accessibility standards. While the website will have a new look and feel, significant effort went into making sure the transition and the user experience will be as smooth as possible. The website address remains the same (fgc.ca.gov). To inform our stakeholders of the impending change, notices have gone out to our various electronic mailing lists. Staff is currently working with the DFW server team to prepare for the final switch over, anticipated later this month or early May.

Delegation Authority and Records Retention

Executive staff is reviewing authorities delegated from FGC to the executive director. To better reflect current responsibilities, staff plans to bring an updated list of potentially delegated tasks for consideration at an upcoming meeting. Similarly, staff is in the process of updating FGC's records retention schedule and may bring proposed amendemnts to FGC's *Retention of Commission Records Policy* for FGC consideration at a future meeting.

Significant Public Comments (N/A)

Recommendation (N/A)

Exhibits

1. *Staff Report on Staff Time Allocation and Activities*, dated April 5, 2019

Motion/Direction (N/A)

STAFF SUMMARY FOR APRIL 17, 2019

12B. ACTING EXECUTIVE DIRECTOR'S REPORT – LEGISLATIVE UPDATE AND FEDERAL REGULATORY PROPOSALS

Today's Item **Information ☐** **Action ☒**

Review and discuss legislation and potential federal regulatory actions of interest and provide staff direction on potential actions.

Summary of Previous/Future Actions (N/A)

Background

FGC staff has prepared a list of state and federal legislation that may affect FGC's resources and workload or be of interest. DFW has provided a report on state bills it has identified as being of interest, including the current status of each (Exhibit 1). In addition, a proposed federal regulatory action for gray wolves is summarized.

Today is an opportunity for FGC to provide direction to staff concerning proposed legislation and regulatory actions. At any meeting, FGC may direct staff to provide information to or share concerns with bill authors or regulatory agencies. FGC members may also take positions on bills at the same meeting an update is provided.

State Legislation

Legislative Calendar for 2019-2020

• Legislature convened 2019-20 regular session	Dec 3, 2018
• Last day for state bills to be introduced	Feb 22, 2019
• Spring recess (begins upon adjournment on 11th)	Apr 11-21, 2019
• Last day for policy committees to hear and report to fiscal committees fiscal bills introduced in their houses	Apr 26, 2019
• Last day for policy committees to hear and report to the Floor nonfiscal bills introduced in their houses	May 3, 2019
• Last day for policy committees to meet prior to June 3	May 10, 2019
• Last day for fiscal committees to hear and report to the Floor bills introduced in their house and to meet prior to Jun 3	May 17, 2019
• Floor session only	May 28-31, 2019
• Last day for bills to pass out of their house of origin	May 31, 2019
• Committee meetings may resume	Jun 3, 2019

Bills introduced during the 2019-20 Session

A number of the state bills identified in the DFW report (Exhibit 1) may affect FGC's resources and workload or are potentially of interest; these bills are listed below, with a brief summary

and the status of each found in Exhibit 1. Note that bills listed here are highlighted in yellow in Exhibit 1.

- AB 44 (Friedman) Fur products: prohibition
- AB 202 (Mathis) Endangered species: conservation: California State Safe Harbor Agreement Program Act
- AB 271 (Cooper) Civil service: Personnel Classification Plan: salary equalization
- AB 273 (Gonzalez) Fur-bearing and nongame mammals: recreational and commercial fur trapping: prohibition.
- AB 284 (Frazier) Junior hunting licenses: eligibility: age requirement
- AB 312 (Cooley) State government: administrative regulations: review
- AB 441 (Eggman) Water: underground storage
- AB 454 (Kalra) Migratory birds: Migratory Bird Treaty Act
- SB 1 (Atkins) California Environmental, Public Health, and Workers Defense Act of 2019.
- SB 62 (Dodd) Endangered species: accidental take associated with routine and ongoing agricultural activities: state safe harbor agreements
- SB 69 (Wiener) Ocean Resiliency Act of 2019
- AB 469 (Petrie-Norris) State records management: records management coordinator
- AB 527 (Voepel) Importation, possession or sale of endangered wildlife
- AB 584 (Gallagher) Sport fishing licenses
- AB 834 (Quirk) Freshwater and Estuarine Harmful Algal Bloom Program
- AB 883 (Dahle) Fish and wildlife: catastrophic wildfires: report
- AB 1254 (Kamlager-Dove) Bobcats: take prohibition
- AB 1260 (Maienschein) Endangered wildlife
- AB 1387 (Wood) Sport fishing licenses
- AB 1545 (Obernolte) Civil penalty reduction policy
- SB 262 (McGuire) Commercial fishing: landing fees: sea cucumbers
- SB 307 (Roth) Water conveyance: use of state facility with unused capacity
- SB 566 (Borgeas) Fish and Game Commission
- SB 757 (Allen) Fish and Game Code: name change

Two other state bills not included in Exhibit 1 may affect FGC's resources and workload or are potentially of interest; these bills are listed below, with a brief summary and the status of each.

- *AB 129 (Bloom) Waste Management: Plastic Microfibre.* Introduced: 12/4/2018. Status: 3/25/19: Referred to Committee on Environmental Safety and Toxic Materials; from committee chair with author's amendments and re-referred to Committee on Environmental Safety and Toxic Materials. Summary: Would require the state board to

take specified actions relating to microfiber pollution on or before July 1, 2020, and would require the state board to identify best practices for clothing manufacturers to reduce the amount of microfibers released into the environment. The bill would require, on or before January 1, 2020, a public entity that uses a laundry system, and a private entity that contracts with a state agency for laundry services, to install a filtration system to capture microfibers that are shed during washing. The bill would require, on or before January 1, 2021, a private entity that uses an industrial or commercial laundry system to install a filtration system to capture microfibers.

- *SB 61 (*Portantino, Glazer, Wiener and Bonta*) Firearms: transfers.* Introduced: 1/3/2019. Status: 4/2/19: From committee, do pass and re-refer to Committee on Appr. 04/05/19: Set for hearing on April 22. Summary: Would make the 30-day prohibition and the dealer delivery prohibition described in the bill applicable to all types of firearms. The bill would also exempt from that prohibition the purchase of a firearm, other than a handgun, by a person who possesses a valid, unexpired hunting license issued by the state, and the acquisition of a firearm, other than a handgun, at specified charity fundraising events.

Federal Legislation

There are several federal bills that may be of interest to FGC:

- *H.R. 30 (SAVES Act):* Rep. Louie Gohmert (TX-1). Status: House – 02/05/2019. Committeee on Natural Resources. Referred to the Subcommittee on Water, Oceans, and Wildlife. Limits the protection of endangered and threatened species to species that are native to the United States, thus removing protection given to nonnative species in the United States that are listed as threatened or endangered.
- *H.R. 548 (FISH Act):* Rep. Ken Calvert (CA-42). Status: House - 02/02/2019. Committee on Natural Resources. Referred to the Subcommittee on Water, Oceans, and Wildlife. Amends the Endangered Species Act of 1973 to vest in the Secretary of the Interior functions under that Act with respect to species of fish that spawn in fresh or estuarine waters and migrate to ocean waters, and species of fish that spawn in ocean waters and migrate to fresh waters.
- *H.R. 1240 (Young Fishermen's Development Act of 2019):* Rep. Don Young (AK-At Large). Status: House – 03/06/2019. Committee on Natural Resources. Referred to the Subcommittee on Water, Oceans, and Wildlife. Effort to preserve United States fishing heritage through a national program dedicated to training and assisting the next generation of commercial fishermen.

Federal Regulatory Notices

On Mar 15, 2019, the U.S. Fish and Wildlife Service (Service) published a proposed rule (Exhibit 2) to remove gray wolves (*Canis lupus*) from the list of endangered and threatened wildlife under the federal Endangered Species Act (FESA). The Service states in the notice that it evaluated the classification status of gray wolves currently listed in the United States and, using the best available scientific and commercial information, determined that gray wolves no longer meet the definitions of threatened or endangered species under FESA due to recovery. The proposed rule

does not have any effect on the separate listing of the Mexican wolf (*Canis lupus baileyi*) as endangered under FESA.

The Service indicates that any final action resulting from the proposed rule change will be based on the best scientific and commercial data available, and will be as accurate and effective as possible. As such, the Service has requested that comments or information submitted be as specific as possible and provide citations to allow the Service to verify the information; submissions merely stating support or opposition to the action without providing supporting information, although noted, will not meet the standard of best available scientific and commercial data as required under FESA.

Public comments on the proposed rulemaking must be received or postmarked by May 14, 2019. Requests for public hearings must be received by the Service in writing by Apr 29, 2019.

Significant Public Comments (N/A)

Recommendation

FGC staff: Authorize the acting executive director to work with President Sklar to draft and send a comment letter to the Service regarding the proposed regulation change to delist gray wolves under the federal Endangered Species Act, recognizing this may be done by co-authoring a letter with other state entities.

Exhibits

1. DFW legislative report, dated Apr 2019
2. Federal Register notice: Proposed Rule: Endangered and Threatened Wildlife and Plants; Removing the Gray Wolf (*Canis lupus*) from the List of Endangered and Threatened Wildlife – Docket Number: FWS-HQ-ES-2018-0097

Motion/Direction

Moved by _____ and seconded by _____ that the Commission approves delegating authority to its acting executive director to work with President Sklar to draft and send a comment letter based on themes discussed today regarding delisting the gray wolf under the federal Endangered Species Act as published in the Federal Register on March 15, 2019.

STAFF SUMMARY FOR APRIL 17, 2019

13. TRIBAL COMMITTEE (TC)

Today's Item **Information ☐** **Action ☒**

Discuss and consider approving draft agenda topics for the next TC meeting. Consider approving new topics for TC to address at a future meeting.

Summary of Previous/Future Actions

- Most recent TC meeting — Feb 5, 2019; Sacramento
- **Today consider approving draft TC agenda topics** — **Apr 17, 2019; Santa Monica**
- Next TC meeting — Jun 11, 2019; Redding

Background

(A) *TC Work Plan and Timeline*

FGC directs the work of TC. The updated work plan in Exhibit 1 includes topics and timelines for items referred by FGC to TC. Draft agenda topics proposed for the Jun 2019 TC meeting include seven topics for FGC review and consideration today:

1. Discuss/potential recommendation for simplifying statewide inland fishing regulations
2. Discuss/potential recommendation for DFW-managed lands regulations
3. Discuss changes to FGC meeting procedures regulations related to TC
4. Discuss developing a co-management definition
5. Discuss options for a technical advisory body to provide input to the TC co-chairs
6. Update on FGC's Coastal Fishing Communities Project
7. Updates from agencies and FGC staff

(B) *New TC Topics*

No new topics are proposed at this time.

Significant Public Comments (N/A)

Recommendation

FGC staff: Approve draft agenda topics for the Jun 11, 2019 TC meeting, as proposed.

Exhibits

1. TC work plan, dated Mar 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission approves the draft agenda topics for the June 2019 Tribal Committee meeting.

STAFF SUMMARY FOR APRIL 17, 2019

14. WILDLIFE RESOURCES COMMITTEE (WRC)

Today's Item **Information** ☐ **Action** ☒

Discuss and consider approving draft agenda topics for the next WRC meeting. Consider approving new topics for WRC to address at a future meeting.

Summary of Previous/Future Actions

- Most recent WRC meeting — Jan 10, 2019; WRC, Sacramento
- **Today consider approving WRC work plan** — **April 17, 2019; Santa Monica**
- Next WRC meeting — May 16, 2019; WRC, Sacramento

Background

(A) *WRC Work Plan and Draft Timeline*

FGC directs committee work. The updated work plan in Exhibit 1 includes topics and draft timelines for items referred by FGC to WRC. Draft agenda topics proposed for the May 2019 WRC meeting include:

- initial vetting of mammal hunting regulation changes;
- initial vetting of waterfowl hunting regulation changes;
- initial vetting of Central Valley and Klamath-Trinity sport fishing regulation changes;
- discussion and potential recommendation for the simplifying statewide inland fishing regulations,
- discussion and potential recommendation for DFW-manged lands regulations, and
- discuss the draft Delta Fisheries Management Policy.

(B) *New WRC Topics*

There are no new topics proposed for referral to WRC.

Significant Public Comments

1. Concern from a member of the public regarding chytrid fungus and importation of non-native bullfrogs and turtles (Exhibit 2).

Recommendation

FGC staff: Approve the draft agenda topics for the May 2019 WRC meeting.

Exhibits

1. WRC work plan, updated Apr 8, 2019
2. Email from Eric Mills, Action for Animals, received Mar 29, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission approves the draft agenda topics for the May 2019 Wildlife Resources Committee meeting.

STAFF SUMMARY FOR APRIL 17, 2019

15. MAMMAL HUNTING

Today's Item **Information ☐** **Action ☒**

Consider adopting proposed changes to mammal hunting regulations for bighorn sheep, elk, elk (SHARE), and deer and elk tag validation.

Staff recommends that this item be continued to the May 16, 2019 teleconference meeting for potential adoption.

Summary of Previous/Future Actions

- WRC vetting — Sep 20, 2018; WRC, Sacramento
- Notice hearing — Dec 12-13, 2018; Oceanside
- Discussion hearing — Feb 6, 2019; Sacramento
- **Today's hearing** — **Apr 17, 2019; Santa Monica**
- Adoption hearing (if approved today) — May 16, 2019; Teleconference

Background

FGC approves tag counts, hunt zones, and seasons for Nelson bighorn sheep, elk, and SHARE elk hunts; final tag, zone, and season recommendations are provided in pre-adoption statements of reasons (PSOR) (exhibits 1, 4 and 5, respectively). Proposed tag countersigning/validation requirement changes are found in the initial statement of reasons (ISOR) published in Jan 2019 (Exhibit 10).

While public review of the California Environmental Quality Act (CEQA) documents for bighorn sheep and elk commenced on Feb 19, 2019, the full 45-day review period for CEQA documents filed with county clerks will not be completed until May 6, 2019. Therefore, continuing the adoption hearing to the May 16, 2019 teleconference would accommodate the addtional CEQA review timeline. A 15-day notice that the adoption hearing may be continued from today's meeting to the teleconference, to allow for additional CEQA review, was published on Mar 22, 2019 in anticipation of today's potential action (Exhibit 11).

Additionally, DFW has identified minor changes, noted in the text of the PSORs, that will require a new 15-day notice:

- simplifying the boundary description of Zone 10 for Nelson bighorn sheep (Exhibit 1),
- updating the noticed range and final tag recommendation for the Northwestern Elk Hunting Zone (subsection 364.1(i)(2)), and
- change the number of antlerless tags for the Northeast California Elk Hunting Zone (subsection 364.1(j)(1)) (Exhibit 5).

No changes are proposed to the tag countersigning/validation requirements as proposed in the ISOR.

Significant Public Comments

1. No public comments have been received since the Feb 6, 2019 discussion hearing regarding the proposed text of the regulations.
2. Three comments have been received regarding concerns with the draft supplemental environmental document for elk (Exhibits 7-9).

Recommendation

FGC staff: Continue adoption of both the draft CEQA documents and the proposed regulation changes to the May 16, 2019 teleconference to allow for the full 45-day CEQA comment period, and authorize staff to publish a second 15-day notice with the additional proposed changes.

Exhibits

1. Nelson bighorn sheep PSOR
2. Nelson bighorn sheep management plan for the Newberry, Rodman and Oro Mountains Unit, dated April 14, 2019
3. Nelson bighorn sheep CEQA filing and draft environmental document, filed Feb 19, 2019
4. Elk PSOR
5. SHARE elk hunts PSOR
6. Elk CEQA notice of completion and draft supplemental environmental document, filed Feb 19, 2019
7. Email comments from Phoebe Lenhart regarding elk CEQA, received Apr 3, 2019
8. Letter and documents from Friends of Del Norte regarding elk CEQA, received Apr 4, 2019
9. Letter from the Environmental Protection Information Center regarding elk CEQA, received Apr 4, 2019
10. Tag countersigning/validation ISOR
11. 15-day notice, dated Mar 22, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission authorizes staff to publish notice confirming it has continued to its May 16, 2019 teleconference consideration of adopting proposed changes to sections 362, 364, 364.1 and 708.6 regarding mammal hunting and tag validation regulations, and to further notice sufficiently-related additional changes to sections 362 and 364.1.

16. WATERFOWL

Today's Item **Information ☐** **Action ☒**

Adopt proposed changes to migratory waterfowl regulationsand ensure conformance with federal regulations.

Summary of Previous/Future Actions

- WRC vetting — Sep 20, 2018; WRC, Sacramento
- Notice hearing — Dec 12-13, 2018; Oceanside
- Discussion hearing — Feb 6, 2019; Sacramento
- **Today's adoption hearing** — **Apr 17, 2019; Santa Monica**

Background

At the FGC notice hearing in Dec 2018, DFW proposed changes to migratory waterfowl regulations in Section 502 to comply with proposed frameworks for the 2019-20 seasonas approved by the Pacific Flyway Council. The proposed frameworks are scheduled to be adopted by the U. S. Fish and Wildlife Service (Service) in late April.

Bag limits and season lengths remain unchanged from current regulations, except for allowances for calendar progression. In addition to federal framework conformance measures (exhibits 1 and 2), DFW proposes to:

1. add small Canada geese to the regular season in subsection 502(d)(1)(B) for the Northeastern California Zone,
2. add small Canada geese to season in subsection 502(d)(6)(A)3 for the Klamath Basin Special Management Area, and
3. open the late season for white geese two weeks after the close of the regular season in subsection 502(d)(6)(A)9. for the Imperial County Special Management Area.

Duck Season Dates

The federal frameworks include an option to allow the duck season to close Jan 31 rather than the last Sunday in Jan, based on a request from the State of Mississippi. This change allows the season to close up to six additional days later, compared to closing the last Sunday in Jan. At the Dec 2018 FGC meeting, the California Waterfowl Association (CWA) requested that FGC consider the change in season date. FGC added this as an option to the Initial Statement of Reasons (ISOR) prior to going to notice. Prior to adopting regulation changes, FGC must select one of two duck season closing date options.

***Option 1: Close the last Sunday in Jan (no change)*:** Option 1 would allow more time to work with stakeholders and counties to determine potential impacts of closing the season on Jan 31, which could be considered in the next waterfowl package. This option also allows for a five-day falconry-only season (outside of the shotgun season) because in most zones only 102 days are currently proposed out of a possible 107 days. The request for a falconry-only season was made by the California Hawking Clubs (CHC) (Exhibit 4).

Option 2: Establish Jan 31 as the end of regular season: Option 2 would provide more opportunity to the general waterfowl hunting community by using the full 107 available days for the regular season, as requested by the California Waterfowl Association (CWA) at the Dec 2018 FGC meeting, but would eliminate the ability to provide a falconry-only season outside of the shotgun season.

Significant Public Comments

1. CHC urges FGC not to change the season end date in order to allow falconers to engage in waterfowl hunting after the end of the regular season without exposure to active firearms (Exhibit 4).
2. CWA requests that FGC extend the season end date to Jan 31 to provide more opportunity to the waterfowl hunting community. Over 700 form emails in support of the proposal were received by the end of the public comment period (see sample email in Exhibit 5).

Recommendation

FGC staff: Staff recommends approving changes as recommended by DFW, including selecting Option 1 to allow for: (a) a five-day falconry-only season, and (b) DFW to complete a survey of waterfowl hunters to assess the impacts of a change to a Jan 31 closing date.

DFW: Approve seasons lengths and bag limits for the 2019-20 waterfowl hunting season and other changes to conform to the framework and changes to goose hunting as reflected in the ISORs (exhibits 1-2). DFW recommends the "no change" option (Option 1) for the closing date. However, DFW does not have any objection to the Jan 31 closure date option (Exhibit 6). DFW will provide season dates for both options at the meeting.

Exhibits

1. Conformance ("concurrence") with federal regulations ISOR
2. Migratory waterfowl ISOR
3. Final environmental document, dated Apr 17, 2019
4. Email from William Ferrier, representing CHC, received Feb 14, 2019
5. Sample form email on subject "Please support 5 additional days of duck hunting"
6. DFW memo received Apr 9, 2019
7. DFW presentation received Apr 11, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission finds that the environmental document reflects the independent judgment of the Commission, certifies the final environmental document, adopts the proposed project, selects Option 1 (no change to season end date from last Sunday in Jan), and adopts the staff recommendations to section 502 and section 509, regarding migratory waterfowl regulations for the 2019-2020 season.

OR [see next page]

STAFF SUMMARY FOR APRIL 17, 2019

Moved by _____ and seconded by _____ that the Commission certifies the final environmental document, adopts the proposed project, selects Option 2 (change season end date to Jan 31), and adopts proposed changes to section 502 and section 509, regarding migratory waterfowl regulations for the 2019-2020 season.

STAFF SUMMARY FOR APRIL 17, 2019

17. KLAMATH RIVER BASIN SPORT FISHING

Today's Item **Information** ☒ **Action** ☐

Discuss proposed changes to Klamath River Basin sport fishing regulations.

Summary of Previous/Future Actions

- Notice hearing — Dec 12-13, 2018; Oceanside
- Discussion hearing — Feb 6, 2019; Sacramento
- **Today's discussion hearing** — **Apr 17, 2019; Santa Monica**
- Adoption hearing — May 16, 2019, Teleconference

Background

FGC annually adopts Klamath River Basin sport fishing regulations to bring state law into conformance with federal fishery management goals. In Dec 2018, FGC authorized publication of notice of proposed changes to subsection 7.50(b)(91.1), including quotas and bag and possession limits for Klamath River Basin Fall-run Chinook Salmon (KRFC). Specific bag and possession limits for KRFC are scheduled for adoption after the Pacific Fishery Management Council (PFMC) has reviewed the status of West Coast salmon stocks and adopted final fishery allocation recommendations.

For notice purposes, DFW recommended an allocation range of 0-67,600 adult KRFC; a bag limit of between 0-4 KRFC, of which 0-4 may be adult KRFC until the quota is met, then 0 adult KRFC; and a possession limit of 0-12 KRFC, of which 0-4 may be adult fish when the take of adult fish is allowed (see Exhibit 2).

A pre-season stock projection of 274,200 adult KRFC was released by PFMC in Mar 2019 (Exhibit 3), and the 2019 basin allocation will be recommended by PFMC at its Apr 9-16, 2019 meeting. At today's FGC meeting, DFW will recommend a specific in-river sport harvest quota based on the allocation by PFMC. Final changes to regulations will be adopted at FGC's May 16, 2019 teleconference.

Significant Public Comments

1. James Stone, President, NorCal Guides and Sportsmen's Association, provided oral public comment at the Feb 6, 2019 FGC meeting. Mr. Stone asked that FGC amend the regulatory language, changing "total length" to "fork length" to have parity and equality between the way that DFW and all biologists and hatcheries consider a jack salmon (by fork length) and fishermen consider a jack salmon (by total length).

Recommendation

FGC staff: FGC staff concurs that the public comment does not warrant changes to the proposed regulation for the reasons set forth in DFW's pre-adoption statement of reasons (Exhibit 5).

DFW: DFW does not believe the public comment warrants changes to the proposed Klamath River Basin sport fishing regulations (see exhibits 4 and 5).

Exhibits

1. DFW memo transmitting initial statement of reasons (ISOR), received Dec 3, 2018
2. ISOR
3. DFW press release, *'Slightly Improved' Forecast for California's 2019 Ocean Salmon Season*, published Mar 1, 2019
4. DFW memo transmitting pre-adoption statement of reasons (PSOR), received Apr 8, 2019
5. PSOR

Motion/Direction (N/A)

STAFF SUMMARY FOR APRIL 17, 2019

18. CENTRAL VALLEY SALMON SPORT FISHING

Today's Item **Information** ☒ **Action** ☐

Discuss proposed changes to Central Valley salmon sport fishing regulations.

Summary of Previous/Future Actions

- Notice hearing — Dec 12-13, 2018; Oceanside
- Discussion hearing — Feb 6, 2019; Sacramento
- **Today's discussion hearing** — **Apr 17, 2019; Santa Monica**
- Adoption hearing — May 16, 2019, Teleconference

Background

In Dec 2018, FGC authorized publication of notice of proposed changes to subsections 7.50(b)(5), et al., including a range of size, bag and possession limits for Sacramento River Fall-run Chinook Salmon (SRFC) in the American, Feather, Mokelumne, and Sacramento rivers to encompass possible Pacific Fishery Management Council (PFMC) 2019 recommendations for Central Valley salmon escapement goals. For consistency, FGC generally adopts regulations to bring state law into conformance with federal fishery management goals for Central Valley salmon.

The scope of options in the initial statement of reasons (ISOR; Exhibit 2) is intentionally broad to allow for flexibility in developing the final Central Valley salmon limits. A pre-season stock projection of 379,600 adult SRFC was released by PFMC in Mar 2019 (Exhibit 6), and the final escapement goals will be established by PFMC at its Apr 9-16, 2019 meeting.

At today's FGC meeting, DFW will recommend specific size, bag and possession limits for SRFC based on the final escapement goals established by PFMC. Final changes to regulations will be adopted at FGC's May 16, 2019 teleconference.

Three options are presented for consideration:

- Option 1 allows take of any size Chinook salmon;
- Option 2 allows for take of a limited number of adult (3-5 year-old) Chinook salmon, with grilse (two year-old) Chinook salmon making up the remainder of the daily bag and possession limits; or
- Option 3 allows for take of only grilse Chinook salmon.

When considering a grilse fishery, it is important to determine a size cut-off that balances angling harvest opportunity for male grilse versus preserving the limited number of females available to spawn. DFW is proposing a grilse salmon size limit range of less than or equal to 26 to 28 inches total length, and this size limit range will be discussed at today's FGC meeting.

All options increase fishing opportunities on the Feather and Mokelumne rivers by: (1) extending the salmon fishing season by two weeks on the Feather River between the Thermalito Afterbay Outfall and the Live Oak boat ramp; and (2) by extending the salmon and hatchery steelhead

fishing season by two and one-half months on approximately ten miles of the Mokelumne River between the Highway 99 Bridge and Elliott Road.

California Environmental Quality Act (CEQA)

A draft negative declaration has been prepared (Exhibit 4) and was filed with the State Clearinghouse on Mar 22, 2019 (Exhibit 5).

The initial study and FGC staff review of the project showed that the project will not have any significant or potentially significant effects on the environment and therefore no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment.

Based on the initial study, implementing the proposed project will not have any significant or potentially significant effects on the environment. Therefore, a draft negative declaration has been prepared and a notice of completion with the prepared draft negative declaration to be filed with the State Clearinghouse consistent with CEQA and Section 15205(e), Title 14, California Code of Regulations.

Significant Public Comments

1. One comment requesting that the daily bag limit for Chinook salmon be retained at one fish per day in order to allow the salmon population numbers to fully recover (Exhibit 7).

Recommendation (N/A)

Exhibits

1. DFW memo transmitting ISOR, received Dec 3, 2018
2. ISOR
3. DFW memo transmitting negative declaration, received Mar 20, 2019
4. Draft negative declaration
5. Notice of completion, filed with State Clearinghouse Mar 22, 2019
6. DFW news release, *'Slightly Improved' Forecast for California's 2019 Ocean Salmon Season*, published Mar 1, 2019
7. Email from Jean Wallen, requesting the retention of a daily bag limit of one Chinook salmon, received Mar 25, 2019

Motion/Direction (N/A)

STAFF SUMMARY FOR APRIL 17, 2019

19. UPPER KLAMATH-TRINITY RIVER SPRING CHINOOK SALMON

Today's Item **Information ☐** **Action ☒**

Discuss and consider authorizing take of upper Klamath-Trinity River spring Chinook salmon (also referred to as upper Klamath-Trinity spring Chinook salmon, or UKTSCS) under Section 2084 of the Fish and Game Code.

Summary of Previous/Future Actions

- Determined that listing under CESA may be warranted — Feb 6, 2019; Sacramento
- Adopted emergency regulations to reconcile recreational take regulations with the CESA prohibition — Feb 6, 2019; Sacramento
- **Today's consideration of authorizing take under Section 2084** — **Apr 17, 2019; Santa Monica**

Background

In Jul 2018, a petition to list UKTSCS as an endangered species under the California Endangered Species Act (CESA) was submitted (see Exhibit 1 for background). Acceptance of a petition under CESA, based on a finding by FGC that action may be warranted, initiates a one-year review by DFW for determining the species' status. During the status review period, the species is considered a "candidate" species, which automatically confers CESA take prohibition measures to protect the candidate species (Fish and Game Code Section 2085).

CESA also provides that FGC may, by adopting regulations, authorize take of certain threatened or endangered species and take of candidate species (Fish and Game Code Section 2084 [Exhibit 2]). Section 2084 allows FGC to authorize take based on the best available scientific information when the take is otherwise consistent with CESA.

At its Feb 6, 2019 meeting, FGC found that the petition to list UKTSCS may be warranted and adopted emergency regulations (exhibits 1 and 3) to revise regulations governing recreational take of UKTSCS in the Klamath River Basin to reconcile them with the CESA protection for the candidate species found in Section 2085. The emergency regulations authorized in Feb went into effect Feb 28, 2019 and will expire Aug 28, 2019 unless FGC takes further action.

Under the adopted emergency regulations, the Klamath River, from 3,500 feet downstream of Iron Gate Dam to the mouth, is closed to salmon fishing through Aug 14, 2019; the Trinity River downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat is closed to salmon fishing through Oct 15, 2019; and the Trinity River downstream of the Highway 299 West bridge at Cedar Flat is closed to salmon fishing until Aug 31, 2019. Additionally, Klamath River Basin Chinook salmon possession limits for the affected river segments and time periods were changed from 2 to "Closed to salmon fishing. No take or possession of Chinook salmon." (Note that rivers and river segments of the Klamath River Basin not listed above - such as the portion of the Klamath River from Iron Gate Dam to 3,500 feet downstream of the dam, and the Salmon River - were already closed to the take of spring Chinook Salmon prior to the emergency action.)

At its Feb 6, 2019 meeting, FGC received testimony and letters from several members of the public, the Del Norte County Board of Supervisors, and the Siskiyou County Board of Supervisors, requesting that FGC consider shortening the closed periods or otherwise allow some take of Chinook salmon during the spring season (exhibits 7 and 8). Letters addressed the substantial economic impact this fishery and its associated recreation-based tourism has on the local economy; while these factors cannot be considered in the listing decision, they may be considered as a factor in authorizing some form of take if the restrictions in 2084 can be accommodated. The economic factors, coupled with the temporary nature of 2085 protections for candidate species, may constitute an emergency that authorizes FGC to address the matter through regulation.

In response to the multiple requests, FGC requested DFW provide a recommendation at today's meeting concerning 2084 regulations. DFW held stakeholder meetings Mar 7, 2019 in Crescent City, Mar 18, 2019 in Sacramento, and Mar 26, 2019 in Redding to discuss various options with stakeholders and the public, which has informed the 2084 regulatory options DFW will present today for FGC consideration.

Based on DFW explanation of the stakeholder efforts, DFW's opinion of the potential impacts to the fishery, and public comment, FGC may have an opportunity to adopt a new emergency regulation that provides substantial protection to the UKTSCS, but allows limited take at the end of the traditional spring season. Such an action would render the Feb amendments to Section 7.50 unnecessary, and could be allowed to expire in Aug 2019.

Significant Public Comments

1. Del Norte County Board of Supervisors (Exhibit 4) and its stakeholders request that the season open Jul 1 on the Klamath River from the mouth to the confluence of the Trinity River, with a one fish bag limit and a two fish possession limit.
2. Petitioners (Exhibit 5) request: a Jul 16 opener on the Klamath River between the mouth and the confluence with the Trinity River; extending the closure on the remainder of the Klamath an additional two weeks until Aug 31; the Salmon River remaining closed year-round to salmon fishing; the Trinity River between the New River and the mouth remaining closed until Aug 31; and the Trinity upstream of the New River reverting to the pre-emergency reglations.
3. Comments received on the emergency regulations adopted in Feb 2019, expressed concern over hardship resulting from the emergency closures (example in Exhibit 6).

Recommendation

FGC staff: If FGC wants to authorize some level of take:

1. Determine whether FGC considers the financial impacts to the local economy, coupled with the sudden and temporary nature of the candidate species protections, severe enough to constitute an emergency necessary for the immediate preservation of the public peace, health and safety, or general welfare.
2. If FGC determines there is an emergency, adopt emergency regulations in accordance with the limitations of Fish and Game Code Section 2084. The regulations would provide protection for UKTSCS during the majority of the time that the prior, non-emergency regulations had authorized take, but allow limited take at the end of

the spring; this would render unnecessary the Feb 2019 amendments authorized through emergency action.

3. Add a regular rulemaking to FGC's rulemaking timetable, with the notice, discussion and adoption meetings listed as "TBD".
4. Authorize staff to add re-adoption of today's emergency regulation to FGC's rulemaking timetable, if needed to maintain provisions until a regular rulemaking is adopted and in effect.

Exhibits

1. Staff summary from Feb 2019 FGC meeting (for background purposes only)
2. Fish and Game Code Section 2084
3. Emergency regulations language adopted by FGC on Feb 6, 2019
4. Letter from Del Norte County Board of Supervisors, received Mar 29, 2019
5. Letter from the Salmon River Restoration Council and Karuk Tribe to DFW, dated Apr 3, 2019
6. Email from Patrick McCalmont, received Feb 20, 2019 (example comment on emergency regulations)
7. Letter from Del Norte County Board of Supervisors, received Dec 17, 2018
8. Letter from Siskiyou County Board of Superviors, received Jan 22, 2019
9. DFW presentation

Motion/Direction

- Moved by _____ and seconded by _____ that the Commission finds, pursuant to Section 399 of the Fish and Game Code, that adopting the proposed emergency regulation is necessary for the immediate preservation of the public peace, health and safety, or general welfare.
- The Commission further determines, based on the record, that this approval is exempt from the California Environmental Quality Act as an action necessary to prevent or mitigate an emergency as specified in Section 15269(c), Title 14 and Public Resources Code Section 21080(b)(4), as well as to protect a natural resource pursuant to the guidelines in Title 14, Section 15307, and relying on Title 14, Section 15061(b)(3).
- The Commission further determines, pursuant to Section 11346.1 of the Government Code, that an emergency situation exists and finds the proposed regulation is necessary to address the emergency.
- Therefore, the Commission adopts the emergency regulation to amend Section 7.50, Title 14, California Code of Regulations, as follows_____, with an effective date of _____.
- Further, the Commission directs staff to update the rulemaking timetable as outlined in the staff recommendations.

STAFF SUMMARY FOR APRIL 17, 2019

20. STRATEGIC PLANNING

Today's Item **Information** ☒ **Action** ☐

This is a standing agenda item for 2018-19 FGC meetings as FGC develops a new strategic plan. Today FGC will receive an update on the next steps in the strategic planning process.

Summary of Previous/Future Actions

- First FGC strategic planning meeting — Feb 22, 2018; Sacramento
- Adopted mission, vision and core values — Dec 12-13, 2018; Oceanside
- **Today's update** — **Apr 17, 2019; Santa Monica**

Background

FGC created its current strategic plan in 1998, which includes a mission statement and a vision statement. Over the ensuing 20 years much has changed, among them a commission with broader authorities, a more ecosystem-based approach to addressing fish and wildlife issues, and new challenges facing wildlife populations. With its upcoming 150-year anniversary, FGC determined that the time is right to reassess its mission, vision, and to develop a set of core values to guide a forward-thinking update to the strategic plan.

During the first phase of its strategic planning process, FGC held several public discussions and a workshop with stakeholders about draft core values and mission and vision statements. At its Dec 2018 meeting, FGC brought the first phase of planning to a close by adopting the core values and revised mission and vision statements that had been developed in concert with staff and stakeholders (Exhibit 1). FGC also indicated that the core values and mission and vision statements would be reevaluated during the third, and final, planning phase.

The second phase of the planning process will consist primarily of data gathering and synthesis with staff, stakeholders and commissioners. With the various staffing transitions beginning to settle, this next phase of the strategic planning effort will begin again in earnest. Staff will develop a suite of tools, including in-person interviews, an online survey, and an evaluation of strategic plans developed by other wildlife-focused organizations to help inform future FGC discussions. Concurrently, staff is continuing to seek the assistance of a contractor to help ensure that the process stays on track for a complete and valuable product by FGC's 150-year anniversary, as well as to provide greater objectivity during the data gathering and synthesis.

Staff will provide the next update to FGC in Jun 2019.

Significant Public Comments (N/A)

Recommendation (N/A)

Exhibits

1. FGC mission, vision and core values, adopted Dec 12, 2018

Motion/Direction (N/A)

STAFF SUMMARY FOR APRIL 17, 2019

21. PETITIONS FOR REGULATION CHANGE

Today's Item **Information ☐** **Action ☒**

This is a standing agenda item for FGC to act on regulation petitions from the public that are related to marine and wildlife/inland fisheries issues. For this meeting:

(A) Action on petitions for regulation change received at the Feb 2019 meeting

(B) Pending regulation petitions referred to FGC staff and DFW for review

Summary of Previous/Future Actions

(A)

- Receipt of new petitions — Feb 6, 2019; Sacramento
- **Today's discussion and possible action** — **April 17, 2019; Sacramento**

(B)

- **N/A**

Background

As of Oct 1, 2015, any request for FGC to adopt, amend, or repeal a regulation must be submitted on form FGC 1, "Petition to the California Fish and Game Commission for Regulation Change" (Section 662, Title 14). Petitions received at an FGC meeting are scheduled for consideration at the next business meeting, unless the petition is rejected under 10-day staff review as prescribed in subsection 662(b). A petition may be (1) denied, (2) granted, or (3) referred to committee, staff or DFW for further evaluation or information-gathering.

(A) ***Petitions for regulation change.*** Five petitions from Feb 2019 are scheduled for action:

I. *Petition #2018-018 AM1: Extend crow hunting season in Hollenbeck Canyon Wildlife Area* (Exhibit A2)

II. *Petition #2018-019: Increase trap opening size for recreational take of shrimp south of Point Conception* (Exhibit A3)

III. *Petition #2019-001: Limit use of leased parking sites in Ballona Wetlands Ecological Reserve parking lot* (Exhibit A4)

IV. *Petition #2019-002: Authorize purchase of trap endorsement for nearshore permits converted at 2:1 rate* (Exhibit A5)

V. *Petition #2019-003: Adopt emergency regulation for recreational take of purple sea urchin at Tanker's Reef in Monterey County* (Exhibit A6)

Staff recommendations and rationales are provided in Exhibit A1.

(B) ***Pending regulation petitions.*** This is an opportunity for staff to provide a recommendation on petitions previously referred by FGC to staff, DFW, or committee for review.

No pending regulation petitions are scheduled for action at this meeting.

Significant Public Comments (N/A)

Recommendation

(A) ***FGC staff:*** Adopt staff recommendations as reflected in Exhibit A1.

DFW: See Exhibit A1 for recommendations.

(B) N/A

Exhibits

A1. List of petitions and staff recommendations received through Feburary 6, 2019, revised Apr 12, 2019
A2. Petition #2018-018 AM1 from Gary Brennan, received Dec 6, 2018
A3. Petition #2018-019 from Don Greeno, received Dec 18, 2018
A4. Petition #2019-001 from Walter Lamb, received Jan 7, 2019
A5. Petition #2019-002 from Brian Gorrell, Jan 24, 2019
A6. Petition #2019-003 from Keith Rootsaert, Jan 30, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations as reflected in Exhibit A1.

OR

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations as reflected in Exhibit A1, except for Petition #_____ for which the action is _____.

STAFF SUMMARY FOR APRIL 17, 2019

22. NON-REGULATORY REQUESTS

Today's Item **Information ☐** **Action ☒**

This is a standing agenda item for FGC to act on non-regulatory requests from the public that concern wildlife and inland fisheries. For this meeting:

(A) Action on non-regulatory requests received at the Feb 2019 meeting.

(B) Update on pending non-regulatory requests referred to FGC staff or DFW for review.

Summary of Previous/Future Actions

(A)

- FGC receipt of requests — Feb 6-7, 2019; Sacramento
- **Today's action on requests** — **Apr 17, 2019; Santa Monica**

(B)

- **N/A**

Background

FGC provides direction regarding requests from the public received by mail and email and during public forum at the previous FGC meeting. Public requests for non-regulatory action follow a two-meeting cycle to ensure proper review and consideration.

(A) ***Non-regulatory requests.*** Non-regulatory requests scheduled for consideration today were received at the Feb 2019 meeting in one of three ways: (1) submitted by the comment deadline and published as tables in the meeting binder, (2) submitted by the late comment deadline and delivered at the meeting, or (3) received during public comment.

Today, three non-regulatory requests received at the Feb 2019 meeting are scheduled for action. Exhibit A1 summarizes and contains staff recommendations for each request.

(B) ***Pending non-regulatory requests.*** This item is an opportunity for staff to provide a recommendation on non-regulatory requests that were scheduled for action at a previous meeting and referred by FGC to staff or DFW for further review.

No items are scheduled for action today.

Significant Public Comments (N/A)

Recommendation

(A) Adopt staff recommendations for Feb 2019 non-regulatory requests (Exhibit A1).

Exhibits

A1. List of non-regulatory requests and staff recommendations for requests received through Feb 6, 2019

Motion/Direction

(A) Moved by _____ and seconded by _____ that the Commission adopts the staff recommendation for actions on February 2019 non-regulatory requests.

OR

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations for actions on February 2019 non-regulatory requests, except for item(s) _____ for which the action is _____.

STAFF SUMMARY FOR APRIL 17, 2019

23. DEPARTMENT INFORMATIONAL ITEMS

Today's Item **Information ☒** **Action ☐**

This is a standing agenda item to receive and discuss informational updates from DFW:

(A) Director's report

(B) Law Enforcement Division

(C) Wildlife and Fisheries Division and Ecosystem Conservation Division

(D) Marine Region

Summary of Previous/Future Actions (N/A)

Background

Verbal reports are expected at the meeting for items (A) through (D).

(A) The director's report will include an update on tricolored blackbird population estimates and progress with safe harbor agreements.

(B) The Law Enforcement Division will provide a verbal update at the meeting.

(C) The Wildlife and Fisheries Division report will include:

- An update on DFW's recruitment, retention and reactivation (R3) program, which includes the recent release of an action plan focused on increasing hunting and angling participation in California (Exhibit C1).
- An update on efforts to eradicate nutria in California, including the one year anniversary of launching a formal eradication effort (Exhibit C2), and showcasing nutria in CDFW's Invasive Species Program youth art contest (Exhibit C3), designed to increase public awareness.

(D) The Marine Region report will include a presentation (Exhibit D1) covering:

- The Marine Region 2018 year-in-review report (Exhibit D2).
- An update on annual recreational ocean salmon and Pacific halibut regulations, automatic conformance to federal regulations, and any new information related to or resulting from the Pacific Fishery Management Council and the International Pacific Halibut Commission.
- An update on federal fishery disaster declarations, including the status of National Marine Fisheries Service disaster assistance appropriated for West Coast determinations made in 2018, and the Feb 28, 2019 request from Governor Newsom to U.S. Secretary of Commerce Wilbur Ross to declare a fishery resource disaster for the commercial red urchin fishery in the Northern Management Zone (north of Monterey/San Luis Obispo County Line) (Exhibit D3).
- An update on efforts and the timeline for transitioning commercial fisheries landing receipts to electronic format (E-Tix).

Significant Public Comments (N/A)

Recommendation (N/A)

Exhibits

C1. DFW's *California Hunting and Fishing Recruitment, Retention, and Reactivation (R3) Action Plan: A Path for Protecting the Future of Outdoor Activities and Conservation in California*, dated Jan 2019
C2. DFW News: *CDFW Marks One-Year Anniversary of Nutria Eradication Effort*, dated Mar 25, 2019
C3. DFW News: *Youth Art Contest Encourages Kids to Learn about Invasive Nutria*, dated Apr 2, 2019
D1. DFW presentation, received Apr 3, 2019
D2. DFW's *Marine Region 2018 Year in Review*, dated Mar 7, 2019
D3. Letter from Governor Gavin Newsom to U.S. Department of Commerce Secretary Wilbur Ross, dated Feb 28, 2019

Motion/Direction (N/A)

STAFF SUMMARY FOR APRIL 17, 2019

24. MARINE RESOURCES COMMITTEE

Today's Item **Information ☐** **Action ☒**

Receive summary from Mar 20, 2019 MRC meeting and consider adopting MRC recommendations. Receive update on MRC work plan and draft timeline. Discuss and consider approving new topics for MRC review.

Summary of Previous/Future Actions

- Most recent MRC meeting — Mar 20, 2019; Sacramento
- **Today consider approving MRC recommendations** — **Apr 17, 2019; Santa Monica**
- Next MRC meeting — Jul 11, 2019; MRC, San Clemente

Background

MRC works under FGC direction to set and accomplish its work plan (Exhibit 1).

MRC Meeting Summary

MRC met on Mar 20 and discussed:

- Pacific herring commercial fishing season and Pacific Herring Fishery Management Plan (FMP) updates
- Red Abalone FMP update
- Marine Life Management Act (MLMA) master plan implementation update
- Coastal Fishing Communities Project update
- Offshore marine aquaculture programmatic environmental impact report development update
- Shellfish aquaculture best management practices development update
- Commercial trap fishing gear informational presentations

A summary of the meeting is provided in Exhibit 2.

MRC Recommendations

Based on the Mar 20 meeting discussion, MRC developed a recommendation for FGC consideration: Refer a new topic to MRC for its Jul 2019 meeting based on a request from George Osborn, representing California Sportfishing League, to provide an informational presentation on options to shift more authority for sport fisheries to FGC, and expand the topic to include state commercial fisheries currently under legislative authority. To avoid increased workload for FGC staff, MRC requested that Mr. Osborn solicit commercial representative participation in the presentation and conversation, and to develop the informational presentation with guidance from FGC staff.

Significant Public Comments

1. A recreational abalone fisherman expressed his appreciation for FGC and DFW leadership efforts in developing the red abalone FMP, specifically the peer review, integration of both the DFW and The Nature Conservancy proposals, and the allowance for a *de minimis* fishery. If successful, he believes this process could serve as a blueprint for other fisheries (Exhibit 3).

Recommendation

FGC staff: Approve MRC recommendation to add a new topic to the MRC work plan.

Exhibits

1. MRC work plan, updated Apr 2019
2. Meeting summary from Mar 20, 2019 MRC meeting
3. Email from Jack Likins, received Mar 6, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission approves the recommendation from the March 20, 2019 Marine Resources Committee meeting, as proposed.

OR

Moved by _____ and seconded by _____ that the Commission approves the recommendation from the March 20, 2019 Marine Resources Committee meeting, except to _____.

STAFF SUMMARY FOR APR 17, 2019

25. WHALE AND TURTLE PROTECTION – DUNGENESS CRAB FISHERY

Today's Item **Information** ☐ **Action** ☒

Receive update on legal settlement agreement to protect whales and sea turtles from entanglement in commercial Dungeness crab gear, and consider potential application to the recreational Dungeness crab fishery.

Summary of Previous/Future Actions (N/A)

Background

FGC has authority to regulate the recreational Dungeness crab fishery; however, authority over the commercial Dungeness crab fishery is held by DFW and the California State Legislature. The commercial Dungeness crab fishery operates by using round baited traps covered with netting, which are then set in deeper water and tied to floating buoys. In recent years, whale populations in California's waters have increased, leading to greater presence in Dungeness crab fishing grounds and an increased risk of entanglement in deployed fishing gear.

In 2015, DFW, in partnership with the National Marine Fisheries Service (NMFS) and California Ocean Protection Council (OPC), convened the Dungeness Crab Fishing Gear Working Group to "tackle the challenge of reducing the risk of whale entanglements in the California Dungeness crab fishery". In 2017 , following a drastic increase in the number of whale entanglements off the West Coast, the Center for Biological Diversity sued DFW, challenging DFW authorization of the crab fishery as a violation of Section 9 of the federal Endangered Species Act for take of blue and humpback whales and leatherback sea turtles.

On Mar 26, 2019, DFW, together with the Center for Biological Diversity and the Pacific Coast Federation of Fishermen's Associations (as intervenor-defendant), announced they had reached a settlement and filed stipulation to stay the case (Exhibit 1); the settlement includes a series of interim measures to protect listed whales and turtles in the commercial Dungeness crab fishery, using the best available science, until DFW receives an incidental take permit from the federal government. The settlement (Exhibit 2) includes an "Exhibit A – Terms of Agreement" that defines specific measures to be taken.

In a Mar 29, 2019 statement (Exhibit 3), the Dungeness Crab Fishing Gear Working Group provided background, context, and risk assessment strategies for both commercial and recreational crab fisheries, which built on an advisory released by the group's Evaluation Team; the team had just convened on Mar 19 to proactively discuss and assess relative risk of entanglements following reports of increased humpback whale concentrations (Exhibit 4). Specifically, the Dungeness Crab Fishing Gear Working Group encouraged recreational Dungeness crab fishermen, as well as other fisheries using fixed gear, to review the risk assessment and consider fishing as minimal gear as possible to reduce vertical lines, and to avoid fishing in higher risk areas during spring and summer months (Exhibit 3).

This meeting provides FGC an opportunity to discuss the potential implications of the terms of the agreement for the recreational Dungeness crab fishery.

Significant Public Comments (N/A)

Recommendation

FGC staff: Discuss the potential implications of the terms of the agreement for the recreational Dungeness crab fishery; if FGC wishes to discuss further, consider referring to MRC for review and recommendation.

Exhibits

1. DFW News: *Entanglement Settlement Protects Whales, Sea Turtles and California's Crab Fishery*, dated Mar 26, 2019
2. Center for Biological Diversity v. Bonham (Defendant), and Pacific Coast Federation of Fishermen's Associations and Institute for Fisheries Resources (Intervenor-Defendants), stipulation and [proposed] order staying case, filed Mar 26, 2019
3. Dungeness Crab Fishing Gear Working Group statement, dated Mar 29, 2019
4. California Dungeness Crab Fishing Gear Working Group Evaluation Team advisory, dated Mar 19, 2019

Motion/Direction (N/A)

STAFF SUMMARY FOR APRIL 17, 2019

26A. ADMINISTRATIVE ITEMS – NEXT MEETINGS

Today's Item **Information ☐** **Action ☒**

This is a standing agenda item to review logistics and approve draft agenda items for the next FGC meetings.

Summary of Previous/Future Actions (N/A)

Background

The next FGC meetings have been scheduled for:

- May 16, 2019 by teleconference in Arcata, Fairfield, Sacramento, and San Diego; and
- June 12-13, 2019 in Redding.

The May 16, 2019 meeting will be held via teleconference. Staff does not anticipate any other special logistics for these meetings.

Potential agenda items for the May 16 and June 12-13 meetings are provided in Exhibit 1 for consideration and potential approval.

Significant Public Comments (N/A)

Recommendation

FGC staff: Approve draft agenda topics for the May 16, 2019 and June 12-13, 2019 FGC meetings.

Exhibits

1. Potential agenda items for the May 16, 2019 and Jun 12-13, 2019 FGC meetings

Motion/Direction

Moved by _____ and seconded by _____ that the Commission approves the draft agenda items for the May 16, 2019 and June 12-13, 2019 Commission meetings, as amended today.

STAFF SUMMARY FOR APR 17, 2019

26B. ADMINISTRATIVE ITEMS – RULEMAKING TIMETABLE

Today's Item **Information ☐** **Action ☒**

Review and consider approving requested changes to the perpetual timetable for anticipated regulatory actions.

Summary of Previous/Future Actions

- FGC approved changes to rulemaking timetable — Feb 6, 2019; Sacramento
- **Today consider approving proposed changes to the rulemaking timetable** — **Apr 17, 2019; Santa Monica**

Background

FGC maintains a perpetual timetable for anticipated regulatory actions. At each FGC meeting, staff provides the latest approved timetable along with requests for changes from FGC staff and/or DFW (Exhibit 1), highlighted in bolded and underlined blue text (Exhibit 2).

FGC staff has identified several proposed changes:

- Modify the effective date for coast yellow leptosiphon, Lassics lupine, and recreational take of red abalone, which were approved earlier than originally anticipated by the Office of Administrative Law.
- Modify the effective date for sheephead fillet. In order to have the adopted sheephead fillet regulation included in the sport fishing regulations supplement booklet, and thus help alleviate public confusion and potential law enforcement impacts, FGC staff requested expedited review from the Office of Administrative Law (OAL). The regulation was approved by OAL on Mar 28, 2019, with an effective date of Apr 1, 2019.
- Modify the effective date for commercial logbooks, which do not meet the exemption standards for a required quarterly effective date at least 30 days from the OAL approval date to the Jan 1, Apr 1, Jul 1 or Oct 1 filing with the Secretary of State.
- Modify the name of the rulemaking currently titled "Hagfish traps permitted on single vessel" to "Hagfish traps", to simplify and be consistent with the draft initial statement of reasons and associated rulemaking documents. It is also noted that this file requires a quarterly effective date, and that DFW is requesting the regulation be made effective on Oct 1, 2019.
- Modify the adoption date for the mammal hunting rulemaking. To allow for a full 45-day California Environmental Quality Act review by the counties, staff has proposed moving the adoption hearing to FGC's May 16, 2019 teleconference (see Agenda Item 15).

DFW makes two requests:

- Modify the name of the rulemaking currently titled "Statewide Sport Fishing Revisions and Simplification for 2020" to improve clarity on the scope of the rulemaking. The new requested title is "Simplification of Statewide Inland Fishing Regulations". In addition, the amended Title 14 sections have been determined to be 5.00, 7.00, 7.50 and 8.10.

- Add a rulemaking to add a new Title 14 chapter, article or section and to amend sections 120.1(c)2 and 180(g), to establish an experimental fishing permit (EFP) program, as authorized by new Fish and Game Code Section 1022, which states that FGC shall establish by regulation an expeditious process for DFW review, public notice and comment, FGC approval, and prompt DFW issuance of EFPs. Requests for new EFPs cannot be accommodated until the regulations are adopted by FGC and approved by OAL. At this meeting, DFW will propose a schedule for the new rulemaking.

Significant Public Comments (N/A)

Recommendation

FGC staff: Adopt the proposed changes to the timetable for anticipated regulatory actions and provide direction on the scheduling of any rulemaking changes identified during the meeting.

Exhibits

1. DFW memo, received Apr 4, 2019
2. Proposed timetable for anticipated regulatory actions, dated Apr 5, 2019

Motion/Direction

Moved by _____ and seconded by _____ that the Commission approves the proposed changes to the rulemaking timetable.

STAFF SUMMARY FOR APRIL 17, 2019

26C. ADMINISTRATIVE ITEMS – NEW BUSINESS

Today's Item **Information** ☒ **Action** ☐

This is a standing agenda item to allow Commissioners to bring new items of business to FGC.

Summary of Previous/Future Actions (N/A)

Background (N/A)

Significant Public Comments (N/A)

Recommendation (N/A)

Exhibits (N/A)

Motion/Direction (N/A)

STAFF SUMMARY FOR APR 17, 2019

EXECUTIVE SESSION

Today's Item **Information ☐** **Action ☒**

Executive session will include four standing topics:

(A) Pending litigation to which FGC is a party
(B) Possible litigation involving FGC
(C) Staffing
(D) Deliberation and action on license and permit items

Summary of Previous/Future Actions (N/A)

Background

During the public portion of its meeting, FGC will call a recess and reconvene in a closed session pursuant to the authority of Government Code subsections 11126(a)(1), (c)(3), and (e)(1), and Section 309 of the Fish and Game Code. FGC will address the following items in closed session:

(A) Pending litigation to which FGC is a party

See agenda for a complete list of pending civil litigation to which FGC is a party.

(B) Possible litigation involving FGC

None to report at the time the meeting binder was prepared.

(C) Staffing

FGC's executive director continues to serve as DFW's chief deputy director through an out-of-class assignment. FGC's deputy executive director has been fulfilling the role of acting executive director, consistent with the deputy executive director's duty statement, in an out-of-class assignment; effective December 17, 2018, her acting assignment must be extended and approved every 60 days by the California Department of Human Resources (CalHR) for a total assignment time of no more than one year. Effective February 11, 2019, the deputy executive director duties are being fulfilled by FGC's marine advisor through an out-of-class assignment. To ensure full support for FGC's Marine Resources Committee, a DFW environmental scientist is on loan to FGC through an out-of-class assignment as FGC's marine advisor, effective February 18, 2019. The deputy executive director and marine advisor assignments must be extended every 90 days for up to one year; these assignments will require CalHR approval for extension.

(D) Deliberation and action on license and permit items

I. Consider Agency Case No. 17ALJ18-FGC, the appeal filed by James Smith regarding the suspension of his guide license. Mr. Smith is requesting a hearing before FGC regarding the suspension of his guide license (Exhibit D1). However, after Mr. Smith filed an appeal, DFW provided documentation regarding the impropriety of the appeal (Exhibit D2). Mr. Smith's guide license was suspended by

the Superior Court of Napa County on January 2, 2018, for a period of three years, and not by any licensing action taken by FGC or DFW (Exhibits D3 and D4). FGC does not have authority to overturn the court's action.

II. Consider Agency Case No. 18ALJ02-FGC, the appeal filed by Charles J. Williams regarding a request to renew a transferable Dungeness crab vessel permit and a salmon vessel permit. Mr. Williams is appealing a DFW denial of his renewal request (Exhibit D5); DFW denied the request because the request was beyond the statutory timeframe allowing renewal by DFW (Exhibit D6). DFW has formally stated it does not object to the renewal of Mr. Williams' permits (Exhibit D7).

III. Consider Agency Case No. 18ALJ05-FGC, the appeal filed by James Verboon regarding a request to renew a salmon vessel permit. Mr. Verboon is appealing a DFW denial of a renewal request (Exhibit D8). DFW has formally stated it does not object to the renewal of Mr. Verboon's permit (Exhibit D9).

IV. Consider Agency Case No. 18ALJ07-FGC, the appeal filed by John Fraser regarding a request to renew a nontransferable Dungeness crab vessel permit. Mr. Fraser is appealing a DFW denial of a renewal request (Exhibit D10); DFW denied the request because the request was beyond the statutory timeframe allowing renewal by DFW (Exhibit D11). DFW has formally stated it does not object to the renewal of Mr. Fraser's permit (Exhibit D12).

V. Consider Agency Case No. 18ALJ11-FGC, the appeal filed by Louis Ferrari regarding the transferability of a nearshore fisheries permit. Mr. Ferrari is appealing a DFW letter to Mr. Ferrari where it declines to revisit a 2003 decision. In so doing, Mr. Ferrari is attempting to appeal a DFW decision regarding initial issuance of his non-transferable north-central coast region nearshore fisheries permit (Exhibits D13 and D14), a decision for which the right to appeal lapsed in 2004. However, Mr. Ferrari has requested FGC delay taking action to allow him to speak at a future meeting (Exhibit D15).

VI. Consider Agency Case No. 18ALJ15-FGC, the appeal filed by Peter Aliotti regarding a request to renew a salmon vessel permit. Mr. Aliotti is appealing a DFW denial of his renewal request (Exhibit D16); DFW denied the request because the request was beyond the statutory timeframe allowing renewal by DFW (Exhibit D17). DFW has formally stated it does not object to the renewal of Mr. Aliotti's permit (Exhibit D18).

VII. Consider Agency Case No. 18ALJ16-FGC, the appeal filed by Steve T. Escobar regarding a request to renew a south coast region nearshore fishery gear endorsement. Mr. Escobar is appealing a DFW denial of his renewal request (Exhibit D19); DFW denied the request because the request was beyond the statutory timeframe allowing renewal by DFW (Exhibit D20). DFW has formally stated it does not object to the renewal of Mr. Escobar's permit (Exhibit D21).

VIII. Consider Agency Case No. 18ALJ21-FGC, the Accusation filed against Shan Xiang Xue regarding a 20-year suspension of sport fishing privileges (Exhibit D22). DFW filed an accusation against Mr. Xue and Mr. Xue did not file a notice of

defense by the deadline of February 10, 2019 (15 days after being served) nor since; Mr. Xue has thereby waived any right to a hearing (Exhibit D23).

Recommendation

(D) ***FGC staff:*** Grant the appeals filed by Charles J. Williams, James Verboon, John A. Fraser, Peter Aliotti and Steve T. Escobar, acknowledging that in each of those appeals the appeal does not impact fees owed under the statutory structure. Reject the appeal filed by James Smith as beyond FGC authority. Suspend the sport fishing privileges of Shan Xiang Xue for a 20-year period. Delay taking any action on the appeal filed by Louis J. Ferrari until the Jun 2019 meeting in Redding, as requested by Mr. Ferrari.

Exhibits

D1. Email from James Smith to FGC, received Dec 9, 2017
D2. Email from DFW to FGC and James Smith, received Jan 10, 2019
D3. Napa Superior Court Plea Form for James Smith, filed Jan 2, 2018
D4. Amended Minute Order for James Smith from the Superior Court of California, County of Napa, dated Jan 2, 2018
D5. Letter from George Mavris to FGC regarding the Charles J. Williams appeal, received Mar 19, 2018
D6. Letter from DFW to George Mavris regarding Williams denial, dated Jan 24, 2018
D7. Letter from DFW to FGC regarding the Charles J. Williams appeal, dated Mar 21, 2019
D8. Letter from James Verboon to FGC, received Jun 29, 2018
D9. Letter from DFW to FGC regarding the James Verboon appeal, dated Mar 21, 2019
D10. Letter from Mathews, Kluck, Walsh & Wykle to FGC regarding the John A. Fraser appeal, dated Jul 3, 2018
D11. Letter from DFW to Mathews, Kluck, Walsh & Wykle regarding the John A.Fraser appeal, received Jun 21, 2018
D12. Letter from DFW to FGC regarding the John A. Fraser appeal, dated Mar 21, 2019
D13. Letter from DFW to Louis J. Ferrari, received Jun 30, 2017
D14. Letter from Louis J. Ferrari to FGC, received Jan 18, 2018
D15. Email from Louis J. Ferrari to FGC, received Apr 5, 2019
D16. Letter from Peter Aliotti to FGC regarding his appeal, received Jun 1, 2018
D17. Letter from DFW to Peter Aliotti, dated May 1, 2018
D18. Letter from DFW to FGC regarding the Peter Aliotti appeal, dated Mar 21, 2019
D19. Email from Steve T. Escobar to FGC, received Oct 3, 2018
D20. Letter from DFW to Steve T. Escobar, dated Aug 9, 2018

D21. Letter from DFW to FGC regarding the Steve T. Escobar appeal, dated Mar 21, 2019

D22. Accusation from DFW, In the Matter of the Accusation Against Shan Xiang Xue, dated Sep 18, 2018

D23. Letter from DFW to FGC regarding the Shan Xiang Xue accusation, dated Mar 21, 2019

Motion/Direction

(D) Moved by _____ and seconded by _____ that the Commission grants the appeals filed by Charles J. Williams, James Verboon, John A. Fraser, Peter Aliotti, and Steve T. Escobar.

AND

Moved by _____ and seconded by _____ that the Commission rejects the appeals filed by James Smith.

AND

Moved by _____ and seconded by _____ that the Commission suspends the sport fishing privileges of Shan Xiang Xue for a 20-year period.

CALIFORNIA FISH AND GAME COMMISSION PETITIONS
RECEIPT LIST FOR PETITIONS FOR REGULATION CHANGE: RECEIVED BY 5:00 PM ON APRIL 4, 2019
Revised 4/12/2019

General Petition Information					FGC Action	
Tracking No.	**Date Received**	**Name of Petitioner**	**Subject of Request**	**Short Description**	**FGC Receipt Scheduled**	**FGC Action Scheduled**
2019-004	2/4/2019	Mike Conroy	Abandoned Lobster Traps	Revise existing regulation authorizing retrieval of abandoned traps in subsection 122.2(h)(1) to add: "No lobster trap will be deemed abandoned during the period when lobster traps can legally be deployed as described in subsection (a)."	4/17/19	6/12-13/2019
2019-006 AM 1	3/20/2019	Jesse Harris	Use of Bait for Taking Bear	Allow bait as a method of take for bear.	4/17/19	6/12-13/2019
2019-008 AM 2	4/8/2019	Patricia McPherson	Firing Range at Ballona Wetlands Ecological Reserve (BWER)	Change regulations for the parking lot lease at BWER for the Sheriff's Department to disallow its firing range onsite.	4/17/19	6/12-13/2019
2019-009	3/26/2019	Herb Burton	Trinity River Salmon Fishing Regs	Revise open season: January 1 through September 15 with "no fishing from boat" restriction, limited to shore and wade fishing only.	4/17/19	6/12-13/2019

CALIFORNIA FISH AND GAME COMMISSION
RECEIPT LIST FOR NON-REGULATORY ACTION: RECEIVED BY 5:00 PM ON APRIL 4, 2019
Revised 4-12-19

FGC - California Fish and Game Commission **DFW** - California Department of Fish and Wildlife **WRC** - Wildlife Resources Committee **MRC** - Marine Resources Committee

Date Received	Name of Reequester	Subject of Request	Short Description	FGC Decision
2/8/2019	Fred Boniello	Sport fishing regulations for the Gualala River, Salmon Creek, and Walker Creek	Requests for amendments to the sport fishing regulations for the Gualala River, Salmon Creek, and Walker Creek.	**Receipt: 4/17/2019** No action necessary. Staff has notified requester that a petition for regulation change form is required.
2/20/2019	George Osborn, on behalf of Marko Mlikotin, California Sportfishing League	Price of fishing licenses	Request for information on the analyses relied upon and the methodology by which sport fishing license fees are determined by FGC and DFW.	**Receipt: 4/17/2019** **Action scheduled: 6/12-13/2019**
4/2/2019	Dennis Fox	Steel projectiles and muzzleloader seasons or areas	Request for a total ban on steel projectiles county wide, and the designation of primitive sidelock muzzleloader seasons or areas.	**Receipt: 4/17/2019** No action necessary. Staff has notified requester that a petition for regulation change form is required.

Tracking Number: (2019-004)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, 1416 Ninth Street, Suite 1320, Sacramento, CA 95814 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)
Name of primary contact person: Mike Conroy
Address:
Telephone number:
Email address:

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: FGC 1050, 8254(a)

3. Overview (Required) - Summarize the proposed changes to regulations: Add: "No lobster trap will be deemed abandoned during the period when lobster traps can legally be deployed as described in subsection (a)."

4. Rationale (Required) - Describe the problem and the reason for the proposed change: In certain locations, some permitted commercial lobster fishermen are having their traps, line and buoys (collectively "the gear") stolen by other permitted commercial lobster fisherman. Purportedly, the individual suspected of stealing the gear is claiming he is allowed to have the gear by claiming they are "derelict lobster traps" under current regulations. Because he is declaring them abandoned, the rightful owner of the gear is subject to arrest for theft if they take any actions to recover the stolen gear. The effect of this is that law abiding commercial fishermen whose gear is being stolen are disadvantaged as follows: (A) They are fishing less gear which results in lost opportunity; (B) They have to replace the gear at considerable expense; (C) They are unable to get replacement trap tags because they have not cumulatively lost at least 75 trap tags. Note – at the December 2018 FGC meeting we will be asking the MRC to schedule a discussion at its March 2019 meeting on the issue of replacement of loss tags

SECTION II: Optional Information

5. Date of Petition: November 29

6. Category of Proposed Change

☐ Sport Fishing
☒ Commercial Fishing
☐ Hunting
☐ Other, please specify:

7. The proposal is to: (*To determine section number(s), see current year regulation booklet or https://govt.westlaw.com/calregs*)

☒ Amend Title 14 Section(s):122.2(h)(1)
☐ Add New Title 14 Section(s):
☐ Repeal Title 14 Section(s):

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition

Or ☐ Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency: Prior to opening of 2019 commercial lobster season

10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents: Unavailable at this time due to an ongoing LED investigation

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: Should be a positive economic impact to law abiding permitted commercial lobster fishermen

12. Forms: If applicable, list any forms to be created, amended or repealed:

SECTION 3: FGC Staff Only

Date received: Received by email on Monday, February 4, 2019 at 7:51 AM.

FGC staff action:

☑ Accept - complete
☐ Reject - incomplete
☐ Reject - outside scope of FGC authority

Tracking Number 2019-004

Date petitioner was notified of receipt of petition and pending action: April 17, 2019

Meeting date for FGC consideration: June 12-13, 2019

FGC action:

☐ Denied by FGC

☐ Denied - same as petition _____
Tracking Number

☐ Granted for consideration of regulation change

Tracking Number: (2019-006 AM 1)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, 1416 Ninth Street, Suite 1320, Sacramento, CA 95814 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)
Name of primary contact person: Jesse Harris
Address:
Telephone number:
Email address:

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: California Department of Wildlife Title 14: 365(e)

3. Overview (Required) - Summarize the proposed changes to regulations: Current law states that hunting bear over bait is illegal. I propose that we lift the ban on bait and allow bait as a method of take for bear.

4. Rationale (Required) - Describe the problem and the reason for the proposed change: Since the banning of hounds for bear hunting there has not been a full bear quota taken. This is causing an increase in bear population and increasing bear/ human interaction. Legislation has taken a very valuable management tool from us by banning hounds for bear hunting. It is up to us to come up with new ways to manage our wildlife. By allowing baiting, a hunter can set up a determined location where they can plan their shooting distance. This will help create more humane kill shots due to the hunter not simply spotting a bear and taking a shot. The hunter can set their distance to where when a bear comes into bait, the hunter knows exactly how far their shot is, and can wait until the bear is in a position where a humane kill can be made. By using bait, it also allows a hunter to take the time to see if a bear is a sow with cubs. The hunter can also choose to pass on a smaller bear. By using bait, the hunter can be selective in which bear he takes. This is not always possible in spot and stalk situations, where you may see a bear, but not see its cubs just over the ridge, or in the brush. Baiting is a humane and effective management tool that can be used to manage bear populations statewide. Again, while the Commission cannot override State legislation, it is up to the Commission, and us as hunters to come up with other solutions.

SECTION II: Optional Information

5. Date of Petition: 03/07/2019

6. Category of Proposed Change

☐ Sport Fishing
☐ Commercial Fishing
☒ Hunting
☐ Other, please specify:

7. The proposal is to: (*To determine section number(s), see current year regulation booklet or https://govt.westlaw.com/calregs*)

☐ Amend Title 14 Section(s):
☐ Add New Title 14 Section(s):
☒ Repeal Title 14 Section(s): 365(e)

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition

Or ☒ Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency: June 31st, 2019

10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents:

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: Potential of increased bear tag sales

12. Forms: If applicable, list any forms to be created, amended or repealed:

SECTION 3: FGC Staff Only

Date received: Received by email on Friday, March 8, 2019 at 7:39 AM.

FGC staff action:

☑ Accept - complete
☐ Reject - incomplete
☐ Reject - outside scope of FGC authority

Tracking Number 2019-006

Date petitioner was notified of receipt of petition and pending action: April 17, 2019

Meeting date for FGC consideration: June 12-13, 2019

FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition _____
  Tracking Number
- ☐ Granted for consideration of regulation change

Kinchak, Sergey@FGC

From: Cornman, Ari@FGC
Sent: Friday, April 5, 2019 11:19 AM
To: Castleton, Craig@FGC; Kinchak, Sergey@FGC
Subject: FW: Updates to 3 proposed rule changes for the Commission

---

From: Cornman, Ari@FGC
Sent: Thursday, March 21, 2019 7:58 AM
To: Harold(David) Thesell (Harold.Thesell@FGC.ca.gov) <Harold.Thesell@FGC.ca.gov>
Cc: Castleton, Craig@FGC <Craig.Castleton@FGC.ca.gov>
Subject: FW: Updates to 3 proposed rule changes for the Commission

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From: FGC
Sent: Thursday, March 21, 2019 6:20 AM
To: Kinchak, Sergey@FGC <Sergey.Kinchak@FGC.ca.gov>; Cornman, Ari@FGC <Ari.Cornman@FGC.ca.gov>
Subject: Fw: Updates to 3 proposed rule changes for the Commission

Forwarding an update to three pending petitions.

Jon

From: Jess Harris
Sent: Wednesday, March 20, 2019 05:57 PM
To: FGC
Subject: Updates to 3 proposed rule changes for the Commission

I would like to update my proposals.

For the proposal to add fox to the electric calls list, I need to update the authority. Here is the cited authority: Note: Authority cited: Sections 200, 202, 203, 355, 3003.1, 3800 and 4150, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 355, 356, 2055, 3003.1, 3004.5, 3800 and 4150, Fish and Game Code.

For the bear baiting proposal, here is the cited authority: Note: Authority cited: Sections 86, 200, 202 and 203, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1 and 207, Fish and Game Code

I would also like to withdraw my proposal for night hunting lights.

I also would like to waive my 10 day period to receive a letter regarding my proposals.

Thank you very much for your time,
Jesse Harris

Tracking Number: (2019-008 AM 2)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, 1416 Ninth Street, Suite 1320, Sacramento, CA 95814 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. **Person or organization requesting the change (Required)**
   Name of primary contact person: Grassroots Coalition, Patricia McPherson
   Address:
   Telephone number:
   Email address:

2. **Rulemaking Authority (Required) -** Reference to the statutory or constitutional authority of the Commission to take the action requested: AmendTitle 14 , Section(s): 630.
   Sections 1765 and 10504, Fish and Game Code.

3. **Overview (Required) -** Summarize the proposed changes to regulations: Los Angeles County Parking Lot exemption at Ballona Wetlands Ecological Reserve (BWER) in Los Angeles. The parking lot lease for the Sheriff's Department , located within BWER needs to be rejected and/or changed to disallow its FIRING RANGE onsite. Recent events demonstrate the facility to be hazardous to both the wildlife, private users of the parking lot and their vehicles, and the public.

4. **Rationale (Required) -** Describe the problem and the reason for the proposed change: On March 9, 2019, an out of control fire swept through the facility. Video documentation demonstrates fire spewing out through an opened doorway while shots of multiple rounds of ammunition explode into the facility and throughout the area outside of the facility. There is no immediate horizon for release of the DEIR for BWER. The DEIR may not be released for years to come due to numerous corrections that need to be made both at the state level and in particular, federal level that is ongoing. If the DEIR is released in its current form, it will be legally challenged due to its failure to include a restoration of its nature as a predominantly freshwater, seasonal wetland. Therefore, Staff recommendation of 4/27/17, 'not recommending making any land use changes until after the environmental impact report is complete' is unreasonable and potentially hazardous to the health and well- being of the environment, the wildlife, the public and private persons.

SECTION II: Optional Information

5. Date of Petition: Petition – 3/10/19

6. Category of Proposed Change
☐ Sport Fishing
☐ Commercial Fishing
☐ Hunting
☒ Other, please specify: LA County Parking Exemption within Ballona Wetlands Ecological Reserve.

7. The proposal is to: (*To determine section number(s), see current year regulation booklet or https://govt.westlaw.com/calregs*)
☒ Amend Title 14 Section(s):630(h)(3), T14
☐ Add New Title 14 Section(s):
☐ Repeal Title 14 Section(s):

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition Same parking lot , different Petition, 2017-003.
Or ☐ Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency: Requires immediate attention as the portable (destroyed) FIRING RANGE facility may be taken out and simply replaced with another portable FIRING RANGE thereby creating another hazardous situation..

10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents: VIDEO DOCUMENTATION OF THE INCIDENT on 3/9/19, documented by Rick Pine.

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: no known impacts

12. Forms: If applicable, list any forms to be created, amended or repealed:

None known applicable

SECTION 3: FGC Staff Only

Date received: Received by email on Monday, March 11, 2019 at 7:27 AM.

FGC staff action:
☑ Accept - complete
☐ Reject - incomplete
☐ Reject - outside scope of FGC authority

Tracking Number 2018-008

Date petitioner was notified of receipt of petition and pending action: April 17, 2019

Meeting date for FGC consideration: June 12-13, 2019

FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition _____
  Tracking Number
- ☐ Granted for consideration of regulation change

Cornman, Ari@FGC

From: FGC
Sent: Thursday, March 28, 2019 2:23 PM
To: Cornman, Ari@FGC
Cc: Kinchak, Sergey@FGC
Subject: Fw: AMENDMENT TO --FCG Petition BY GRASSROOTS COALITION sent 3/10/19 Ballona Wetlands Ecological Reserve-LA COUNTY PARKING LOT HAZARDOUS CONDITIONS
Attachments: FGC1.pdf; IMG_3762.MOV

From: patricia mc pherson
Sent: Thursday, March 28, 2019 11:04 AM
To: FGC
Subject: AMENDMENT TO --FCG Petition BY GRASSROOTS COALITION sent 3/10/19 Ballona Wetlands Ecological Reserve-LA COUNTY PARKING LOT HAZARDOUS CONDITIONS

Attention to FGC-

Grassroots Coalition wishes to amend its Petition of March 10, 2019—below, to include all aspects of Title 14, Section 630 that may be applicable to the current Petition of Grassroots Coalition.
The following link provides Title 14, Section 630, to which the Petition utilizes any and all portions of Section 630 for the Petition. The link provides Title 14, Section 630 of an Ecological Reserve including Ballona Wetlands Ecological Reserve.

Grassroots Coalition also wishes to waive any 10 response period per this amendment to its current Petition.

LINK for Title 14, Section 630-

https://govt.westlaw.com/calregs/Document/IFBA6186B2BAF46948C0E12549289136F?originationContext=Search+Result&listSource=Search&viewType=FullText&navigationPath=Search%2fv3%2fsearch%2fresults%2fnavigation%2fi0ad720f200000169c53d53c28a24496f%3fstartIndex%3d1%26Nav%3dREGULATION_PUBLICVIEW%26contextData%3d(sc.Default)&rank=1&list=REGULATION_PUBLICVIEW&transitionType=SearchItem&contextData=(sc.Search)&t_T1=14&t_T2=630&t_S1=CA+ADC+s

Thank you for your attention to these matters and
please let GC know if there is any need for further clarification.

Patricia McPherson, Grassroots Coalition

Begin forwarded message:

From: patricia mc pherson
Subject: FCG Petition BY GRASSROOTS COALITION sent 3/10/19 Ballona Wetlands Ecological Reserve-LA COUNTY PARKING LOT HAZARDOUS CONDITIONS
Date: March 10, 2019 at 11:35:43 AM PDT
To: FGC <fgc@fgc.ca.gov>
Cc: Jeanette Vosburg <saveballona@hotmail.com>, Walter Lamb <landtrust@ballona.org>, Rick P >, "Todd T. Cardiff, Esq." <todd@tcardifflaw.com>

GRASSROOTS COALITION
ENVIRONMENTAL INTEGRITY & PUBLIC POLICY

Hello California Fish & Game Commission,

Please accept and review the Petition below as soon as possible,
Thank you,
Patricia McPherson, Grassroots Coalition

ATTACHMENTS:

Additional Comments:

Unexplained Reasons and Missing Information-

For, allowing a Sheriff's Department's Portable FIRING RANGE within Ballona Wetlands Ecological Reserve; in an area currently allowed by FGC for parking by persons affiliated with private businesses at Fisherman's Village (Fisherman's Village already has ample parking and is underused with numerous, daily vacant areas of the Fisherman's Village lot.)

The public, the Reserve, wildlife and the persons and vehicles using the current parking lot of BWER are at risk from potentially hazardous conditions arising again as occurred with the fire and subsequent bullet explosions and releases that occurred on 3/9/19.

There is already ample parking for Sheriff's Department Personnel's vehicular parking needs within the Fisherman's Village parking lot.

Outline the purposes of Proposition 50 and Proposition 12 bond funds used to acquire the Ballona Wetlands for approximately $140 million, and explain how the FIRING RANGE and Sheriff's Dept. personnel parking serves those goals.

Elaborate on CDFW Director claims that parking is a current problem at the ecological reserve, given that the reserve is closed to the public, and that there is ample parking at various parking lots adjacent to BWER and ride share/ transport available throughout the Marina del Rey.

Action Requested-

-Immediately eliminate private, non-reserve related parking on the state-owned ecological reserve including the FIRING RANGE operated by the Sheriff's Department.

-Calendar a near-by and ASAP substantive discussion and vote on the use of the BWER lot by the Sheriff's Department and other County personnel and private parties (non -public) needs and risks at the lot. Additionally, provide for a substantive discussion regarding the environmental, wildlife and public risks.

The Firing Range Trailer(s) is located in the BALLONA WETLANDS ECOLOGICAL RESERVE (parking lot shown in top picture below. Fisherman's Village parking lot is shown below the BWER lot)

Ample parking in county lot

Lot is NOT for public access to coast

Screen shot only below. See video at top of Petition.

Rick

patricia mc pherson

Cornman, Ari@FGC

From: FGC
Sent: Tuesday, April 9, 2019 8:45 AM
To: Cornman, Ari@FGC
Subject: Fw: AMENDMENT TO --FCG Petition BY GRASSROOTS COALITION sent 3/10/19 Ballona Wetlands Ecological Reserve-LA COUNTY PARKING LOT HAZARDOUS CONDITIONS

From: patricia mc pherson
Sent: Monday, April 8, 2019 06:10 PM
To: FGC
Subject: Re: AMENDMENT TO --FCG Petition BY GRASSROOTS COALITION sent 3/10/19 Ballona Wetlands Ecological Reserve-LA COUNTY PARKING LOT HAZARDOUS CONDITIONS

Attention to FGC per Grassroots (GC) Petition of March 10, 2019

For clarification purposes please AMEND the Petition request to read that GC requesting REGULATION CHANGES to the parking lot lease agreement.
GC continues to utilize any/all portion of Title 14, Section 630 applicability for the Petition to be heard, including but not limited to Section 30 (h)(3).

Thank you for your attention to this matter and please let GC know if any further clarification(s) is needed to address the Firing Range issue of use.

Patricia McPherson, Grassroots Coalition

On Mar 28, 2019, at 11:04 AM, patricia mc pherson wrote:

Attention to FGC-

Grassroots Coalition wishes to amend its Petition of March 10, 2019—below, to include all aspects of Title 14, Section 630 that may be applicable to the current Petition of Grassroots Coalition.
The following link provides Title 14, Section 630, to which the Petition utilizes any and all portions of Section 630 for the Petition. The link provides Title 14, Section 630 of an Ecological Reserve including Ballona Wetlands Ecological Reserve.

Grassroots Coalition also wishes to waive any 10 response period per this amendment to its current Petition.

LINK for Title 14, Section 630-

https://govt.westlaw.com/calregs/Document/IFBA6186B2BAF46948C0E12549289136F?originationContext=Search+Result&listSource=Search&viewType=FullText&navigationPath=Search%2fv3%2fsearch%2fresults%2fnavigation%2fi0ad720f200000169c53d53c28a24496f%3fstartIndex%3d1%26Nav%3dREGULATION_PUBLICVIEW%26contextData%3d(sc.Default)&rank=1&list=REGULATION_PUBLICVIEW&transitionType=SearchItem&contextData=(sc.Search)&t_T1=14&t_T2=630&t_S1=CA+ADC+s

Thank you for your attention to these matters and
please let GC know if there is any need for further clarification.

Patricia McPherson, Grassroots Coalition

Begin forwarded message:

From: patricia mc pherson
Subject: FCG Petition BY GRASSROOTS COALITION sent 3/10/19 Ballona Wetlands Ecological Reserve-LA COUNTY PARKING LOT HAZARDOUS CONDITIONS
Date: March 10, 2019 at 11:35:43 AM PDT
To: FGC <fgc@fgc.ca.gov>
Cc: Jeanette Vosburg <saveballona@hotmail.com>, Walter Lamb <landtrust@ballona.org>, Rick P , "Todd T. Cardiff, Esq." <todd@tcardifflaw.com>

<Screen Shot 2017-04-22 at 8.55.19 AM.png>

Hello California Fish & Game Commission,

Please accept and review the Petition below as soon as possible,
Thank you,
Patricia McPherson, Grassroots Coalition

<FGC1.pdf>

ATTACHMENTS:

<IMG_3762.MOV>

Additional Comments:

<Screen Shot 2019-03-10 at 10.51.25 AM.png>

The Firing Range Trailer(s) is located in the BALLONA WETLANDS ECOLOGICAL RESERVE (parking lot shown in top picture below. Fisherman's Village parking lot is shown below the BWER lot)

<Screen Shot 2019-03-10 at 10.22.07 AM.png>
<Screen Shot 2019-03-10 at 11.27.41 AM.png>
<Screen Shot 2019-03-10 at 11.28.44 AM.png>
<Screen Shot 2019-03-10 at 11.29.39 AM.png>

Screen shot only below. See video at top of Petition.

<Screen Shot 2019-03-10 at 8.09.25 AM.png>

patricia mc pherson

patricia mc pherson

March 25, 2019

Attention: California Fish and Game Commission
1416 Ninth Street Suite 1320
Sacramento, CA 95814

Attached, enclosed is a petition (and attachments A & B) agenda item for the upcoming April 17, 2019 CFGC meeting in Santa Monica. Should you have any further questions feel free to contact me at any time.

Respectfully;

Herb Burton

State of California – Fish and Game Commission
PETITION TO THE CALIFORNIA FISH AND GAME COMMISSION FOR REGULATION CHANGE
FGC 1 (NEW 10/23/14) Page 1 of 2

Tracking Number: (2019-009)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, 1416 Ninth Street, Suite 1320, Sacramento, CA 95814 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. **Person or organization requesting the change (Required)**
   Name of primary contact person: Herb Burton, Trinity County Board of Supervisors
   Address:
   Telephone number:
   Email address:

2. **Rulemaking Authority (Required)** - Reference to the statutory or constitutional authority of the Commission to take the action requested: REFERENCE: 200,205,265,270 AUTHORITY: 200,205,265,270.

3. **Overview (Required)** - Summarize the proposed changes to regulations: (State Special Regulation 14CCR 7.50 Trinity River mainstream 250ft. downstream of Lewiston Dam to Old Lewiston Bridge; Open Season April 1 through September 15). PROPOSAL: Revise Open Season: January 1 through September 15 with no fishing from a boat restriction, limited to shore and wade fishing only. Refer Attachment A.

4. **Rationale (Required)** - Describe the problem and the reason for the proposed change: Increase Trinity County fishing opportunities minimize impacts to spring Chinook salmon and promote off season (winter) tourism and economic opportunities that would benefit Trinity County's struggling economy. Refer Attachment A

SECTION II: Optional Information

5. **Date of Petition: March 25, 2019**

6. **Category of Proposed Change**
   ☒ Sport Fishing

☐ Commercial Fishing
☐ Hunting
☐ Other, please specify: Click here to enter text.

7. **The proposal is to:** (*To determine section number(s), see current year regulation booklet or https://govt.westlaw.com/calregs*)
☒ Amend Title 14 Section(s): Click here to enter text.
☐ Add New Title 14 Section(s): Click here to enter text.
☐ Repeal Title 14 Section(s): Click here to enter text.

8. **If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition** Click here to enter text.
Or ☒ Not applicable.

9. **Effective date**: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency: January 1, 2020

10. **Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents: Refer Attachments A & B

11. **Economic or Fiscal Impacts:** Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: Minimal-cost printing and posting updated CF&W regulation signage.

12. **Forms:** If applicable, list any forms to be created, amended or repealed:
Not applicable

SECTION 3: FGC Staff Only

Date received: Click here to enter text.

RECEIVED
CALIFORNIA
FISH AND GAME
COMMISSION
2019 MAR 26 PM 12: 3

FGC staff action:
☒ Accept - complete
☐ Reject - incomplete
☐ Reject - outside scope of FGC authority

Tracking Number 2019-009

Date petitioner was notified of receipt of petition and pending action: APRIL 17, 2019

Meeting date for FGC consideration: JUNE 12-13, 2019

FGC action:
☐ Denied by FGC
☐ Denied - same as petition _____
Tracking Number
☐ Granted for consideration of regulation change

Attachment A

M E M O R A N D U M

Date: March 25, 2019

TO: California Fish and Game Commission
1416 Ninth Street, Suite 1320
Sacramento, CA 95814

FROM: Herb Burton, Trinity County Board of Supervisors

SUBJECT: **Agenda item for State Fish and Game Commission meeting (April) Trinity River Sport Fishing Regulation revision.** State Special Regulation (14CCR 7.50) Trinity River mainstream from 250 ft. downstream of Lewiston Dam to Old Lewiston Bridge, Open Season-April 1 through September 15.

PROPOSAL: Revise open season: **January 1 through September 15** with **no fishing from a boat restriction, limited to shore and wade fishing only (250 ft. downstream of Lewiston Dam to Old Lewiston Bridge).** Extended season will provide additional three months fly fishing for winter trout and steelhead. No fishing from a boat restriction will help to minimize potential impacts to fish stocks and ensure quality angling experiences.

PURPOSE: ***increase Trinity County fishing opportunities**
***minimize impacts to spring chinook salmon**
***promote off season (winter) tourism and economic opportunity while having minimal biological impact.**

HISTORY: Since the completion of Trinity and Lewiston Dams (1964), over half a century the Trinity River, 250 ft. below Lewiston Dam downstream to the Old Lewiston Bridge, has been managed Fly Fishing only. These waters represent one of the *two* designated Fly Fishing only waters in California. The two mile reach is managed for Trinity River anadromous hatchery salmon and steelhead mitigation. Special season and regulations (gear restrictions, reduced daily bag limit, and greater angling majority exercise CATCH & RELEASE) help to protect and provide

anglers the opportunity to fly fish for trout and steelhead with minimal impacts to fish stocks and Lewiston hatchery operations. Hatchery Chinook and Coho spawning production is completed December. Hatchery steelhead spawning production ends March. Past several years Lewiston hatchery steelhead mitigation goals have been achieved. Historically, late 60's thru 80's the TR Fly Fishing only water open season was Memorial weekend through September 15...Since the 2000 TR Record of Decision open season was revised April 1 through September 15, providing additional angling opportunities, before restoration (high volume) flushing flows released. Neighboring Klamath River below Iron Gate Dam and hatchery is currently managed with a January 1 open season.

RECOMMENDATION: Sport fishing provides a major economic boost to Trinity County's economy. Unfortunately 2018- 2019 presented some major economic challenges. DFW is in the process of listing spring Chinook salmon threatened or endangered and has closed all spring Chinook salmon fishing in the Klamath and Trinity Rivers. The Carr fire impacted a number of major headwater and mainstream tributaries that are purging undesirable sediments loads. The proposal is even more important after the fires due to Deadwood Creek turbidity and that at times it could be the only opportunity on the mainstream Trinity River. The Trinity River Fly Fishing only water represents one of the oldest and most popular special managed fisheries in California. Endorsing (14CCR 7.50) proposed extended open season: **January 1 through September 15 and no fishing from a boat restriction, limited to shore and wade fishing only (250 ft. below Lewiston Dam down to the Old Single Lane Bridge)** would provide additional three months (winter) angling opportunities that would benefit Trinity County businesses and struggling economy while having minimal biological impact.

Attachment B

TRINITY COUNTY

Board of Supervisors

P.O. BOX 1613, WEAVERVILLE, CALIFORNIA 96093-1613
PHONE (530) 623-1217 FAX (530) 623-8365

March 19, 2019

California Fish and Game Commission
PO Box 944209
Sacramento, CA 94244-2090

To whom it concerns:

Re: Expanding open season to January 1 through September 15

The Trinity County Board of Supervisors is in full support of this proposed action. This action would expand the open season to January 1 through September 15, on the section of Trinity River that is 250 feet downstream of Lewiston Dam to the Old Lewiston Bridge. This action would keep the no fishing from boat restriction and limit angling to shore and wade fishing only. We feel this would benefit angling opportunities in the county which in turn would benefit off-season tourism and expand economic opportunity on the river. This reach is managed for hatchery salmon and steelhead thus there would be minimal biological impacts on the river.

Thank you for your consideration.

Sincerely,

Judy Morris, Chairman
Trinity County Board of Supervisors

February 5, 2019

Melissa Miller-Henson
Fish & Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Hello,

I am writing to you about the Sport Fishing Regulations for the Gualala River, Salmon Creek and Walker Creek. The current low flow regulation states there will be no fishing allowed until a flow of 150 c.f.s. is achieved and maintained throughout a 3 day period. The problems this regulation poses to sport fishermen are numerous.

The gauge measuring the flow is just below the confluence of the South and Wheatfield forks with 3 large tributaries and the North fork below the gauging station. The flow is two to three times higher that the required minimum flow to allow for sport fishing. " By far most sport fishing is done "below" the North fork" making sport fishing ridiculous. Yet the D.F.G. claims this to be the direction taken for the allowance of sport fishing. When water flows drop towards the 150 c.f.s. minimum flow requirement the three day window of opportunity comes into play making it hard and at times impossible for planned or unplanned trips for sport fishing on the Gualala River, Salmon and Walker Creeks during these somewhat favorable conditions for the sport angler. Stop this approach.

The D.F.G. claims responsibility for the protection and preservation of fish species in these waters. But has yet to address the allowance of bait in these waters.

These waters are inhabited by wild fish only. They are also catch and release only sport fisheries. The allowance of bait use on these waters must be stopped, in spite of claims by some and even the D.F.G. that this method of sport fishing is a time-honored tradition. If that were the case then anglers should be allowed to take fish in these waters because of time-honored tradition. That of course does not make sense.

I will address the reasons that are also echoed by most to stop the use of bait in these catch and release only waters. Bait users will at times take a fish for their bait content "roe or fish eggs" which is poaching in catch and release only waters, resulting in the senseless and illegal death of a sport fish. Some bait anglers will wait after an initial take of their bait is detected for the fish to swallow the bait so it can't come off, many times resulting in the death of a fish in catch and release only waters. Some of these practices are not illegal as is the case of the swallowed bait. To stop the use of bait by regulation in catch and release waters would stop any and all of this. I have, along with others, witnessed these practices over a 40 year period of fishing these waters. Bait is too damned effective on these wild fish streams.

On the Gualala River it is legal to fish from a floatation device from the North Fork downstream, from March 1st to the end of the season March 31st. This should not be allowed because it interferes with bank fisherman (mostly in waders), and is unfair to other anglers.

Before "Low Flow No Fishing" was implemented in the regulations the Gualala River, Salmon Creek and Walker Creek had a different type of low flow regulation. It was gauged off of the Russian. When the Russian River was flowing at 500 c.f.s. or more measured at Hacienda those streams were open to fishing on a weekly basis. This made it easier for anglers to fish these streams. They had a 7 day window of opportunity, without having the burden along with poor cell phone service to obtain information on opening and closures of these waters every three days and in many cases everyday. The D.F.G. has gone too far in it's regulatory practice toward sport anglers to implement this "insane anglers walk in the dark regarding opening and closures for sport fishing", more of D.F.G.'s human yo-yo ism.

Myself and others realize the need for low flow closures on these waters. There is a much easier way to accomplish this. It would be to reinstate the Russian River 500 c.f.s. trigger for opening of these waters. (This could be increased to 600 c.f.s.)

This flow increase would provide fish upstream and downstream travel with less angling impact. Myself and others realize that the Russian River takes longer to drop out and clear than other coastal streams. Anglers cannot sport fish the Russian River when it is high and muddy. At those conditions anglers were able to sport fish other coastal streams such as the Gualala River, Salmon Creek and Walker Creek (amongst other coastal waters) while water flows on the Russian River would drop to fishable conditions and prompt the closure of the other coastal streams mentioned.

Keep bait and bobbers out of these coastal streams. Return a 7 day uninterrupted regulatory policy for sport fishing on these streams. Revise low flow requirements by way of a lower gauge flow and or relocate the gauge to an area that makes sense, or go back to Russian River flows with an increase to trigger openings of these other coastal streams. In doing this anglers would also help keep an eye out for any illegal practices.

Myself and other anglers are aware of photos taken at different locations on the Gualala River by biologists and other D.F.G. affiliates showing many fish upstream on the main stem of the Gualala River during low clear water conditions. This "one year situation" was used by the D.F.G. to falsely assume their reasoning for current low flow, 3 day at a time sport fishing.

The D.F.G. needed to realize this one year situation was rare and not to implement regulations based on their photos for a short period for that one year. The D.F.G. also needs to realize that any boat, including drift boat fishing, is futile under lower water conditioning because of dragging or the inability of boats to complete the drift or "float" during daylight hours, leaving them in the dark. The float or drift takes all day in higher water conditions because of the distance between put in and take out locations.

Myself and others will contest to these situations having witnessed them over many years of angling and becoming familiar to the area.

Yes, I do expect a response from the D.F.G.

Fred Boniello

From: George Osborn <george@osbornstrategies.com>
Sent: Wednesday, February 20, 2019 7:05 PM
To: FGC
Subject: Attached letter
Attachments: 2-20-19 FishingLicPriceInflator.pdf

Please distribute the attached letter to President Sklar and the other commissioners.

Thank you and have a great evening!

--
George L. Osborn
1127 11th St., Suite 225
Sacramento, CA 95814
(916) 290-2789
george@osbornstrategies.com

February 19, 2019

Eric Sklar
President
Fish and Game Commission
1416 Ninth Street, Ste. 1320
Sacramento, CA 95814

Charleton Bonham
Director
California Department of Fish and Wildlife
1416 9th Street, 12 Floor
Sacramento, CA 95814

RE: State's methodology for determining price of fishing licenses

Dear President Sklar and Director Bonham:

As you well know, California's annual resident fishing license sales have decreased over 55% since 1980, while the state's population has increased over 60%. In 1980, just over 2.2 million fishing licenses were sold and today that figure has dropped to approximately 1 million.

As an organization committed to increasing fishing participation rates and outdoor economic activity, we are concerned about the high cost of fishing and how the State of California determines the price of fishing licenses, stamps, permits, tags and other entitlements.

A contributing factor to high costs is the State's statutory requirement to use the Implicit Price Deflator for State and Local Government's purchases of goods and services, as published by the U.S. Department of Commerce to set prices, which does not appear to consider current market conditions, or supply and demand in a highly competitive market for outdoor activity.

According to Southwick and Associates, a national market research firm that analyzes state fishing license structures, one the consequences of this method of determining price is that **since 1986 "the price of California's resident license has increased 216% which is 41% greater than the rate of inflation**."

Section 713 (g) of the Fish and Game Code requires the Fish and Game Commission and the Department of Fish and Wildlife to analyze "fishing licenses, stamps, permits, tags and other entitlements" to "ensure the appropriate fee amount is charged."

> *(g) The department and the commission, at least every five years, shall analyze all fees for licenses, stamps, permits, tags, and other entitlements issued by it to ensure the appropriate fee amount is charged.* ***Where appropriate, the department shall recommend to the Legislature or the commission that fees established by the commission or the Legislature be adjusted to ensure that those fees are appropriate.***

As an organization that regularly attends Commission hearings and works closely with the Department on increasing fishing participation, we do not recall seeing such an analysis as required by FGC § 713(g). So, would you please be so kind to provide us a copy of the two most recent analyses and any recommendation(s) by the Department, if any, to the Commission or the Legislature discussing whether license fees are set at an appropriate level. Given that the price of fishing licenses have increased five times over the past eight years by 11.18%, analysis such as that required by FGC §713(g) would inform the Legislature and stakeholders that the license fees are set at an appropriate level (or not, if that is the case).

To better understand how the state determines license fees, thank you for responding to the following questions:

1. Is the Implicit Price Deflator being applied properly?
2. Does the Implicit Price Deflator consider price elasticity of demand or in other words, does it evaluate the impact of higher prices on overall sales?
3. Do any other states use the Implicit Price Deflator to set license fees?
4. In today's market, is the Implicit Price Deflator an outdated method to determine license fees and if not, why not?
5. Will the Department and the Commission explore whether the Implicit Price Deflator should be replaced by a method that allows the Department to more effectively market sport fishing licenses?
6. So that the Commission can be more responsive to market forces, environmental circumstances, habitat issues, fishery stock assessments and conservation measures, should the California Fish and Game Commission be delegated authority to determine sport fishing license pricing as is done in several other states?

We would greatly appreciate a written response to these questions and ask that the Commission address this subject matter at its next public hearing. Thank you for your assistance.

Sincerely,

Marko Mlikotin
Executive Director

cc: Members, Assembly Committee on Water, Parks and Wildlife
Members, Senate Committee on Natural Resources and Water
Members, Senate Committee on Budget and Fiscal Review
Members, Assembly Committee on the Budget
Sen. Mike McGuire, Chair, Joint Fisheries and Aquaculture Committee

Board of Supervisors, County of Kern
1350 Truxton Ave
Bakersfield, CA 93301

Subject: Request for Fire Emergency proposals referral

Mister Chairman, Board Members and Staff

I have several times supported the Fire Emergency extension due to fire hazards from dead trees in the County. I have two proposals to somewhat mitigate the problem that has arisen from the State ban on lead bullets to take effect this year:

Some lead shot and shotgun slugs may be replaced by steel which if it strikes a rock starts a fire. This has already caused fires from use of cheap imported bimetal bullets. Steel is also non-expanding and does not facilitate a humane kill. Steel is also a hazard to oil field infrastructure and at one time there was a map showing a shooting closure, but it was too confusing and abandoned. I would propose the following:
A total ban on Steel projectiles County wide with, perhaps, exemptions for wildlife refuges and shooting ranges.

The second proposal is to allow primitive sidelock muzzleloader seasons or areas to be designated in this State. Regular rifle's and modern muzzleloader gun's bullets have the ability to travel from huntable lands into the oil fields. The oil companies Habitat Conservation Plan entails about two million acres of which fifty thousand is Federal BLM. The primitive or sidelock rifle has a limited range and would lessen any transfer into oil company properties, even those north of this county. Other counties may also be interested, such as those who only allow shotgun use for safety reasons, as the sidelock range is similar to the shotgun. Dr. Pratt of SUB Biology Dept. sees a need to limit the over browsing of chaparral as a cause of its becoming fire prone, and the post fire browsing of resprouts as causing the deadly mudslides.

While the California Deer Assn. of hunters has shown no interest in increasing the hunting opportunities with a mix of seasons such as there is in Pennsylvania, the Counties may be interested in the Sidelock use in reducing feral hogs which often are not only destructive of habitat, but also blamed for recall of lettuce because of transmitted disease. While not a fire ignition related item, I believe that the State Association of Counties may wish to endorse this firearm option as it has impacts on local economies and public health. For this reason it would be sensible if local as well as State ire and public health agencies have input sidelock season and locales to the Department of Fish and Wildlife and the Fish and Game Commission for making determinations of hunting as a tool.
I would now request that these two proposals be referred to both the State County Association and local staff for input and determination of feasibility until next month's Emergency Declaration.

Sincerely,

COUNTY OF SISKIYOU
Board of Supervisors

P.O. Box 750 □ 1312 Fairlane Rd
Yreka, California 96097
www.co.siskiyou.ca.us

(530) 842-8005
FAX (530) 842-8013
Toll Free: 1-888-854-2000, ext. 8005

January 22, 2019

Eric Sklar, President
California Fish and Game Commission
P.O. Box 944209 Sacramento, CA 94244-2090

Subject: Considering of Petition to List the Upper Klamath-Trinity River Spring Run Chinook Salmon as Endangered

Dear President Sklar:

The Siskiyou County Board of Supervisors is submitting this letter to express our opposition to the proposed listing of the Upper Klamath-Trinity Rivers Basin ("UKTR") Chinook salmon (*Oncorhynchus tshawtscha*), as petitioned by the Karuk Tribe and Salmon River Restoration Council.

A previous listing petition was determined a "not warranted" finding made in 2012. Although the more recent petition has been determined that it "may be warranted", the findings are narrowly related to two underlying causes; 1) disease and 2) regulatory mechanisms. Both are tangible, discrete findings that can be addressed to the benefit of future spring runs through proper management and decision making.

Siskiyou County believes there are other options and avenues to addressing the needs of UKTR Chinook, many of which are already under development or are being addressed through volunteer, local, state and federal efforts. Currently, a large group of stakeholders, including Siskiyou County, are engaged in a coalition to address water quality and habitat for coho salmon, which will have benefits for UKTR Chinook. Additionally, over the years there have been several programs and projects completed by local groups and water users to address the needs of fisheries, including the currently listed coho salmon. However, listing of coho salmon as endangered has done little to significantly help the species over the years, yet has had detrimental impacts on the drivers of Siskiyou County's economy and culture, including agriculture and our local fishing guides. Siskiyou County is proactive in addressing the needs of all fisheries and those who depend on fish, but we do not believe that an additional endangered species listing in the Klamath Watershed will result in quantifiable solutions.

There are several fishing guide services throughout Siskiyou County who conduct business on the Klamath River and other local rivers. Recreational and commercial fishing is economically important for many members of our communities throughout northern California, where the per capita median income is well below state average; $40,884 in Siskiyou County. A listing of the UKTR Chinook could result in losses at local hospitality, restaurant, and service sector industry, which benefit from people who visit the area as part of their fishing excursions; in addition to the economic impacts to the fishing

guides as a result of restrictions on fishing activities. The potential job and economic losses are another burden placed upon our counties by regulators who are disconnected from the engines of our local economies.

We ask that you consider our concerns, the livelihoods and businesses affected, when considering this petition. We stand ready to engage on proper management, enforcement, and other additional measures including hatchery management, season restrictions, and more. Listing is not, and should not be, the only solution to these problems.

We look forward to the opportunity to work with you on this important issue and hope to hear from you soon. If interested please contact Elizabeth Nielsen, Project Coordinator, at enielsen@co.siskiyou.ca.us or (530) 842-8012.

This letter was approved by the Siskiyou County Board of Supervisors on January 22, 2019, by the following vote:

AYES:	Supervisors Haupt, Kobseff, Valenzuela, Nixon and Criss
NOES:	NONE
ABSENT:	NONE
ABSTAIN:	NONE

Sincerely,

Brandon A. Criss

Brandon A. Criss, Chair
Board of Supervisors

cc: Director Chuck Bonham, California Department of Fish and Wildlife
Undersecretary Tom Gibson, California Department of Natural Resources
Alan Mikkelsen, Department of the Interior
Assemblyman Brian Dahle
Congressman Doug LaMalfa
Congressman Jared Huffman

COUNTY OF SISKIYOU

Laura Bynum, County Clerk - Registrar of Voters
510 N Main Street
Yreka, CA 96097-2525

Memorandum

TO: *Concerned Agencies*

FROM: *Laura Bynum, County Clerk* Wendy
By: Wendy Winningham, Deputy County Clerk

DATE: *February 14, 2019*

RE: *Enclosed Resolutions*

Per direction of the Siskiyou County Board of Supervisors on August 12, 2008, enclosed please find Resolution 08-153, a Resolution of the Siskiyou County Board of Supervisors asserting legal standing and formally requesting coordination with all Federal and State agencies maintain jurisdiction over lands and/or resources located in Siskiyou County.

Also, per direction of the Siskiyou County Board of Supervisors on June 11, 2013, enclosed please find Resolution 13-87, a Resolution of the Siskiyou County Board of Supervisors establishing a policy of no net increase in State and Federal land ownership in Siskiyou County.

Please feel free to contract me if you have any questions at 530-842-8015.

RESOLUTION OF THE BOARD OF SUPERVISORS
OF THE COUNTY OF SISKIYOU ASSERTING LEGAL
STANDING AND FORMALLY REQUESTING
COORDINATION WITH ALL FEDERAL AND STATE AGENCIES
MAINTAINING JURISDICTION OVER LANDS AND/OR
RESOURCES LOCATED IN SISKIYOU COUNTY

WHEREAS, Siskiyou County is a public unit of local government and a five member elected Board of Supervisors serves as its chief governing authority; and,

WHEREAS, the Siskiyou County Board of Supervisors is charged with supervising and protecting the tax base of the County and establishing comprehensive land use plans (including, but not limited to, the General Plan) outlining present and future authorized uses for all lands and resources situated within the County; and,

WHEREAS, Siskiyou County is engaged in the land use planning process for future land uses to serve the welfare of all the citizens of Siskiyou County; and,

WHEREAS, approximately sixty-eight percent (68%) of lands in Siskiyou County are publicly owned, managed, and/or regulated by various federal and state agencies; and,

WHEREAS, the citizens of Siskiyou County historically earn their livelihood from activities reliant upon natural resources and land which produces natural resources is critical to the economy of Siskiyou County; and,

WHEREAS, the economic base and stability of Siskiyou County is largely dependent upon commercial and business activities operated on federally and state owned, managed, and/or regulated lands that include, but are not limited to, recreation, tourism, timber harvesting, mining, livestock grazing, and other commercial pursuits; and,

WHEREAS, Siskiyou County desires to assure that federal and state agencies shall inform the Board of Supervisors of all ending or proposed actions affecting local communities and citizens within Siskiyou County and coordinate with the Board of Supervisors in the planning and implementation of those actions; and,

WHEREAS, coordination of planning and management actions is mandated by federal laws governing land management, including the Federal Land Policy and Management Act, 43 USC § 1701, and 43 USC § 1712, regarding the coordinate status of a county engaging in the land use planning process, and requires that the "Secretary of

SISKIYOU COUNTY
RESOLUTION
No. 08-153

the Interior [Secretary] shall . . . coordinate the land use inventory, planning and management activities . . . with the land use planning and management programs of other federal departments and agencies and of the state and local governments within which the lands are located"; and,

WHEREAS, the coordination requirements of Section 1712 provide for special involvement by government officials who are engaged in the land use planning process; and,

WHEREAS, Section 1712 sets forth the nature of the coordination required with planning efforts by government officials and subsection (f) of Section 1712 sets forth an additional requirement that the Secretary "shall allow an opportunity for public involvement" (including local government without limiting the coordination requirement of Section 1712 allowing land or resource management or regulatory agencies to simply lump local government in with special interest groups of citizens or members of the public in general); and,

WHEREAS, Section 1712 also provides that the "Secretary shall . . . assist in resolving, to the extent practical, inconsistencies between federal and non-federal government plans" and gives preference to those counties which are engaging in the planning process over the general public, special interest groups of citizens, and even counties not engaging in a land use planning program; and,

WHEREAS, the requirement that the Secretary "coordinate" land use inventory, planning, and management activities with local governments, requires the assisting in resolving inconsistencies to mean that the resolution process takes place during the planning cycle instead of at the end of the planning cycle when the draft federal plan or proposed action is released for public review; and,

WHEREAS, Section 1712 further requires that the "Secretary shall . . . provide for meaningful public involvement of state and local government officials . . . in the development of land use programs, land use regulations, and land use decisions for public lands"; and, when read in light of the "coordinate" requirement of Section 1712, reasonably contemplates "meaningful involvement" as referring to ongoing consultations and involvement throughout the planning cycle, not merely at the end of the planning cycle; and,

WHEREAS, Section 1712 further provides that the Secretary must assure that the federal agency's land use plan be "consistent with state and local plans" to the maximum extent possible under federal law and the purposes of the Federal Land Policy and Management Act and distinguishes local government officials from members of the general

public or special interest groups of citizens; and,

WHEREAS, the Environmental Protection Agency, charged with administration and implementation of the National Environmental Policy Act (NEPA), has issued regulations which require that federal agencies consider the economic impact of their actions and plans on local government such as Siskiyou County; and,

WHEREAS, NEPA requires federal agencies to consider the impact of their actions on the customs of the people as shown by their beliefs, social forms, and "material traits," it reasonably follows that NEPA requires federal agencies to consider the impact of their actions on the rural, land and resource-oriented citizens of Siskiyou County who depend on the "material traits" including recreation, tourism, timber harvesting, mining, livestock grazing, and other commercial pursuits for their economic livelihoods; and,

WHEREAS, NEPA requires federal agencies to consider the impact of their actions on the customs, beliefs, and social forms, as well as the "material traits" of the people; and,

WHEREAS, it is reasonable to interpret NEPA as requiring federal agencies to consider the impacts of their actions on those traditional and historical and economic practices, including commercial and business activities, which are performed or operated on federally and state managed lands (including, but not limited to, recreation, tourism, timber harvesting, mining, livestock grazing, and other commercial pursuits); and,

WHEREAS, 42 USC § 4331 places upon federal agencies the "continuing responsibility . . . to use all practical means, consistent with other considerations of national policy to . . . preserve important historic, culture, and natural aspects of our national heritage"; and,

WHEREAS, Webster's New Collegiate Dictionary (at 227, 1975) defines "culture" as "customary beliefs, social forms, and material traits of a group; the integrated pattern of human behavior passed to succeeding generations"; and,

WHEREAS, In 16 USC § 1604, the National Forest Management Act, requires the Forest Service to coordinate its planning processes with local government units such as Siskiyou County; and,

WHEREAS, federal agencies implementing the Endangered Species Act, the Clean Water Act, the Clean Air Act, and the Outdoor Recreation Coordination Act (16 USC § 4601-1(c) and (d)) are required by Congress to consider local plans and to coordinate and cooperate directly with plans of local government such as Siskiyou County; and,

WHEREAS, the coordinating provisions referred to in the resolution require the Secretary of the Interior to work directly with local government to resolve water resource issues and with regard to recreation uses of the federal lands, and,

WHEREAS, the regulations issued by the federal agencies in this resolution are consistent with statutory requirements of coordination and direct cooperation and provide implementation processes for such coordination and direction consideration and communication; and,

WHEREAS, the California Constitution has recognized Siskiyou County's authority to exercise its local, police and sanitary powers, and the California Legislature has recognized and mandated exercise of certain of those powers in specific statutes; and,

WHEREAS, the California Legislature has mandated in Government Code Section 65300 that each county shall prepare a comprehensive plan, and stated legislative intent in Section 65300.9 that the county planning shall be coordinated with federal and state program activities, and has mandated in Section 65103 that county local plans and programs must be coordinated with plans and programs of other agencies; and,

WHEREAS, the California Legislature has stated its intent in Section 65070 that preparation of state and regional transportation plans be performed in a cooperative process involving local government; and,

WHEREAS, the California Legislature has mandated in Section 65040 that the State Office of Planning and Research shall "coordinate, in conjunction with . . . local agencies with regard to matters relating to the environmental quality of the state"; and,

WHEREAS, in Water Code §§ 8125-8129, the California Legislature has placed planning for non-navigable streams within the authority of county supervisors, and since such planning activities must be coordinated with natural resource planning processes of federal and state agencies; and,

WHEREAS, in Streets and Highways Code §§ 940-941.2, the California Legislature has placed the general supervision, management, and control of county roads and highways - including closing such roads (Section 901) and removing and preventing encroachment of such roads and highways, and since planning and actions with regard to such roads by any federal or state agency must be coordinated with the county; and,

WHEREAS, in Public Resources Code § 5099.3, the California Legislature has mandated coordination by the state with Siskiyou County since it is a county "having interest in the planning, development, and maintenance of outdoor recreation resources

and facilities,"

NOW, THEREFORE, BE IT RESOLVED that the Siskiyou County Board of Supervisors does hereby assert legal standing and formally requests coordination status with all federal and state agencies maintaining jurisdiction over lands and/or resources located within Siskiyou County.

BE IT FURTHER RESOLVED that the Clerk of the Board shall cause a copy of this Resolution to be transmitted annually to local, regional, state, and/or national offices of all federal and state agencies maintaining jurisdiction of lands and/or resources located within Siskiyou County and to all federal and state elected representatives serving Siskiyou County.

BE IT FURTHER RESOLVED that the Clerk of the Board of Supervisors is authorized and hereby directed to publish a copy of this Resolution in the Siskiyou Daily News, a newspaper of general circulation printed and published in Siskiyou County, California.

PASSED AND ADOPTED this 12th day of August, 2008, by the following vote:

AYES: Supervisors Overman, Erickson, Armstrong, Kobseff and Cook
NOES: NONE
ABSENT: NONE
ABSTAIN: NONE

Chair, Board of Supervisors
W.R. Overman

ATTEST:
COLLEEN SETZER, CLERK
Board of Supervisors

By _____
Deputy

G:\Share\RESOLUTN\Coordination with State and Federal Agencies 2008 RES.wpd

RESOLUTION NO. 13-87

RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF SISKIYOU ESTABLISHING A POLICY OF NO NET INCREASE IN STATE AND FEDERAL LAND OWNERSHIP IN SISKIYOU COUNTY

WHEREAS, removal of lands from private ownership removes such lands from the property tax base and further undermines the County's ability to provide vital public services; and

WHEREAS, ever increasing restrictions on other economic uses of public lands, including grazing and mining, continue to impede the economic vitality of much of rural America, and leaving land in private ownership is the best safeguard to ensure the continuation of the land's productive use; and

WHEREAS, when most of the National Forests were reserved against any other uses in the first decade of the Twentieth Century, there was a Compact with the Forest Counties that 25 percent of monies received from activities on the National Forests would be dedicated to support county roads and schools to compensate for the loss of future property tax revenue; and

WHEREAS, the severe restrictions imposed on forest management by the listing of the northern spotted owl under the federal Endangered Species Act and the subsequent Northwest Forest Plan have resulted in a drastic decrease in forest receipts and the funding that used to be available to support county roads and schools; and

WHEREAS, the Secure Rural Schools and Community Self-Determination Act of 2000 was adopted by Congress to provide some level of relief for forest communities impacted by changes in forest management and timber harvests, but funding has continued to decrease each year and authorized funding has now completely expired; and

WHEREAS, there have long been promises from the federal government of Payment In Lieu of Taxes to compensate local governments for providing services that benefit public lands while receiving no property taxes to support those services; and

WHEREAS, those promises have never materialized in a substantial way; and

WHEREAS, the agency formerly known as the California Department of Fish and Game has failed perpetually to make promised payments of property taxes to county governments for lands it has converted to fish and game refuges, owing Siskiyou County Five Hundred Sixty Three Thousand Eight Hundred Seventy Eight Dollars ($565,878) as of the 2012-2013 fiscal year; and

SISKIYOU COUNTY
RESOLUTION
No. 13-87

WHEREAS, the stewardship of natural resources has long been of great importance to the economy and well-being of Siskiyou County; and

WHEREAS, private-sector ownership of lands and natural resources affords flexibility and incentive for active and effective management that do not exist on publicly-owned lands, as demonstrated by comparison of the condition of privately-managed forests in Siskiyou County with the condition of National Forest System lands; and

WHEREAS, laws such as the National Environmental Policy Act, the Endangered Species Act, and the National Forest Management Act, which were adopted with good intentions, have become legal tools by which narrow, special interests seek to prevent active and self-supporting stewardship of National Forest System lands; and

WHEREAS, without offsetting mitigation, the conversion of privately-owned lands to publicly-owned lands will increase the total acreage where active management is held hostage to federal and state environmental laws and the paralyzing delays and expenses of continuous judicial review; and

WHEREAS, special interest agendas and misplaced agency priorities continue to cause the state and federal governments to purchase and remove lands from productive use and the property tax base; and

WHEREAS, in recent years there has been increased tendency by state and federal agencies to obtain privately-held water rights or to constrain the exercise of such rights; and

WHEREAS, the Siskiyou County Board of Supervisors has adopted Resolution 08-153 asserting legal standing and formally requesting coordination with all federal and state agencies maintaining jurisdiction over lands and/or resources located in Siskiyou County;

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of the County of Siskiyou hereby adopts as County policy that:

There shall be no acquisition of private property (including any estates in land, any water rights, and any other privately held interests) in Siskiyou County by state or federal agencies

or by agents acting on behalf of such agencies using public or private funds and/or providing a state or federal agency with a right of first refusal to purchase or any management authority or control

without the prior approval of the County of Siskiyou and

the concomitant sale or exchange of public land to a private purchaser

of equal or greater market value and equal or greater acreage and

without impacting existing uses by third parties for grazing, mining, or other economic activity; and

each year the County Assessor shall prepare a report on the loss of property tax revenue to Siskiyou County as a result of changes in ownership of lands that renders such lands non-taxable; and

each year a copy of this resolution shall be distributed to state and federal agencies, accompanying the distribution of Resolution 08-153 addressing coordination with all state and federal agencies.

PASSED AND ADOPTED by the Siskiyou County Board of Supervisors at a regular meeting of said Board, held on the 11th day of June, 2013, by the following vote:

AYES: Supervisors Kobseff, Armstrong, Bennett and Criss
NOES: Supervisor Valenzuela
ABSENT: NONE
ABSTAIN: NONE

Ed Valenzuela
Chairman, Siskiyou County Board of Supervisors

ATTEST:
COLLEEN SETZER,
COUNTY CLERK

By _____
Deputy

APPROVED AS TO FORM:

Brian L. Morris
County Counsel

HUNG - A - LEL - TI

WOODFORDS WASHO COMMUNITY COUNCIL

March 5, 2019

California Fish and Game Commission

Re: Lands Pass Program

Dear California Fish and Game Commission:

My name is Irvin Jim, Jr. and I am the Chairman of the Woodfords Washoe Community Council and a Tribal Councilman for the Washoe Tribe of California and Nevada. I am writing this letter in opposition to the Land Pass Program and in support of Alpine County's petition to keep Hope Valley open to the public.

Historically and since time immemorial, Lake Tahoe and surrounding areas around the Lake, especially the Woodfords area, Hope Valley and the Carson Valley, are within the Washiw (Washoe) traditional homelands boundaries. The Washiw have used these areas to survive and flourish before the first settlers came to our homelands.

Since then, the Washoe Tribe of Nevada and California, Alpine County, and the Forest Service have been co-stewards, working together to make sure our local areas are managed, appreciated, and enjoyed by everyone. The Rural County Representatives of California (RCRC) is working with Alpine County and has the support of the Woodfords Washoe Community Council.

Please consider exempting Hope Valley from the Lands Pass Program. In our hope that future generations of Washiws and their visitors will be able to enjoy Hope Valley and the other parts of Washiw traditional homelands for years to come.

Thank you for your consideration and time.

Respectfully,

Irvin Jim

Chairman, Woodfords Washoe Community Council

Tribal Councilman, Washoe Tribe of Nevada and California

96 Washoe Boulevard • Markleeville, California 96120 • (530) 694-2170 • FAX (530) 694-1890

From: Jonathan Graham
Sent: Monday, March 25, 2019 2:52 AM
To: FGC
Subject: California Delta Hello I certainly hope someone reads this. Two major things that are damaging the California delta and the associated structures.

(1) The spraying of aquatic vegetation with a known carcinogen is mindboggling to everyone. People are being awarded lawsuits against Monsantos roundup, and the state of California is spraying it and another copper based chemical directly in the water. I would like to report the State of California for Polluting drinking water for Solano, Contra Costa, and a few other counties. The weeds are making the Delta cleaner and healthier for everything that sustains life from its liquid environment.

(2) The Sea Lion population in the Central part of the Delta going in every direction from there. They are destroying levees, islands and eating every fish around. I can provide pictures if youd like. In 4 years they have decimated all species. Salmon. Bass. Carp, catfish, nothing is safe. unfortunately people are starting to take matters into their own hands. Yes killing them, . That is due tom the frustration the entire community feels towards the lack of commitment by the state agencies... It really seems like CFG wants to steal the water to send it to southern California. Federally protected mammal that is destroying what us citizens save with a lifetime of catch and release. maybe we should all take our limits of fish to starve the seals out. Something needs to be done.

Best Regards J. Graham

From: Jackson, Monica@Wildlife <Monica.Jackson@Wildlife.ca.gov>
Sent: Thursday, April 4, 2019 8:59 AM
To: Lehr, Stafford@Wildlife <Stafford.Lehr@wildlife.ca.gov>; Lewis, Kari@Wildlife <Kari.Lewis@wildlife.ca.gov>; Miller-Henson, Melissa@FGC <Melissa.Miller-Henson@fgc.ca.gov>
Subject: Le er from Siskiyou County Resident

Good Morning,

Please see attachment FYI, no response required.

Have a nice day!

Thank you,

Monica M. Jackson
California Department of Fish & Wildlife
Assistant to Gabe Tiffany, Deputy Director of Administration
Director's Office
916-653-7667
Monica.Jackson@WildLife.ca.gov

3-27-19

Dear Sir;

This letter is in response to an article you wrote in "The Weed Press" a few weeks back regarding the decline in license sales over the past few years. Having hunted here in Siskiyou County since I was 12 years old (I am now 68 and retired), I know a few things about the subject.

First of all, with all of the gun law pressures from "the big California city populations" who know nothing on the subject other than they just hate guns ... it seems that the California Game and Fish Department is basicly doomed. Every year, as you pointed out, less and less of "us" are hunting, thus not buying licenses which fund this Department. But this is "their" plan all along ... put demands, pressures and restrictions on individuals like "us" to ENSURE WE quit. My wife and I hunt in order to put meat in our freezer, thus not depending on the cattle industry that city populations HAVE to rely on for their food ... thus self-reliance! As a result of this loss revenue, you will have to continue raising your license fees until hunters are basically shut-out because it's unaffordable at that point. I have many friends in Siskiyou County who have already told me as such! Not to mention we have to now use steel shot. What is the difference between using steel shot on Grouse and Quail .. but not on Doves I ask? The predatory mammals and birds eat all of this game equally! Just a stupid bill to get us to quit hunting, we have to carry a variety of loads for just these three games birds.

"Sacramento law makers" need to allow each COUNTY to run it's own independant California Game and Fish department as it sees fit according to wildlife populations, number of hunters and persons such as me who have a vested interest in filling our freezers! It would not be an understatement to say that my wife and I are "100% totally pissed" that our hunting rights here in Siskiyou County are being taken away by idiots with an agenda to TAKE OUR GUNS!!

Sincerely from the heart

Thomas Mallory

Thomas Mallory

Stafford, Kari Lewis, Mellisa Miller-Henson

State of California
Department of Fish and Wildlife

Original on file.
Received April 8, 2019, 10:00AM

M e m o r a n d u m

Date: April 8, 2019

To: Melissa Miller- Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Agenda Item for the April 17, 2019 Fish and Game Commission Meeting - Private Lands Wildlife Habitat Enhancement and Management (PLM) Area Licenses**

The Department of Fish and Wildlife has reviewed the Annual renewals, five-year renewals and an Initial PLM Management Plan for a total of 55 properties in 16 counties encompassing approximately 885,226 acres.

The Annual renewal PLM areas were previously licensed under Commission regulations Section 601, Title 14, California Code of Regulations. Full payment was made for all tags used in 2018, and all habitat work was completed.

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The Department recommends the Commission approve the specified wildlife management plans, applications, and each 2019/20 harvest program under conditions specified in the attached table.

If you have any questions, please contact Ms. Victoria Barr at (916) 445-4034 or by email at Victoria.Barr@wildlife.ca.gov.

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Received from DFW April 8 , 2019

PLM AREA LICENSE INITIAL 5-YEAR MANAGEMENT PLAN, 2019-2023 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
NORTH CENTRAL REGION		
ANDERSON RANCH DEER ZONE C-4 GLENN 400 ACRES	***Authorized Harvest:*** 3 buck deer forked horn or better and 3 antlerless deer • Issue 3 deer tags to take 3 buck deer for the period of September 21, 2019 through October 6, 2019 and October 26, 2019 to November 3, 2019. After the initial year the hunting period will be November 1 to December 31. • Issue 3 deer tags to take 3 antlerless deer for the period of September 21, 2019 through October 6, 2019 and October 26, 2019 to November 3, 2019. After the initial year the hunting period will be November 1 to December 31. These 3 antlerless tags will be donated to the SHARE Program.	➢ High fence 20 acres of newly planted walnut trees. ➢ Protect re-plants with wire baskets. ➢ ~150 wire baskets will be placed around new plantings. ➢ Plant 20 acres of cover crops including winter wheat and mustard plants.

State of California
Department of Fish and Wildlife

Original on file.
Received April 8, 2019, 10:00AM

M e m o r a n d u m

Date: April 8, 2019

To: Melissa Miller- Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Agenda Item for the April 17, 2019 Fish and Game Commission Meeting - Private Lands Wildlife Habitat Enhancement and Management (PLM) Area Licenses**

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Habitat improvements accomplished under these plans will enhance and maintain wildlife resources on and around the PLM areas. Goals and objectives stated in the management plans are compatible with Department management plans for applicable species in these areas. In addition, implementation of these management plans will not diminish access to public lands.

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Received from DFW April 8, 2019

PLM AREA LICENSE NEW 5-YEAR MANAGEMENT PLANS, 2019-2023 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
NORTHERN REGION		
BELL RANCH DEER ZONE C4 TEHAMA 15,000 ACRES	***Authorized Harvest:*** 15 buck deer forked horn or better • Issue 22 buck deer tags to take 15 buck deer for the period of October 26, 2019 through November 30, 2019. • In no case shall the number of tags issued be used to exceed the authorized harvest. • The number of tag holders actively hunting shall not exceed the number of deer available to harvest.	➢ Maintain 16 previously developed springs by checking for broken pipes and repairing as necessary. ➢ Develop a new water source by installing a drinker with a rainwater-collection apron and a water storage tank. ➢ Maintain 6 reservoirs by inspecting spillways and dams for damage and making any necessary repairs. ➢ Mechanically treat (by crushing with a bulldozer and masticating) at least 15 acres of decadent brush to encourage the growth of nutritious deer forage. ➢ Restrict off-road vehicle use within the recent brush treatment areas to minimize ground disturbance and minimize disturbance to wildlife. ➢ Remove at least 0.25 mile of woven wire interior fencing to enhance wildlife movement.
CAPISTRAN RANCH DEER ZONE B1 MENDOCINO 13,200 ACRES	***Authorized Harvest:*** 20 deer of which no more than 15 may be forked horn or better buck deer and 5 may be antlerless deer, 2 bull elk, and 2 antlerless elk • Issue 10 either-sex deer tags for the period of August 1, 2019 through November 30, 2019. • No antlerless deer shall be harvested before September 15, 2019. • No more than 10 buck deer may be harvested after October 27, 2019. • On or before October 15, 2019, the licensee may request (in writing) up to 10 additional either-sex tags to accomplish the authorized harvest. • Issue 2 bull elk tags for the period of August 1, 2019 through December 1, 2019. • Issue 2 antlerless elk tags for the period of September 15, 2019 through December 1, 2019.	➢ Continue the reduced amount of livestock grazing (no more than 200 cow/calf pairs on 13,200 acres) for the period of October 15, 2019 through June 20, 2020 to increase residual vegetation for wildlife and reduce competition. ➢ Manage invasive plants by focused high-intensity, short-term grazing. ➢ Maintain 10 springs by checking the flow and wildlife escape ramps and repairing any damaged parts. ➢ Exclude trespass livestock from USFS and BLM grazing allotments by inspecting and repairing the boundary fence. ➢ Replace the nesting material in 3 bluebird nest boxes. Boxes will be relocated if not used the previous season. ➢ Maintain 3 wood duck nest boxes. ➢ Construct a brush pile for wildlife cover and oak seedling protection. The 20 foot x 5 foot pile will be created using slash from down trees and brush, and will be located near a routinely-used water source. ➢ Maintain and monitor 3 (approximately 1,000-square foot) food plots spread out over the property and in areas where

PLM AREA LICENSE NEW 5-YEAR MANAGEMENT PLANS, 2019-2023 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
CAPISTRAN RANCH CONT.		green summer browse is limited. Each food plot is fenced from cattle and wild pigs. Each will have a motion-sensing camera to record day and night deer activity. The annual report will include a table of total number and composition of deer photographed. ➢ Using a tractor, create a 6 foot wide and 300 foot long trail through decadent chaparral to provide access and new palatable forage for wildlife. ➢ Build and place 1 mallard hen nest tube and annually maintain those developed previously. ➢ Treat 2 acres of yellow star-thistle with appropriate herbicide.
FOUR PINES RANCH DEER ZONE B1 MENDOCINO 2,001 ACRES	***Authorized Harvest***: 12 buck deer forked horn or better and 4 antlerless deer • Issue 12 buck deer tags and 4 antlerless deer tags for the period of July 16, 2019 through November 30, 2019. • No more than 6 buck deer may be harvested after October 27, 2019. • No antlerless deer shall be harvested before September 15, 2019. • Youth hunts: Continue working with California Deer Association on mentored youth hunts on Four Pines to assist in management goals and encourage and cultivate new hunters. 1- 4 tags per year.	➢ Maintain 7 previously improved springs and 2 existing ponds. ➢ Develop 1 spring in section 1, 7, 11, 12, or 13. ➢ Plant and maintain 0.50 acre forage plot with legumes for wildlife use in section 1, 7, 11, 12, or 13. ➢ Treat 0.25 acre of invasive weeds in section 1, 7, 11, 12, or 13, by hand manipulation or herbicides, to encourage native vegetation growth. ➢ Remove 100 feet of interior fence to enhance wildlife passage in section 1, 7, 11, 12, or 13. ➢ Create a 0.25 acre opening through dense brush in section 1, 7, 11, 12, or 13 to enhance wildlife access to forage. ➢ Remove encroaching conifer seedlings and saplings in 0.25 acre of oak woodlands in section 1, 7, 11, 12, or 13. ➢ Restrict livestock grazing to no more than 50 head of cattle during the winter and spring. ➢ Plant 50 willow shoots at existing water sources; improve existing willow patches by trimming to encourage growth. ➢ Create at least 2 new brush piles annually for wildlife cover.

PLM AREA LICENSE NEW 5-YEAR MANAGEMENT PLANS, 2019-2023 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
REDWOOD HOUSE RANCH DEER ZONE B1 HUMBOLDT 8,419 ACRES	***Authorized Harvest:*** 20 either-sex deer of which no more than 10 may be antlerless deer and 1 bull elk • Issue 20 either-sex deer tags for the period of August 10, 2019 through November 30, 2019. • No more than 7 buck deer fork horned or better may be harvested after October 27, 2019. • No antlerless deer shall be harvested before October 1, 2019 • Issue 1 bull elk tag for the period of September 21, 2019 through October 13, 2019.	➢ Maintain previously treated oak woodlands by removing encroaching conifers less than or equal to 6 inches diameter-at-breast height (DBH) from at least 40 acres of oak woodlands and prairies. ➢ Develop 1 water source for wildlife use annually.
SMITH RIVER PLM HUMBOLDT 24,949 ACRES	***Authorized Harvest***: 4 bull elk and 6 antlerless elk • Issue 4 bull elk tags for the period of September 1, 2019 through October 31, 2019. • Issue 6 antlerless elk tags for the period of October 1, 2019 through October 31, 2019. • 5 of the antlerless elk tags will be made available for CDFW to distribute to licensed hunters through the SHARE Program. The SHARE program will reimburse the PLM for the tag fee, but the PLM will otherwise provide the hunt free of charge.	➢ Enhance Coho Salmon habitat in Rowdy Creek through the instream placement of 30-40-foot-long trees with root wads attached for large woody debris habitat.
WIGGINS RANCH HUMBOLDT 16,657 ACRES	***Authorized Harvest***: 2 bull elk and 2 antlerless elk • Issue 2 bull elk tags for the period of August 15, 2019 through October 31, 2019. • Issue 2 antlerless elk tags for the period of October 1, 2019 through November 15, 2019. • 1 of the antlerless elk tags will be made available for CDFW to distribute to an Apprentice Hunter through the SHARE Program. The SHARE program will reimburse the PLM for the tag fee, but the PLM will otherwise provide the hunt free of charge.	➢ Remove encroaching conifers less than or equal to 6 inches DBH from at least 40 acres of oak woodlands.

PLM AREA LICENSE NEW 5-YEAR MANAGEMENT PLANS, 2019-2023 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
CENTRAL REGION		
HEARST RANCH SAN LUIS OBISPO COUNTY 5,381 ACRES	***Authorized Harvest***: 6 bull elk and 6 antlerless elk • Issue 2 bull elk tags for the period of July 15, 2019 through December 31, 2019. • Issue 2 antlerless elk tags for the period August 15, 2019 through December 31, 2019. *Note: The Hearst Ranch is not requesting their full allocation of tags.	➢ Irrigate approximately 152 acres in the Arroyo de la Cruz drainage and, if necessary, seed with native grass to produce year-round forage for wildlife. ➢ Continue rotational grazing practices to meet the standard for 'light' grazing. ➢ Exclude livestock with permanent or temporary fencing from the Arroyo de la Cruz riparian corridor during live stream flow. ➢ Treat 1 acre for Spanish Broom using hand pulling and digging. Application of 3% glyphosate or mechanical cutting as needed. ➢ Treat 1 acre for Jubata grass with hand pulling and application of 2% glyphosate, if needed. Control flower plumes by bagging and removing or burning. ➢ Install 2 quail guzzlers in the Laguna-Rossi area (2020, 2023). ➢ Install 700 feet of hog-wire fencing to exclude feral pigs from the Arroyo de la Cruz riparian corridor (2019, 2021). ➢ Install 4 raptor perch poles in the Arroyo de la Cruz irrigated pastures (2022).
TEJON RANCH DEER ZONE D-10 KERN & LOS ANGELES COUNTIES 270,000 ACRES	***Authorized Harvest:*** 30 either-sex deer, 5 antlerless deer, 12 bull elk, 3 cow elk, and 10 bearded turkeys • Issue 15 either-sex tags for the period of September 21, 2019 through November 3, 2019 (early season). • Issue 15 either-sex tags for the period of November 4, 2019 through December 31, 2019 (late season). • Issue 5 antlerless deer tags for the period of September 21, 2019 through December 31, 2019. • Issue 12 bull elk tags and 3 antlerless elk tags for the period of September 1, 2019 through December 31, 2019. • No persons shall take more than 1 buck deer,1 bull elk, and 1 antlerless elk. • Issue 10 bearded turkey tags for the period of March 16, 2020 through May 19, 2020.	➢ Treatment of roadside invasive weeds/ Comanche, Alamo, Haul Road, Antelope Valley. ➢ Treatment of invasive weeds at pond sites. ➢ Maintenance of livestock water systems / wildlife escape ramps. ➢ Guzzler system repairs and maintenance. ➢ Addition of water trough, Five Springs System. ➢ Addition of water trough, Oso Canyon. ➢ Conduct Residual Dry Matter surveys and report results. ➢ Maintenance of netting covering open water tanks and large spring containments. ➢ Maintenance of fencing to exclude cattle; maintenance of smooth wire pasture fences modified for pronghorn movement. ➢ Monitor riparian zones using Best Management Practices for wildlife management and cattle grazing.

PLM AREA LICENSE *NEW 5-YEAR MANAGEMENT PLANS, 2019-2023* *PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS*		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
WORK RANCH DEER ZONE A MONTEREY 19,500 ACRES	***Authorized Harvest:*** 1 bull elk, 4 antlerless elk, 6 buck deer forked horn or better, and 2 antlerless deer • Issue 1 bull elk tag for the period of July 2, 2019 through December 31, 2019. • Issue 4 buck deer tags and 4 either-sex deer tags to take no more than 6 bucks and 2 antlerless deer for the period of July 2, 2019 through November 30, 2019. Note: Work Ranch is not requesting to use their antlerless elk tag allocation.	➢ Maintain perennial water for wildlife in 4 guzzlers. ➢ Repair quail guzzler in Vineyard Canyon. ➢ Increase dryland grain plantings to 400 acres to provide supplemental food and cover for wildlife. ➢ Install new water trough in George Canyon. ➢ Install new ground level water trough in Nado/Nato field. ➢ Install solar well at Leach field.

California Fish and Game Commission

Alphabetical Listing of PLM Properties for Five-Year Licenses and Area Plans for April 17, 2019 Meeting

Approve five-year PLM 2019-2023 licenses and area plans for:

(A) Bell Ranch (Tehama County)

(B) Capistran Ranch (Mendocino County)

(C) Four Pines Ranch (Mendocino County)

(D) Hearst Ranch (San Luis Obispo County)

(E) Redwood House Ranch (Humboldt County)

(F) Smith River PLM (Humboldt County)

(G) Tejon Ranch (Kern/Los Angeles Counties)

(H) Wiggins Ranch (Humboldt County)

(I) Work Ranch (Monterey County)

Author: *Sergey Kinchak*

State of California
Department of Fish and Wildlife

Original on file.
Received April 8, 2019, 10:00AM

M e m o r a n d u m

Date: April 8, 2019

To: Melissa Miller- Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

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PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
NORTHERN REGION		
3D RANCH DEER ZONE B5 TEHAMA 1,732 ACRES	***Authorized Harvest:*** 7 buck deer forked horn or better and 6 bear • Issue 7 buck deer tags for the period of August 15, 2019 through November 30, 2019. • No more than 4 buck deer may be harvested after October 27, 2019. • Issue 6 bear tags for the period of August 15, 2019 through December 31, 2019 or when the season closes because the Department has determined that 1,700 bears have been harvested. • Issue 75 quail seals for the period of September 1, 2019, through February 28, 2020.	➢ Mechanically crush 15 acres of decadent brush to improve forage for wildlife. ➢ Maintain a minimum of 7 acres of forage plots planted with legumes by replanting as necessary and irrigating. Manage plots 3 and 4 to promote turkey mullein. ➢ Maintain 4 water sources to provide water for wildlife by checking for broken pipes and repairing as necessary. ➢ Remove at least 0.25 mile of unnecessary interior fencing to prevent wildlife entanglement.
ALEXANDRE ECODAIRY FARMS PLM DEL NORTE 1,728 ACRES	***Authorized Harvest:*** 2 bull elk and 4 antlerless elk • Issue 2 bull elk tags for the period of September 1, 2019 through December 31, 2019. • Issue 4 antlerless elk tags for the period of October 1, 2019 through December 31, 2019.	➢ All habitat projects for the Alexandre Ecodairy Farms PLM 5-year Management Plan have been completed (creation and management of 25 acres of developed wetlands, and continued assistance to local CDFW Environmental Scientists monitoring elk populations). Therefore, no habitat work is required during this license year.
AMANN RANCH MENDOCINO 369 ACRES	***Authorized Harvest:*** 1 bull elk • Issue 1 bull elk tag for the period of August 1, 2019 through November 30, 2019.	➢ Irrigate at least 60 acres of pasture for use by wildlife. ➢ Maintain 16 water troughs by ensuring they are holding adequate water for wildlife. ➢ Leave unharvested the second cutting of hay on 342 acres. This will retain approximately 500 tons of forage accessible to elk. ➢ Install 1 rail-type elk fence crossing. The top cross rail will be no higher than 48 inches above the ground to accommodate adult elk and the bottom cross rail will be no lower than 22 inches to facilitate crossing by elk calves.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
BIG LAGOON HUMBOLDT 109,367 ACRES	***Authorized Harvest:*** 4 bull elk and 2 antlerless elk • Issue 4 bull elk tags for the period of August 15, 2019 through October 31, 2019. • On or before October 1, 2019, the licensee may request (in writing) up to 1 additional bull elk tag to accomplish the authorized harvest of 4 bull elk. • In no case shall the number of tags issued be used to exceed the authorized harvest. • The number of tag holders actively hunting shall not exceed the number of elk available to harvest. • Issue 2 antlerless elk tags for the period of September 5, 2019 through November 15, 2019.	➢ All habitat projects have been completed under the Big Lagoon PLM 5-year Management Plan (collection of required trees with attached root wads and delivering logs and associated root wads to a 0.50 mile stream restoration site to create accelerated large woody debris piles for the Little River Coho Habitat Improvement Project). Therefore, no habitat work is required during this license year.
CARLEY RANCH DEER ZONE B1 MENDOCINO 1,660 ACRES	***Authorized Harvest:*** 22 deer of which no more than 15 may be buck deer forked horn or better and 7 may be antlerless deer • Issue 10 either-sex deer tags for the period of August 1, 2019 through November 30, 2019. • No more than 7 buck deer may be harvested after October 20, 2019. • No antlerless deer shall be harvested before September 15, 2019. • On or before October 15, 2019, the licensee may request (in writing) up to 12 additional either-sex deer tags to accomplish the authorized harvest. • In no case shall the number of tags issued be used to exceed the authorized harvest. • The number of tag holders actively hunting shall not exceed the number of deer available to harvest.	➢ Maintain all previously developed water sources (3 springs and 4 guzzlers; guzzlers total 3,200 gallons) to provide water for wildlife. Maintenance includes repairing broken and deteriorating pipes and other components. ➢ Use cattle to help remove thatch buildup of medusahead and other nonnative grasses. Cattle will be limited to 30 head and grazing will only occur from December through May. ➢ Maintain the wildlife-friendly livestock exclusion fencing around developed springs by repairing any damage. ➢ Reseed a 5 acre dryland food plot if the current alfalfa, chicory, and plantain crop has less than 50% cover. ➢ Irrigate the 1 acre alfalfa food plot during the dry season. The plot is fenced with wildlife-friendly fencing to exclude livestock.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
CHRISTENSEN RANCH DEER ZONE B1 MENDOCINO 1,061 ACRES	***Authorized Harvest:*** 22 deer of which no more than 15 may be buck deer forked horn or better and 7 may be antlerless deer • Issue 22 either-sex deer tags for the period of August 1, 2019 through November 30, 2019. • No antlerless deer shall be harvested before September 15, 2019. • No more than 7 buck deer may be harvested after October 20, 2019. • On or before October 20, 2019, the licensee may request (in writing) up to 12 additional either-sex tags to accomplish the authorized harvest. • The number of tag holders actively hunting shall not exceed the number of deer available to harvest. • In no case shall the number of tags issued be used to exceed the authorized harvest.	➢ Continue to promote bald eagle nesting through the retention of snags and large trees. ➢ Annually check 6 developed springs and repair any broken water pipes. ➢ Irrigate and reseed the 0.75 acre and the 0.5 acre Brassica forage plots to provide green forage during summer, and reseed areas that did not grow. ➢ Plant Brassica seed in the fall by manually seeding and raking in fresh pig rooting areas. The extent of this activity will depend on pig activity but is expected to represent at least 6 sites this year, scattered throughout the ranch. ➢ Exclude cattle from the ranch; no cattle leases are proposed under the PLM 5-year Management Plan. ➢ Improve fish habitat in Woodman Creek by continuing to work with California Trout and state agencies on the Woodman Creek Barrier Removal Project. Monitoring the success of the creek project for steelhead accessibility.
COTTRELL RANCH DEER ZONE B1 HUMBOLDT 6,500 ACRES	***Authorized Harvest***: 12 deer of which no more than 10 may be antlerless deer, 1 bull elk, and 1 antlerless elk • Issue 12 either-sex deer tags for the period of July 15, 2019 through November 30, 2019. • No antlerless deer shall be harvested before October 1, 2019. • No more than 7 buck deer may be harvested after October 21, 2019. • Buck deer must be forked horn or better. • Issue 1 bull elk tag for the period of July 15, 2019 through November 30, 2019. • Issue 1 antlerless elk tag for the period of October 1, 2019 through November 30, 2019. •	➢ Remove encroaching conifers less than or equal to 4 inches diameter at breast height (DBH) from at least 50 acres of oak woodlands.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
DIAMOND C OUTFITTERS DEER ZONE B1 HUMBOLDT 3,200 ACRES	***Authorized Harvest:*** 17 deer of which no more than 10 may be antlerless deer • Issue 17 either-sex deer tags for the period of July 15, 2019 through November 30, 2019. • No antlerless deer shall be harvested before October 1, 2019. • No more than 7 buck deer may be harvested after October 27, 2019. • Buck deer must be forked horn or better.	➢ Remove encroaching conifers less than or equal to 6 inches DBH from at least 20 acres of oak woodlands in Oak Woodland Treatment Units 1 and 2.
ELK CREEK RANCH DEER ZONE B1 MENDOCINO 2,241 ACRES	***Authorized Harvest:*** 7 buck deer forked horn or better • Issue 7 buck deer tags for the period of July 13, 2019 through November 30, 2019. • No more than 3 buck deer may be taken after October 27, 2019. • On or before October 15, 2019, the licensee may request (in writing) up to 3 additional buck deer tags to accomplish the authorized harvest. • In no case shall the number of tags issued be used to exceed the authorized harvest. • The number of tag holders actively hunting shall not exceed the number of deer available to harvest.	➢ Exclude livestock grazing from Bennett Valley (15 acres) to improve wildlife forage and cover. ➢ Maintain the livestock exclusion fencing around the ponds in sections 8 and 5. ➢ Maintain spring and water tank to irrigate the southern portion of Bennett Valley. ➢ Mechanically treat at least 20 acres of decadent brush to improve wildlife forage. ➢ Create 10 brush piles to provide wildlife cover.
HUNTER RANCH DEER ZONE B1 HUMBOLDT 16,103 ACRES	***Authorized Harvest:*** 20 deer of which no more than 5 may be antlerless deer and 1 bull elk • Issue 20 either-sex deer tags for the period of July 15, 2019 through November 30, 2019. • No antlerless deer shall be harvested before October 1, 2019. • Buck deer must be forked horn or better.	➢ Remove encroaching conifers less than or equal to 6 inches DBH from at least 40 acres of oak woodlands.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
HUNTER RANCH CONT.	• No more than 7 buck deer may be harvested after October 27, 2019. • Issue 1 bull elk tag for the period September 1, 2019 through October 15, 2019.	
KLAMATH PLM HUMBOLDT 32,594 ACRES	***Authorized Harvest:*** 2 bull elk and 2 antlerless elk • Issue 2 bull elk tags for the period of August 15, 2019 through October 31, 2019. • On or before October 1, 2019, the licensee may request (in writing) up to 1 additional bull elk tag to accomplish the authorized harvest. • In no case shall the number of tags issued be used to exceed the authorized harvest. • The number of tag holders actively hunting shall not exceed the number of elk available to harvest. • Issue 2 antlerless elk tags for the period of September 5, 2019 through October 31, 2019.	➢ All habitat projects have been completed under the Klamath PLM 5-year Management Plan (removal of encroaching conifers from oak woodlands). Therefore, no habitat work is required during this license year.
MILLER-ERIKSEN RANCH DEER ZONE B1 MENDOCINO 1,000 ACRES	***Authorized Harvest:*** 25 deer (of which no more than 17 may be buck deer forked horn or better and 8 may be antlerless deer) and 1 bull elk • Issue 14 either-sex deer tags for the period of July 20, 2019 through November 30, 2019. • No antlerless deer shall be harvested before September 15, 2019. • No more than 9 buck deer may be harvested after October 27, 2019. • On or before November 1, 2019, the licensee may request (in writing) up to 11 additional either-sex tags to accomplish the authorized harvest.	➢ Clean and repair 3 spring development water sources to provide additional water for wildlife by replacing floats, rusted and/or cracked pipes, leaking tanks and clogged lines. ➢ Plant 100 pounds of commercial pasture seed mix across the small irrigated pastures and in open glade areas to provide food and cover for wildlife. ➢ Burn 3 acres of decadent chaparral brush to provide forage for wildlife. ➢ Treat 0.50 acre of yellow star-thistle with an appropriate herbicide. ➢ Maintain 0.50 mile of low elk crossing fences. ➢ Build 10 brush piles throughout the property to provide wildlife cover. ➢ Maintain the reduced number of livestock, not to exceed 25 cow/calf pairs.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
MILLER-ERIKSEN RANCH CONT.	• Issue 1 bull elk tag for the period of August 1, 2019 through November 30, 2019.	➢ Maintain at least 0.75 acres of irrigated pastures, within which livestock will be excluded from at least 0.20 acres.
R WILD HORSE RANCH DEER ZONE B5 TEHAMA 4,000 ACRES	***Authorized Harvest:*** 4 buck deer forked horn or better • Issue 4 buck deer tags for the period of November 19, 2019 through November 22, 2019.	➢ Mechanically treat (by cutting) at least 10 acres of decadent brush to promote new growth and create wildlife travel corridors. ➢ Plant 10 acres of brush treatment areas with legumes and grasses. ➢ Create a 0.50 acre water catchment basin to provide a water source for wildlife. ➢ Build at least 10 brush piles (each 20 feet in diameter) to provide escape cover for wildlife.
RAINBOW RIDGE PLM DEER ZONE B4 HUMBOLDT 21,300 ACRES	***Authorized Harvest:*** 15 buck deer forked horn or better • Issue 15 buck deer tags for the period of August 1, 2019 through November 30, 2019. • No more than 8 buck deer may be harvested after October 1, 2019.	➢ All habitat projects have been completed under the Rainbow Ridge PLM 5-year Management Plan (removal of encroaching conifers from oak woodlands). Therefore, no habitat work is required during this license year.
ROBERTS RANCH DEER ZONE X1 MODOC 2,313 ACRES	***Authorized Harvest:*** 2 buck deer forked horn or better • Issue 2 buck deer tags for the period of October 1, 2019 through November 30, 2019. • No person shall take more than 1 buck deer annually in the X zones.	➢ Remove 300 regenerating western junipers less than 6 inches DBH within previous juniper removal areas to create more forage for wildlife. ➢ In a separate portion of the ranch, remove all western junipers from at least 3 acres, to enhance water flow to springs and stimulate bitterbrush recruitment. ➢ Maintain all previously developed springs, levees, and ponds by ensuring that recent earthwork (levees, water control structures and pipes) continue to function as designed. ➢ Restrict cattle grazing to a level much reduced from what occurred prior to the current ownership (no more than 50 cow/calf pairs).

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
SANHEDRIN RANCH DEER ZONE B1 MENDOCINO 11,595 ACRES	***Authorized Harvest:*** 15 buck deer forked horn or better • Issue 15 buck deer tags for the period of July 13, 2019 through November 30, 2019. • No more than 7 buck deer may be taken after October 27, 2019. • On or before October 15, 2019, the licensee may request (in writing) up to 5 additional buck deer tags to accomplish the authorized harvest. • In no case shall the number of tags issued be used to exceed the authorized harvest. • The number of tag holders actively hunting shall not exceed the number of deer available to harvest.	➢ Exclude all livestock grazing from the PLM area to improve forage and cover for wildlife. ➢ Maintain 5 developed springs. ➢ Improve one additional spring by cleaning and digging out silt to improve water availability. ➢ Mechanically treat at least 20 acres of decadent brush to improve wildlife forage. ➢ Create at least 10 brush piles for use by wildlife.
SEVEN SPRINGS RANCH DEER ZONE A MENDOCINO 2,250 ACRES	***Authorized Harvest:*** 9 buck deer forked horn or better • Issue 9 buck deer tags for the period of July 13, 2019 through November 30, 2019. • No more than 4 buck deer may be harvested after September 29, 2019.	➢ Exclude livestock grazing from the PLM area to increase habitat quality for wildlife. ➢ Plant 5 pounds of clover and vetch seed on roads and cut banks. ➢ Mechanically treat 1 acre of Douglas-fir saplings encroaching into oak woodlands along roadside to the 450.
SHAMROCK RANCH DEER ZONE B1 MENDOCINO 16,400 ACRES	***Authorized Harvest:*** 50 deer (of which no more than 30 may be buck deer forked horn or better, and 20 may be antlerless deer), 8 bull elk, 10 antlerless elk, and 4 bear • Issue 35 either-sex deer tags for the period of July 12, 2019 through November 30, 2019. • No antlerless deer shall be harvested before September 15, 2019. • No more than 15 buck deer may be taken after October 27, 2019.	➢ Prescriptive grazing of the Horse Hollow livestock exclosure to remove decadent mature forage. ➢ Hinge-cut 2 oaks to provide sub-canopy browse for wildlife. ➢ Fertilize and irrigate 15 acres of hay meadow from mid-July through mid-September to provide forage for wildlife. ➢ Maintain the livestock exclusion fencing along the tributary to Long Valley Creek and the Meyers Pasture sub-pasture area by checking for damage and repairing as necessary. ➢ Inspect and repair the fencing at the 3 acre Grosscup livestock exclosure.

PLM AREA LICENSE *ANNUAL RENEWALS, 2019/2020* *PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS*		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
SHAMROCK RANCH CONT.	• On or before October 15, 2019, the licensee may request (in writing) up to 15 additional either-sex deer tags to accomplish the authorized harvest. • Issue 6 bull elk tags for the period of July 12, 2019 through December 13, 2019. • Issue 6 antlerless elk tags for the period of September 15, 2019 through December 13, 2019. • On or before October 15, 2019, the licensee may request (in writing) up to 2 additional bull elk tags to accomplish the authorized harvest. • On or before October 15, 2019, the licensee may request (in writing) up to 5 additional antlerless elk tags to accomplish the authorized harvest. • In no case shall the number of elk tags issued be used to exceed the authorized harvest. • The number of tag holders actively hunting shall not exceed the number of elk available to harvest. • Issue 4 bear tags for the period of August 18, 2019 through December 13, 2019 or 1,700 bears are harvested statewide. No cubs or females with cubs will be harvested.	➢ Repair and maintain 2 elk crossings in the Anderson Pasture sub-area. ➢ Limit cattle grazing on approximately 200 acres in the Anderson Pasture sub-area to mid-October through mid-December. ➢ Mechanically hedge 0.125 of an acre of blackberry and/or wild rose brush in the Anderson pasture sub-area to rejuvenate browse for wildlife. ➢ Create 3 new brush piles in the Anderson Pasture sub-area. ➢ Burn 4 mature brush piles in the Grosscup sub-areas to provide ash for deer use. Subsequently seed the burn areas with a legume mix to improve forage for wildlife. ➢ Thin 0.25 acre of dense mature tan oak in the Meyers Pasture sub-area to rejuvenate browse and improve acorn production for wildlife. ➢ Remove 660 feet of old woven wire fencing in the Farley Peak sub-area to reduce wildlife entanglement.
SPRING VALLEY RANCH DEER ZONE A MENDOCINO 4,860 ACRES	***Authorized harvest:*** 24 buck deer forked horn or better and 4 bull elk • Issue 24 buck deer tags for the period of August 1, 2019 through November 30, 2019. • No more than 8 buck deer may be harvested after September 22, 2019. • Issue 4 bull elk tags for the period of August 1, 2019 through November 30, 2019.	➢ Create 2 10 feet x 6 feet brush piles. ➢ Remove and manipulate 0.25 acres of blackberries by tractor, hand, and/or herbicide. Treatment areas will be monitored to determine the most effective method of removal and manipulation. ➢ Mechanically remove with a tractor and by hand 0.75 acres of blackberry and eradicate 0.75 acres of scotch broom and coyote brush to improve wildlife forage. ➢ Repair existing elk crossings as necessary and construct 1 new elk crossing. ➢ Inspect and if necessary repair the 13 previously improved water development projects.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
SPRING VALLEY RANCH CONT.	• On or before October 15, 2019, the licensee may request (in writing) up to 1 additional bull elk tag to complete the authorized harvest.	➢ Develop 1 new spring. Dig out spring and use collector boxes. Pipe water to troughs. ➢ Remove at least 1,000 feet of woven wire cross fencing to reduce wildlife entanglement. ➢ Maintain a 5 acre pond for use by migratory birds and other wildlife, including large mammals. The pond provides year-round water, as well as roosting, feeding, and nesting habitat.
STACKHOUSE RANCH DEER ZONE C3 SHASTA 400 ACRES	***Authorized Harvest:*** 1 buck deer forked horn or better and 1antlerless deer • Issue 2 either-sex deer tags for the period of September 1, 2019 through November 30, 2019. • No more than 1 buck deer may be harvested after October 27, 2019. • No antlerless deer shall be harvested before September 15, 2019.	➢ In Meadows D & E, treat blackberry thickets with herbicide and burn previously treated, decadent blackberry thickets. ➢ Use herbicides to remove other invasive plant species in all meadow areas. ➢ Thin 10 acres of a 165 acre pine plantation. ➢ Encourage regrowth of palatable shrubs by removing decadent manzanita and Scotch Broom from the 2 acre wildlife area near Meadow E. ➢ Enhance 43 acres of conifer habitat by applying appropriate herbicides to noxious weeds.
STEWART RANCH DEER ZONE B1 TRINITY 11,006 ACRES	***Authorized Harvest:*** 36 buck deer forked horn or better and 5 antlerless deer • Issue 36 buck deer tags for the period of August 1, 2019 through November 30, 2019. 10 of those tags shall be donated to apprentice hunters, and 1 shall be donated to a Hunter Education Instructor. • Issue 5 antlerless deer tags for the period of September 15, 2019 through November 30, 2019. • No more than 18 buck deer may be harvested after October 27, 2019. • On or before October 15, 2019, the licensee may request (in writing) up to 15 additional either-sex deer tags to accomplish the authorized harvest.	➢ Maintain areas where encroaching conifers were previously removed by removing regenerating seedlings and young trees from openings and oak-dominated stands. ➢ Replant 4 irrigated food plots (10 acres total) with clover, chicory, and brassica to provide forage for wildlife. ➢ Maintain electric livestock exclusion fencing around all fenced food plots. ➢ Maintain and replace nesting material in 15 wood duck nest boxes. ➢ Maintain 8 water sources (ponds and springs) with cattle exclusion fencing by inspecting and repairing any damaged parts. ➢ Maintain 0.50 mile of livestock exclusion fencing along Kekawaka Creek to improve riparian vegetation by inspecting and repairing any damaged parts.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
STEWART RANCH CONT.	• In no case shall the number of tags issued be used to exceed the authorized harvest. • The number of tag holders actively hunting shall not exceed the number of deer available to harvest.	
STOVER RANCH HUMBOLDT 7,000 ACRES	***Authorized Harvest:*** 4 bull elk and 2 antlerless elk • Issue 4 bull elk tags for the period September 1, 2019 through November 30, 2019. • Issue 2 antlerless elk tags for the period October 1, 2019 through November 30, 2019. • One of the antlerless elk tags will be made available for CDFW to distribute to an Apprentice Hunter through the SHARE Program. The SHARE program will reimburse the PLM for the tag fee, but the PLM will otherwise provide the hunt free of charge	➢ Remove all conifer trees less than 4 inches DBH from at least 11 acres of oak woodland. ➢ Remove all conifer trees less than 12 inches DBH from at least 78 acres of Grassland Core Treatment areas. ➢ Remove all conifer trees less than 8 inches DBH along at least 3,300 linear yards of grassland margins. Treated areas will extend from the grassland margins back to areas dominated by larger conifers.
SUMMER CAMP RANCH DEER ZONE B1 MENDOCINO 38,502 ACRES	***Authorized Harvest:*** 80 buck deer forked horn or better and 1 bull elk • Issue 80 buck deer tags for the period of July 13, 2019 through November 30, 2019. • No more than 40 buck deer may be taken after October 27, 2019. • Issue 1 bull elk tag for the period of July 13, 2019 through November 30, 2019. • On or before October 15, 2019, the licensee may request (in writing) up to 20 additional buck deer tags and 1 additional bull elk tag to accomplish the authorized harvest. • In no case shall the number of tags issued be used to exceed the authorized harvest.	➢ Maintain 3 irrigated wildlife forage areas, totaling 12 acres. ➢ Develop spring at S14 by cleaning out and enlarging water hole for wildlife. ➢ Exclude livestock from a 300 square foot area around 1 spring by installing wildlife-friendly fencing. ➢ Maintain 2 riparian exclusion areas totaling 0.75 acre by repairing any damaged fencing and planting willows inside the 2 enclosures. ➢ Maintain 13 developed springs by checking and repairing any damage. Exclude livestock grazing from July through October. ➢ Remove encroaching conifers less than or equal to 6 inches DBH from at least 10 acres of oak woodlands. ➢ Maintain approximately 7 miles of riparian fencing on the Eel River and repair any damage.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
SUMMER CAMP RANCH CONT.	• The number of deer tag holders actively hunting shall not exceed the number of deer or elk available to harvest.	➢ Maintain a minimum of 10 miles of road to prevent sedimentation into the Eel River system. Road maintenance will generally include grading roads, pulling inside ditches where they exist, shaping the road surface to promote proper drainage, and inspection/repair of drainage facilities such as cross drains and culverts. ➢ Burn between 500-700 acres of brush and grasslands in coordination with CalFire VMP to rejuvenate vegetation and control conifers invading oak woodlands.
TRAVIS RANCH DEER ZONE B1 TRINITY 11,907 ACRES	***Authorized Harvest:*** 15 deer of which no more than 5 may be antlerless deer • Issue 15 either-sex deer tags for the period of July 15, 2019 through November 30, 2019. • Buck deer must be forked horn or better. • No antlerless deer shall be harvested before September 15, 2019. • No more than 7 buck deer may be harvested after October 27, 2019.	➢ Remove encroaching conifers less than or equal to 12 inches DBH from at least 20 acres of oak woodland in Area C. ➢ Treat at least 70 acres of yellow star-thistle with herbicide and biological controls in Areas K and L. ➢ Develop 1 new spring in Area A by installing wildlife-friendly fencing around the natural water collection area and a separate concrete trough for livestock away from the spring.
BAY DELTA REGION		
BUCKEYE RANCH DEER ZONE A SOLANO 3,000+ ACRES	***Authorized Harvest***: 12 buck deer forked horn or better and 4 antlerless deer • Issue 12 buck deer tags for the period of the July 13, 2019 to November 30, 2019. No more than 4 buck may be taken after September 22, 2019. • Issue 4 antlerless deer tags for the period of the July 13, 2019 to November 30, 2019.	➢ Install 3 wildlife guzzlers. ➢ Inspect and maintain on-site wildlife water sites 2 times per year. ➢ High-blade 3-4 acres of chamise-chaparral before July 15, 2019. ➢ Construct 3 piles of chamise-chaparral or other woody vegetation for bird nesting habitat. Piles should measure at least 15 feet x 15 feet wide x 4 feet tall. ➢ Disk and plant 4 1 acre wildlife habitat plots. The planting mix should contain a mixture of forbs such as clover. NOTE: safflower requires reliable water throughout the growing season; consider drought tolerant alfalfa.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
CONNOLLY AND CORRAL HOLLOW RANCH SAN JOAQUIN 11,758 ACRES	***Authorized Harvest:*** 1 bull elk • Issue 1 bull elk tag for the periods of July 15, 2019 through September 15, 2019 and November 15, 2019 through December 15, 2019.	➢ Provide 800 acres of grasslands on the Connolly Ranch for exclusive use by elk from July through March. ➢ Provide 480 acres of grasslands on the Corral Hollow Ranch for exclusive use by elk. ➢ Continue to implement a rotational cattle grazing regime to provide adequate forage for elk. ➢ Fell 3 acres of gray pines to provide additional forage for elk and to increase cover for small mammals, birds and reptiles. Trees will be felled outside bird breeding season (March 1 – June 30) and any trees with birds of prey nests shall be avoided altogether.
CENTRAL REGION		
ALEXANDER RANCH DEER ZONE A MONTEREY 786 ACRES	***Authorized Harvest:*** 1 bull elk, 2 antlerless elk and 1 buck deer forked horn or better • Issue 1 bull elk tag for the period of July 2, 2019 through December 31, 2019. • Issue 2 antlerless elk tags for the period of August 15, 2019 through December 31, 2019. • Issue 1 buck deer tag for the period July 2, 2019 through November 30, 2019.	➢ Maintain existing springs, troughs and reservoirs to provide water for wildlife. ➢ Limit cattle stocking on the property to 75 animals to enhance and provide habitat and forage for wildlife. ➢ Create 5 brush piles for use by wildlife. ➢ Brush crush 5 acres of old growth brush to stimulate growth of new wildlife forage (elk and deer). ➢ Conduct 2 elk counts per year (count deer when possible).
AVENALES RANCH SAN LUIS OBISPO COUNTY 11,300 ACRES	***Authorized Harvest:*** 4 bull elk, 3 antlerless elk • Issue 3 bull elk tags for the period of July 15, 2019 through December 31, 2019. • Issue 1 antlerless elk tag for the period of September 15, 2019 through December 31, 2019. Note: The PLM is not requesting their full approved allocation (“authorized harvest”) of tags.	➢ Maintain and repair wildlife projects built in 2013. ➢ Install wildlife escape ramps in 5 water troughs to make them more wildlife friendly. ➢ Install 10 brush piles around the Los Macho Creek water trough to enhance escape cover for wildlife. ➢ Participate in the 2nd year of a mountain lion study with the Department of Fish and Wildlife. ➢ Fence off spring area in “35 Canyon” from cattle to allow for collection of water exclusively for wildlife.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
CAMP 5 OUTFITTERS - ROTH RANCH PLM DEER ZONE A MONTEREY/SAN LUIS OBISPO 5,400 ACRES	***Authorized Harvest:*** 2 bull elk,1 antlerless elk, 6 buck deer forked horn or better, and 3 antlerless deer • Issue 2 bull elk tags for the period of July 2, 2019 through December 31, 2019. • Issue 1 antlerless elk tag for the period of August 15, 2019 through December 31, 2019. • Issue 6 buck deer tags for the period of July 2, 2019 through November 30, 2019. • Issue 3 either-sex deer tags for the period of July 2, 2019 through November 30, 2019.	➢ Clear 30 acres of old growth brush to stimulate growth of new forage for wildlife. ➢ Reseed the 30 acres cleared area with barley or other suitable cover crop for wildlife use. ➢ Plant 75 acres of barley for use by wildlife. ➢ Plant 75 acres of wheat for use by wildlife. ➢ Replace leaking tank at Big Pine with a 2,500 gallon poly tank to better provide water for wildlife. ➢ Install 13,000 feet of new waterline on the Ray to provide water for wildlife. ➢ No grazing allowed in the 40 acre riparian area. ➢ Collect and interpret trail camera data. ➢ No grazing on the Fowler or Roth ranches.
CARNAZA RANCH SAN LUIS OBISPO COUNTY 8,475 ACRES	***Authorized Harvest***: 3 bull elk and 3 antlerless elk • Issue 3 bull elk tags for the period of July 15, 2019 through December 31, 2019. • Issue 3 antlerless elk tags for the period of August 15, 2019 through December 31, 2019.	➢ Plant 100 acres of barley to provide food and cover for wildlife. ➢ Keep water troughs full year round to provide water for wildlife. ➢ Plant 10 trees to enhance wildlife habitat. ➢ Build 3 brush piles to enhance escape cover for wildlife.
CARRIZO RANCH SAN LUIS OBISPO COUNTY 11,040 ACRES	***Authorized Harvest***: 3 bull elk and 2 antlerless elk • Issue 3 bull elk tags for the period July 15, 2019 through December 31, 2019. • Issue 2 antlerless elk tags for the period August 15, 2019 through December 31, 2019.	➢ Plant 5 trees around Lookout Pond for use by wildlife. ➢ Plant 100 acres of barley for wildlife in the Lewis Pasture. ➢ Finish removal of house and outbuildings at Turkey Camp and establish irrigation system for plantings.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
CHIMNEY ROCK RANCH SAN LUIS OBISPO COUNTY 6,500 ACRES	***Authorized Harvest***: 3 bull elk and 10 buck deer forked horn or better • Issue 3 bull elk tags for the period July 15, 2019 through December 31, 2019. • Issue 16 buck deer tags to take no more than 10 buck deer for the period beginning with the opening day of archery season 2019 through November 30, 2019. • At the request of the licensee on or before October 26, 2019, the licensee may request an addition of 4 deer tags to accomplish the authorized harvest.	➢ Construct an elk crossing in the beet field and possibly another in the horse pasture. ➢ Defer cattle from the "Lake" pasture from mid-spring through mid-summer to allow cover for ground nesting birds to grow out and in turn enhance forage for wildlife. ➢ Continue to monitor/repair and/or improve all water sources. ➢ Construct 10 brush piles for use as cover for wildlife. ➢ Apply fertilizer to stressed pasture areas of the ranch to improve forage quantity and quality for wildlife. ➢ Control squirrels on 3 dams (San Marcos, Sapo Pinto, Bull Pasture) and monitor for further damage.
CLARK AND WHITE RANCHES SAN LUIS OBISPO COUNTY 5,660 ACRES	***Authorized Harvest:*** 2 bull elk and 2 antlerless elk • Issue 1 bull elk tag for the period of July 15, 2019 through December 15, 2019. • Issue 1 antlerless elk tag for the period of August 15, 2019 through December 15, 2019. Note: Clark and White Ranches are not requesting their full allocation of tags.	➢ Plant 1,000 acres of barley for use by elk and other wildlife. ➢ Repair 1 dam to increase standing water and enhance riparian/marsh habitats. ➢ Plant 100 willow stalks around dam to enhance riparian habitat for use by wildlife.
DEFRANCESCO/ EATON RANCH A DEER ZONE MERCED COUNTY 4,149 ACRES	***Authorized Harvest:*** 10 buck deer forked horn or better, 2 bull elk, and 1 antlerless elk • Issue 10 buck deer tags for the period of July 13, 2019 through November 30, 2019. • Issue 3 bull elk tags for the period July 13, 2019 through November 30, 2019. • Issue 3 antlerless elk tag for the period of September 14, 2019 through November 30, 2019.	➢ Eliminate cattle grazing on APNs 087-070-011 and 087-070-013 between May 15, 2019 and December 15, 2019. ➢ Maintain water troughs at Main Spring, Deer Camp, Laurel Spring, and Hay Barn for wildlife. ➢ Remove decadent juniper in Dry Lakes area.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
D – RAFTER "L" RANCH, LLC SAN LUIS OBISPO COUNTY 3,156 ACRES	***Authorized Harvest:*** 2 bull elk • Issue 2 bull elk tags for the period of July 15, 2019 through December 31, 2019. • The licensee may request (in writing) up to 2 additional bull elk tags to complete the authorized harvest.	➢ Maintain existing brush piles by adding new brush to enhance cover for wildlife. ➢ Plant 10 acres of barley to enhance cover and forage for wildlife. ➢ Install 1 goose-nesting platform at Ponds 1 and 3. ➢ Install either 2 owl, bat or bluebird/swallow boxes along perimeter fencing near alfalfa fields.
HARTNELL RANCH DEER ZONE A MONTEREY 4,600 ACRES	***Authorized Harvest:*** 1 bull elk, 2 antlerless elk, and 2 buck deer forked horn or better • Issue 1 bull elk tag for the period of July 2, 2019 through December 31, 2019. • Issue 2 antlerless elk tags for the period August 15, 2019 through December 31, 2019. • Issue 2 buck deer tags for the period of July 2, 2019 through November 30, 2019.	➢ Brush crush 10 acres of old growth brush to stimulate new growth for wildlife forage (elk and deer). ➢ Maintain existing springs, troughs and reservoirs to provide water for wildlife. ➢ Create 8 brush piles for use by wildlife. ➢ Limit cattle stocking on the property to 250 animals to maintain and reserve habitats for wildlife. ➢ Conduct 3 annual counts for elk and deer.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
INDIAN VALLEY CATTLE COMPANY (LOMBARDO RANCH) DEER ZONE A MONTEREY 12,500 ACRES	***Authorized Harvest:*** 3 bull elk, 2 antlerless elk, and 4 buck deer forked horn or better • Issue 3 bull elk tags for the period of July 15, 2019 through December 31, 2019. • Issue 2 antlerless elk tags for the period of August 15, 2019 through December 31, 2019. • Issue 4 buck deer tags for the period of July 2, 2019 through November 30, 2019.	➢ Burn or "brush crush" 3-5 acres of chaparral. ➢ Construct 4-6 brush piles for use by wildlife. ➢ Maintain cattle stocking on the property at approximately 300 animals to provide forage and reduce competition with wildlife. ➢ Plant 350 acres of barley. ➢ Rotationally graze all pastures and rest others thus allowing increased wildlife access. ➢ Place 1 new wildlife accessible water trough. ➢ No grazing in the Big Sandy creek (appx. 300 acres fenced). ➢ Rotate cattle grazing of volunteer barley to facilitate wildlife use. ➢ Rehabilitate 25-50 acres of abandoned farmland to improve habitat value. ➢ Maintain and operate 16 ground level water access points.
LEWIS RANCH SAN BENITO 512 ACRES	***Authorized Harvest***: 1 bull elk, 1 antlerless elk. (1 bull elk tag available every <u>other</u> year) • Issue 1 antlerless elk tag for the period of August 15, 2019 through December 31, 2019.	➢ Maintain perennial water for wildlife in 4 guzzlers. ➢ Keep 512 acres free of cattle grazing to provide high quality habitat for tule elk, quail, and other wildlife. ➢ Maintain perennial water for wildlife in 4 guzzlers. ➢ Maintain 12 brush piles by adding to them as needed. ➢ Disc 5 fields, seed with barley and fertilize to provide supplemental food and cover for wildlife. ➢ Clean and repair 4 existing owl boxes for the upcoming nesting season. ➢ Disc 1 field in spring, seed with safflower and fertilize to provide supplemental food and cover for wildlife. ➢ Empty and clean troughs, check water flow and wildlife escape ramps – repair any damaged parts. ➢ Check 4 bat boxes.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
LONE RANCH DEER ZONE A SAN BENITO 12,500 ACRES	***Authorized Harvest:*** 3 bull elk, 2 antlerless elk and 4 buck deer forked horn or better • Issue 3 bull elk tags for the period of August 1, 2019 through December 31, 2019. • Issue 2 antlerless elk tags for the period of August 15, 2019 through December 31, 2019. • Issue 4 buck deer tags for the period of August 1, 2019 through November 30, 2019.	➢ Replace the old metal trough in the McCoy pasture to improve water availability for wildlife. ➢ Rebuild the fence in the lower McCoy/Critter ridge area (1,200 acre) to allow management to benefit elk. ➢ Brush crush in the McCoy pasture to stimulate growth of new forage for wildlife. ➢ Construct temporary hi-visibility fencing in the Local flat area (500 acres) to manage grazing to preserve forage for elk.
MORISOLI RANCH MONTEREY AND SAN BENITO COUNTIES 14,700 ACRES	***Authorized Harvest:*** 4 bull elk and 4 antlerless elk • Issue 3 bull elk tags for the period of July 1, 2019 through December 31, 2019. • Issue 3 antlerless elk tags for the period August 15, 2019 through December 31, 2019.	➢ Build and install 1 elk crossing. ➢ Construct 5 brush piles for use by wildlife. ➢ Develop 1 new water source for wildlife. ➢ Convert 1 existing water source so that it is wildlife accessible. ➢ Plant 10 acres of forage mix for use by wildlife. ➢ Clear 5 acres of old growth brush to stimulate new forage growth for use by wildlife. ➢ Seed cleared areas with barley/vetch mixture to provide additional forage for wildlife. ➢ Build and install 1 owl nest box. ➢ Develop and install 1 elevated raptor nesting location.
PEACHTREE RANCH MONTEREY 32,104 ACRES	***Authorized Harvest:*** 4 bull elk and 2 antlerless elk • Issue 4 bull elk tags for the period of July 15, 2019 through December 31, 2019. • Issue 2 antlerless elk tags for the period of August 15, 2019 through December 31, 2019.	➢ Spray strips with Round-up around ground level water sources in late spring to promote the regrowth of turkey mullein and dove weed to provide forage for dove, quail, and other small birds. ➢ Install 1 ground level water source for quail and other small animals. ➢ Perform 10 to 12 detailed counts of the elk on the property. ➢ Build and install 6 bird nesting boxes. ➢ Monitor and report the height of vegetation by pasture after steers are shipped. ➢ Install 8 escape ladders in water troughs.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
RANCHO LA CUESTA DEER ZONE A SAN BENITO 4,000 ACRES	***Authorized Harvest:*** 3 bull elk, 1 antlerless elk and 4 buck deer forked horn or better • Issue 4 bull elk tags (to take no more than 3 bull elk) for the period of July 15, 2019 through December 31, 2019. • Issue 1 antlerless elk tag for the period of August 15, 2019 through December 31, 2019. • Issue 2 buck deer tags for the period of July 15, 2019 through November 30, 2019. Note: Ranch La Cuesta is not requesting their full allocation of tags.	➢ Plant 5 acres of grasses and legumes to provide high quality food for elk and deer. ➢ Clean out and maintain water points on the ranch to provide water for wildlife. ➢ Maintain a 2,530 acre cattle-free refuge on the upper portion of the ranch for exclusive use by wildlife. ➢ Burn or mechanically manipulate 5 acres of decadent chaparral to stimulate growth of quality browse for wildlife. ➢ Build 5 brush piles for use by wildlife.
SKY ROSE RANCH, LLC. PLM DEER ZONE A MONTEREY 14,039 ACRES	***Authorized Harvest:*** 4 buck deer forked horn or better and 2 antlerless deer • Issue 4 buck deer tags for the period of July 1, 2019 through November 30, 2019. • Issue 2 antlerless deer tags for the period of July 1, 2019 through November 30, 2019.	➢ Install 4 new wildlife watering sources in the northern portion of the ranch. ➢ Construct 10 brush piles in appropriate areas to enhance wildlife habitat. ➢ Install any combination of blue bird nesting boxes or bat roosting boxes totaling 10 units at locations to be determined on the ranch. ➢ Identify, remove, and dispose of mature tree of heaven; seed with site-appropriate native seed mix. ➢ Plant 10 acres of barley and grass mix to provide forage and cover for wildlife.

PLM AREA LICENSE ANNUAL RENEWALS, 2019/2020 PROPOSED SEASONS, HARVESTS, AND HABITAT IMPROVEMENTS		
PLM Area	**Proposed Season and Harvest**	**Habitat Improvement Program**
TEMBLOR RANCH SAN LUIS OBISPO AND KERN COUNTIES 30,000 ACRES	***Authorized Harvest***: 9 bull elk, 10 antlerless elk • Issue 9 bull elk tags for the period July 15, 2019 through December 31, 2019. • Issue 10 antlerless elk tags for the period August 15, 2019 through December 31, 2019. • At the request of the licensee on or before November 1, 2019, the licensee may request in writing up to 9 additional bull tags and 10 additional antlerless tags to accomplish the authorized harvest of no more than 19 elk.	➢ Plant 100 acres of barley for use by wildlife. ➢ Plant 5 fruit trees & 5 shade trees for use by wildlife. ➢ Install 1 water trough to provide water for wildlife. ➢ Maintain existing water systems and sources for wildlife.
TRINCHERO RANCH SAN BENITO 4,452 ACRES	***Authorized Harvest:*** 3 bull elk, 1 antlerless elk • Issue 2 bull elk tags for the period of July 15, 2019 through December 31, 2019. Note: The Trinchero Ranch is choosing not to request their full allocation of elk tags this year.	➢ Limit cattle grazing on approximately 4,000 acres in Black and Red Mountain pastures from December through May. ➢ Control invasive Tamarisk along Red Mountain road to enhance wildlife habitat. ➢ Construct 4-6 brush piles for use by wildlife. ➢ Plant dryland range seed mix in previously brush cleared areas to enhance wildlife forage opportunity.

California Fish and Game Commission

Alphabetical Listing of PLM Properties for Annual Licenses and Area Plans for April 17, 2019 Meeting

Approve annual 2019/2020 PLM area plans for:

(A) 3D Ranch (Tehama County)

(B) Alexander Ranch (Monterey County)

(C) Alexandre Ecodairy Farms PLM (Del Norte County)

(D) Amann Ranch (Mendocino County)

(E) Avenales Ranch (San Luis Obispo County)

(F) Big Lagoon (Humboldt County)

(G) Buckeye Ranch (Solano County)

(H) Camp 5 Outfitters - Roth Ranch PLM (Monterey/San Luis Obispo Counties)

(I) Carley Ranch (Mendocino County)

(J) Carnaza Ranch (San Luis Obispo County)

(K) Carrizo Ranch (San Luis Obispo County)

(L) Chimney Rock Ranch (San Luis Obispo County)

(M) Christensen Ranch (Mendocino County)

(N) Clark and White Ranches (San Luis Obispo County)

(O) Connolly and Corral Hollow Ranch (San Joaquin County)

(P) Cottrell Ranch (Humboldt County)

(Q) D – Rafter “L” Ranch, LLC (San Luis Obispo County)

(R) DeFrancesco/Eaton Ranch (Merced County)

(S) Diamond C Outfitters (Humboldt County)

(T) Elk Creek Ranch (Mendocino County)

(U) Hartnell Ranch (Monterey County)

(V) Hunter Ranch (Humboldt County)

(W) Indian Valley Cattle Company (Lombardo Ranch) (Monterey County)

(X) Klamath PLM (Humboldt County)

(Y) Lewis Ranch (San Benito County)

(Z) Lone Ranch (San Benito County)

(AA) Miller-Eriksen Ranch (Mendocino County)

(BB) Morisoli Ranch (Monterey/San Benito Counties)

(CC) Peachtree Ranch (Monterey County)

Author: *Sergey Kinchak*

(DD) R Wild Horse Ranch (Tehama County)
(EE) Rainbow Ridge PLM (Humboldt County)
(FF) Rancho La Cuesta (San Benito County)
(GG) Roberts Ranch (Modoc County)
(HH) Sanhedrin Ranch (Mendocino County)
(II) Seven Springs Ranch (Mendocino County)
(JJ) Shamrock Ranch (Mendocino County)
(KK) Sky Rose Ranch, LLC. PLM (Monterey County)
(LL) Spring Valley Ranch (Mendocino County)
(MM) Stackhouse Ranch (Shasta County)
(NN) Stewart Ranch (Trinity County)
(OO) Stover Ranch (Humboldt County)
(PP) Summer Camp Ranch (Mendocino County)
(QQ) Temblor Ranch (San Luis Obispo/Kern Counties)
(RR) Travis Ranch (Trinity County)
(SS) Trinchero Ranch (San Benito County)

FGC - 670.1 (3/94)

A PETITION TO THE STATE OF CALIFORNIA FISH AND GAME COMMISSION

For action pursuant to Section 670.1, Title 14, California Code of Regulations (CCR) and Sections 2072 and 2073 of the Fish and Game Code relating to listing and delisting endangered and threatened species of plants and animals.

I. SPECIES BEING PETITIONED:

Common Name: San Bernardino Kangaroo Rat

Scientific Name: (*Dipodomys merriami parvus*)

II. RECOMMENDED ACTION:

(Check appropriate categories)

a. List X b. Change Status ☐

As Endangered X from _____

As Threatened ☐ to _____

Or Delist ☐

III. AUTHORS OF PETITION:

Name: Michael White, PhD; Gerald Braden; Dan Silver, MD

Address: c/o Endangered Habitats League, Attn: Dan Silver

8424 Santa Monica Blvd, Suite A 592, Los Angeles, CA 90069-4267

Phone Number: (213) 804-2750

I hereby certify that, to the best of my knowledge, all statements made in this petition are true and complete.

Signatures: _____

Date: March 14, 2019

PETITION TO THE STATE OF CALIFORNIA FISH AND GAME COMMISSION SUPPORTING INFORMATION FOR

San Bernardino Kangaroo Rat	***(Dipodomys merriami parvus)***
Common Name	**Scientific Name**

EXECUTIVE SUMMARY

Based on a scientific review of its distribution and status, this petition requests that the San Bernardino kangaroo rat (*Dipodomys merriami parvus* [SBKR]) be listed as Endangered by the California Fish and Wildlife Commission. SBKR is a heteromyid rodent that historically occurred in alluvial fan scrub habitats associated with active floodplains across over 325,000 acres of the San Bernardino and San Jacinto/Perris valleys. Habitat quality and SBKR densities (varying from 1-30 individuals/acre) are higher in floodplains with active fluvial processes and sandy or gravelly soils and substrates, generally supporting open-structured alluvial fan scrub vegetation, that are connected to nearby upland and/or less frequently inundated terraces that serve as flood refugia. Due to extensive urban, commercial, and agricultural development of these areas, SBKR is currently restricted to about 5% of this historical range, and much of this remaining habitat is highly fragmented and degraded by indirect effects. Critically, extensive channelization and water management activities have irreversibly degraded the natural fluvial processes that historically maintained SBKR habitat. Climate change is expected to exacerbate adverse impacts to SBKR.

In response to the dramatic loss of habitat experienced by SBKR, it was listed as Endangered by the U.S. Fish and Wildlife Service (Service) in 1998. Since its listing, however, its status has continued to decline. The Service considers seven populations extant in 1998 to be extirpated, and SBKR is now confined to three discontinuous blocks of habitat: Lytle Creek/Cajon Wash, Santa Ana River, and San Jacinto River. Although the Service designated 33,295 acres of Critical Habitat in 2002, it considers only 16,300 acres of that to be currently functioning for SBKR (but not necessarily occupied by SBKR). Since 1998 we estimate that over 11,000 acres of potential SBKR habitat (regardless of its quality or occupation) has been lost even when regulated under the Endangered Species Act. Since the 1998 federal listing, federal permitting allowed the fundamental hydrologic basis for persistence of the largest SBKR population to be lost, and mitigation measures performed under federal consultations have been ineffective.

SBKR historical habitat occurs in naturally functioning alluvial fan systems, which are highly dynamic, constantly shifting networks of braided channels. Habitat quality is frequently reworked through scouring and alluvium deposition during fluvial events, and subsequent vegetation establishment and succession on floodplain terraces. SBKR population persistence relies on the availability of higher elevation floodplain terraces to escape lethal flooding events. Individuals from these higher elevation areas can repopulate reworked habitats once suitable.

Much of the remaining SBKR habitat has been adversely modified by channelization, flood control, and water management activities such that the natural hydrologic regimes of the alluvial fan systems, that historically maintained SBKR habitat, are now gone and/or much of the higher elevation refugia available to the species are physically disconnected from remaining SBKR

populations. For example, the prospect for long-term persistence of SBKR and its habitat in the Santa Ana River area is poor because of the construction of Seven Oaks Dam (SOD), and nonnative plant invasion and vegetation type conversion limit habitat quality and persistence in the Plunge Creek area. Likewise, probability of persistence is poor in the upper reaches of City Creek and in Mill Creek habitats as a result of flood control operations and suburban development. Habitat along Lytle Creek now largely exists within levee-modified or channelized floodplains which are subject to high stream velocity and scouring events relative to historical conditions, exposing SBKR populations to potentially catastrophic flood events with little available refugia. The cumulative impacts of habitat loss and land-use changes jeopardize the continued existence of the species under existing conditions, yet new development proposals further threaten important blocks of SBKR habitat that still have functioning fluvial processes.

The primary threat to SBKR is the direct impact of past and present modification and destruction of its habitat. A new range-wide genetic assessment of SBKR confirms these negative trends in habitat and population loses for conservation and recovery of the species. SBKR in the Lytle/Cajon creeks, Santa Ana River, and San Jacinto River/Bautista Creek blocks of habitat have low effective population sizes. The genetic structure of the three populations is unique, reflecting their relatively recent isolation from each other due to loss of connectivity. The conservation genetics research by the San Diego Zoo Institute for Conservation Research confirm the isolation, low genetic diversity, and small effective population sizes and recommend "preventing further impacts to SBKR populations and increasing numbers."

Since the federal listing, mitigation efforts for past impacts to SBKR have not successfully compensated for the loss of suitable, as well as occupied, SBKR habitat. Yet, at this time, major additional loss of SBKR habitat is proposed and is being reviewed by the Service. For example, the City of Rialto approved the Lytle Creek Ranch development in 2010 and the project is undergoing an Endangered Species Act section 7 consultation. According to the Service, ~1,920 acres of the proposed Lytle Creek Ranch project falls within SBKR Critical Habitat and ~1,191 acres of that (62%) would be adversely impacted by the project. Mitigation measures proposed by the project applicant include the same unproven measures that have not adequately mitigated the loss of SBKR habitat in the past. Furthermore, the project would eliminate the vital terrace refugia habitat that remains along Lytle Creek. Given the negative consequences to SBKR from the loss of hydrologic functions on the Santa Ana River due to the operation of the SOD, the loss of additional functional, SBKR-occupied habitat on Lytle Creek would likely be catastrophic to the long-term persistence of SBKR.

An objective look at SBKR status, trends, and conservation needs based on these negative trends is essential. Innovative and creative conservation actions are needed, based upon an assessment of what has not worked in the past and what has promise in the future. While the federal listing is not providing these functions, the State of California is well suited to do so. Furthermore, the tools currently available to the State—Streambed Alteration Agreements and the CEQA comment process—are either inherently limited in scope (the former) or have proven ineffective (the latter). For example, recommendations offered by the California Department of Fish and Wildlife during the Lytle Creek Ranch CEQA process were ignored by the lead agency.

State listing will also remedy a serious limitation in the federal system that has contributed to SBKR decline. Due to proximity of SBKR habitat to river systems, federal permitting for SBKR impacts typically occurs via section 7 consultations (with resulting Biological Opinions) requested by the Army Corps of Engineers in association with impacts to Waters of the United States, rather than through Habitat Conservation Plans under section 10 of the ESA.

Unlike a Habitat Conservation Plan, there is no general requirement in a section 7 consultation to minimize and mitigate the impacts of the take of an endangered species to the maximum extent practicable. Indeed, unless the extreme case of jeopardy to the very existence of a federally endangered species is reached, *no mitigation whatsoever is required* (per the Endangered Species Consultation Handbook, "It is not appropriate to require mitigation for the impacts of incidental take."). Rather, section 7 seeks to minimize take as long as such measures are "reasonable and prudent" and "minor" in extent. Under these circumstances, it is not surprising that mitigation for impacts to SBKR under the federal listing has failed to compensate for the substantial loss of habitat that has occurred.

To the contrary, under the California Endangered Species Act (CESA), project applicants would not be able to circumvent providing effective mitigation. Under CESA, take must be minimized and "fully mitigated." Elevating the regulatory status of SBKR in California to Endangered will provide the Department of Fish and Wildlife a heightened level of review and regulatory authority to arrest the decline of SBKR. Only with sufficient mitigation on all projects can the negative trends in SBKR population begin to be reversed. U.S. Army Corps regulations are no substitute, as its focus is on wetlands and Waters of the U.S. rather on the surrounding uplands that are vital to SBKR.

Finally, there is strong and ample evidence of the politicization of federal regulatory agencies under the current Executive Administration and the ascent of an anti-science and anti-regulatory agenda. Scientific panels have been disbanded and there is open hostility to objective science, such as in the realm of climate change. State listing is a necessary backstop to the disregard of law and science by federal environmental agencies under the current Administration.

For these reasons, described more fully below, listing by the Commission is imperative given the failures of the federal listing as an alternative regulatory mechanism and the gravity of impending threats.

1. POPULATION TRENDS

The San Bernardino kangaroo rat (*Dipodomys merriami parvus*), or SBKR, is a heteromyid rodent that historically occurred in alluvial fan scrub associated with active floodplains of the San Bernardino and San Jacinto/Perris valleys (McKernan 1997). Because of extensive urban, commercial, and agricultural development, <5% of SBKR's historical habitat was occupied by 2008 (USFWS 2009). Much of this remaining habitat is highly fragmented and degraded, and more than half is considered non-functional with low long-term habitat value (USFWS 2018).

The density of SBKR, generally 1-30 individuals/acre (McKernan 1997), is controlled by local habitat conditions, which change and shift spatially and temporally in response to flooding and fluvial processes. Areas with natural fluvial processes support higher SBKR abundances than areas where these processes have been modified or eliminated (McKernan 1997, USFWS 2009). Channel-floodplain connectivity and fluvial processes have been significantly modified in the region, and SBKR populations are now present at lower densities where habitat quality has declined. As the understanding of trends in abundance is poor, the dramatic loss and fragmentation of the species' habitat, rather than a population abundance trend per se, is the best descriptor of SBKR's status and need for California Endangered Species Act (CESA) protection.

2. RANGE AND DISTRIBUTION

Historical range/abundance

The San Bernardino kangaroo rat historically occurred in alluvial fan habitats in two broad geographic areas: (1) floodplain terraces at the bases of the San Gabriel and San Bernardino mountains in the northern portion of the San Bernardino Valley, and (2) floodplain terraces in the San Jacinto, Perris, and Menifee valleys at the base of the San Jacinto Mountains (Figure 1, McKernan 1997). McKernan (1997) estimated a historical range of more than 325,000 acres of alluvial floodplains, but by the 1930s only about 28,000 acres of its habitat remained. In the northern portion of its range, habitat extended from the base of the Cajon Pass (Cajon and Lytle creeks), west to San Antonio and Cucamonga creeks, south along the Santa Ana River floodplain to the Jurupa Mountains and Reche Canyon, and east to terraces along Mill Creek and the upper Santa Ana River. In the southern portion of its range, habitat extended from the upper San Jacinto River and Bautista Creek, north along the San Jacinto River to the northern Moreno Valley, and southwest to the Menifee and Paloma valleys. By the time serious investigations of SBKR status were initiated, over 90% of its habitat had already been eliminated.

Range at time of Federal ESA listing (1998) and Critical Habitat designation (2002)

McKernan (1997) prompted the U.S. Fish and Wildlife Service (Service) to emergency-list the SBKR as Endangered. In the final rule for the listing, the Service estimated that SBKR was restricted to a mosaic of 13,193 acres of its historical potential habitat but occupied only 9,797 acres (USFWS 1998) primarily in three locations: Santa Ana River (3,861 acres), Lytle Creek and Cajon Wash (5,161 acres), and San Jacinto River (775 acres) (Table 1). In the emergency listing, the Service (1998) also estimated smaller amounts of habitat at City Creek (20 acres), Reche Canyon (5 acres), Etiwanda alluvial fan (5 acres), and South Bloomington (2 acres).

Figure 1. Historical range of San Bernardino kangaroo rat, all known trap locations, and trap locations from 2008-2018 (from USFWS 2018).

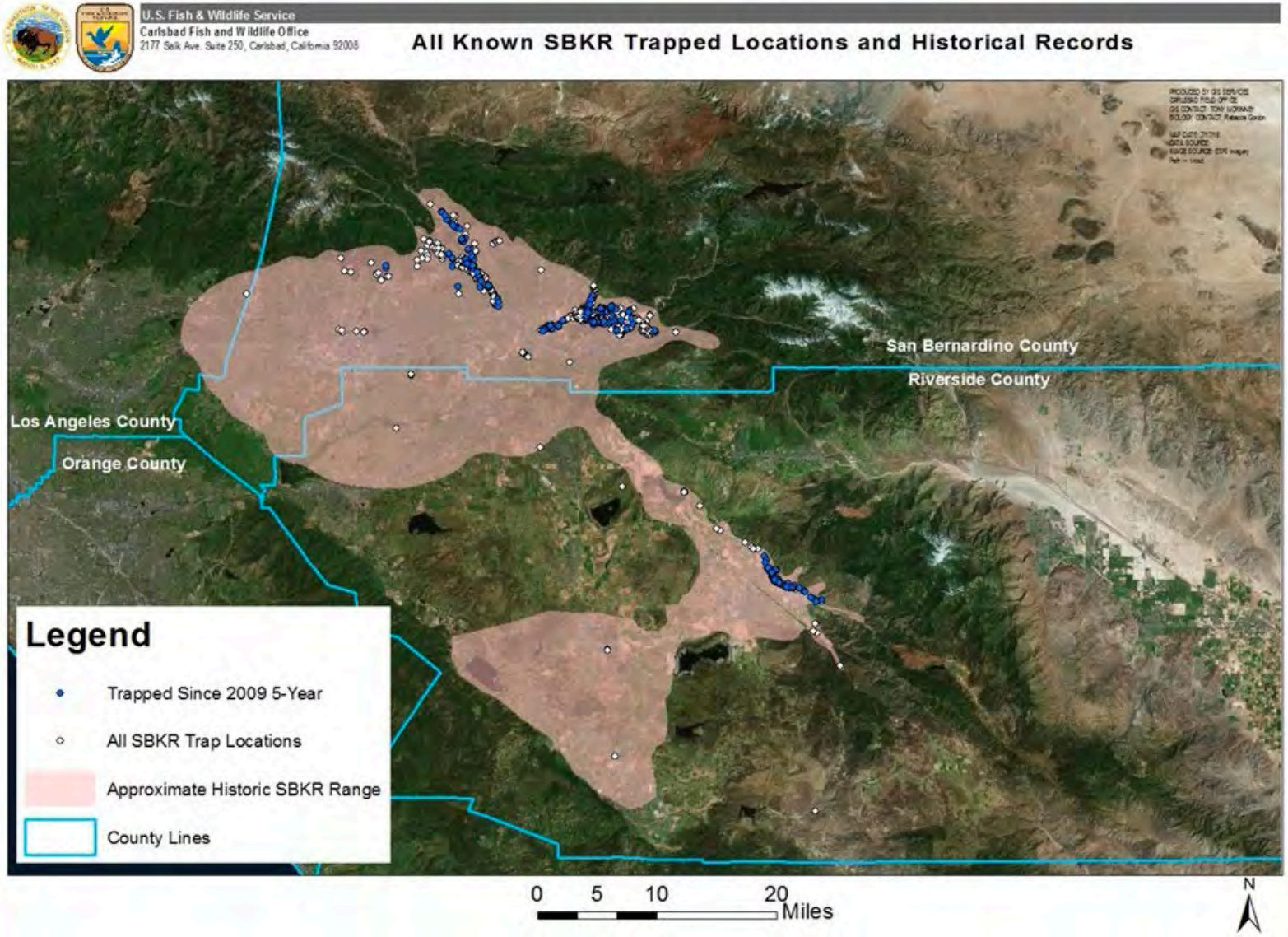


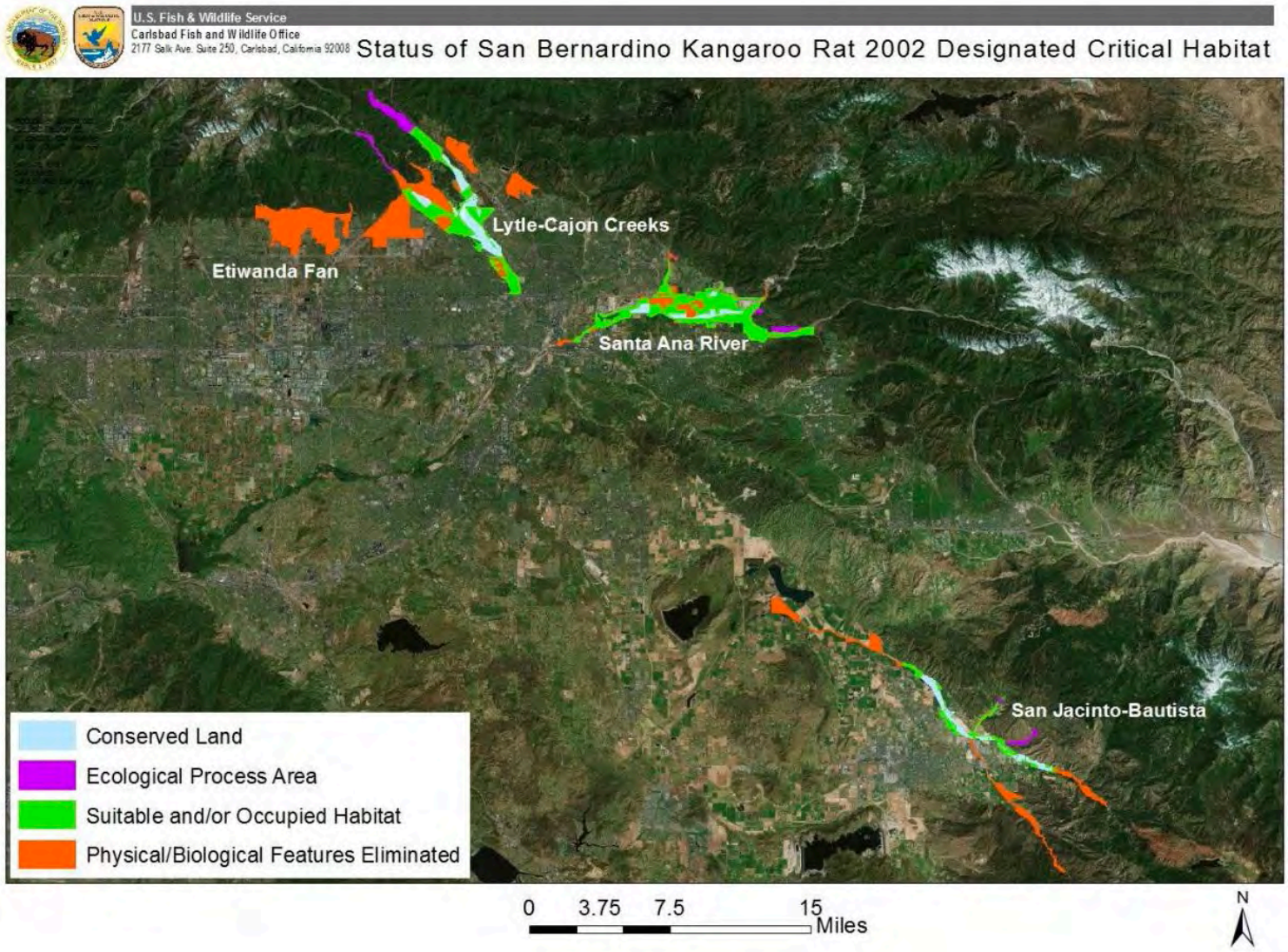
Table 1. U.S. Fish and Wildlife Service's estimates of area of SBKR habitat (acres) at time of federal listing (1998), area of Designated Critical Habitat (2002), and functioning habitat remaining in 2018.

Unit	Potential Habitat Estimated at Listing (1998[1])	Designated Critical Habitat (2002[2])	Estimated Functioning Habitat (2018[3])
Etiwanda Alluvial Fan	Extant	4,820	Extirpated[3]
Lytle Creek/Cajon Wash	6,967	13,970	6,471
Santa Ana River	5,224	8,935	7,426
San Jacinto River	1,002	5,565	2,403
Bautista Creek	Part of San Jacinto R.	Part of San Jacinto R.	Extirpated[3]
Cable Creek	Part of Lytle/Cajon	Part of Lytle/Cajon	Extirpated[3]
Devil's Canyon	Part of Lytle/Cajon	Part of Lytle/Cajon	Extirpated[3]
City Creek	Extant	Part of Santa Ana R.	Extirpated[3†]
Reche Canyon	Extant	Not designated	Extirpated[4]
South Bloomington	Extant	Not designated	Extirpated[4]
Estimated Totals	**13,193[5]**	**33,295 (10,969[6])**	**16,300[7]**

[1] USFWS 1998
[2] USFWS 2002a
[3] USFWS 2018
[4] Extirpated by 2008 (USFWS 2009)
[5] A total of 3,396 acres of the 13,193 acres of the potential habitat was considered to "have too much cover or is otherwise degraded" to support SBKR.
[6] A total of 33,295 acres have been designated as Critical Habitat for SBKR (USFWS 2002a), but the Service (USFWS 2009) considered 10,969 acres of this to be "much of the remaining occupied habitat" at the time.
[7] Habitat considered "currently functioning" may not necessarily be occupied by SBKR.
[†] Refers to City Creek reach upstream of Highland Ave.

Prior to designation of Critical Habitat (USFWS 2002a), development, agriculture, stream channelization, management of flow and associated edge effects destroyed or degraded large portions of historical habitat in western San Bernardino Valley and Moreno, Perris, and Menifee valleys. In the final Critical Habitat rule (USFWS 2002a), the Service estimated the species' range (not all occupied) was at least 32,480 acres within the 33,295 acres of Critical Habitat, but some areas supported low abundance populations with a low likelihood of long-term sustainability in 2002 (e.g., Etiwanda fan; Cable Canyon; Devil Creek; northeast Fontana). Remaining habitat occurred in four larger disjunct blocks (Figure 2, Table 1): Etiwanda Fan (including Deer/Day/Etiwanda creeks), Lytle Creek/Cajon Wash, Santa Ana River/City Creek/Plunge Creek/Mill Creek, and San Jacinto River/Bautista Creek; and two small disjunct tracts: Cable Creek and Devil Creek (tributaries of Cajon Wash). This represents <5% of historical habitat that once occurred in large tracts of naturally functioning, interconnected patches. Over 90% of this remaining habitat occurred in two disjunct blocks: Lytle Creek/Cajon Wash and Santa Ana River, which were fragmented internally by development, mining, highways, and water management infrastructure.

Figure 2. Critical Habitat for San Bernardino kangaroo rate (USFWS 2002a, 2018) and the status of SBKR habitat within those units.



Range/abundance at 5-year review (USFWS 2009)

As part of the 5-year assessment of the SBKR (USFWS 2009), the Service considered that two of the remaining known locations likely were extirpated since the ESA listing in 1998 (i.e., South Bloomington and Reche Canyon). Within the Etiwanda alluvial fan, SBKR was confined to the San Bernardino County Flood Control District's Etiwanda Debris Basin Lower Spreading Grounds and associated facilities.

The 5-year assessment described the distribution of SBKR as of 2008 (USFWS 2009) in the three remaining significant habitat blocks, but did not report acreages of suitable or occupied habitat. The acreage estimates of suitable habitat and SBKR distribution have evolved over the 10 years following the emergency listing; we now know that by 2008 SBKR occupied a greatly reduced and significantly fragmented portion of its former range, occurred in very low numbers in some portions of its designated Critical Habitat (e.g., Etiwanda Alluvial Fan, Cable Creek), and it has been extirpated from areas it once occupied, following its listing as an Endangered Species and designation of Critical Habitat by the Service.

Santa Ana River

In 2008, SBKR occurred along the upper reach of the Santa Ana River from its confluence with Mill Creek to just below Tippecanoe Avenue. This habitat was a mosaic of (1) developed and disturbed areas that do not support SBKR, (2) undeveloped but disturbed habitats that support SBKR in limited numbers, and (3) higher quality habitats that support SBKR in higher numbers. However, vegetation succession from lack of flooding has degraded many of these once higher quality habitats. SBKR also still occurred in alluvial fan habitats in the lower portions of Mill, Plunge, and City creeks where they flow into the Santa Ana River, although habitat on Plunge Creek was fragmented and largely isolated from other high-quality habitats occupied by SBKR.

Lytle Creek, Cajon Wash, and Cable Creek

In 2008, SBKR still occurred in discrete, fragmented locations along approximately 3 miles of Lytle Creek from upstream of the Interstate 15 crossing of the creek to the confluence of Cajon Wash. Lytle Creek was deeply incised, and channelization and levees had modified the habitat significantly. The largest block of habitat along Lytle Creek occurred just upstream of the aggregate mining operations, where the creek meandered within its deeply incised channel, creating alluvial terraces with high quality habitat. However, these alluvial terraces were subject to high velocity floods, little high elevation refugia habitat in the channel was available, and adjacent upland areas occupied by SBKR have been isolated from the creek by development.

In 2008 SBKR occupied an approximately 8-mile reach of Cajon Wash from approximately 4.5 miles upstream of the Interstate 15 crossing of the creek to its confluence with Lytle Creek. Cajon Wash experienced normal fluvial process necessary to maintain suitable SBKR habitat.

In 2008 SBKR occupied habitat along Cable Creek, which was historically part of the Cajon Wash floodplain. However, SBKR habitat along Cable Creek was isolated from Cajon Wash by

development and Interstate 215. Habitat quality along Cable Creek was variable and adversely affected by disturbances such as off-highway vehicles and trash dumping.

San Jacinto River and Bautista Creek

In 2008 SBKR occurred in the approximately upper 13 miles of the San Jacinto River, but all habitat downstream of this had been eliminated (USFWS 2009). Lower Indian and Poppet creeks, while not considered historical habitat by McKernan (1997) or discussed in the 2009 5-year Assessment (USFWS 2009), were included in Critical Habitat. Bautista Creek, a tributary of the San Jacinto River, was historically part of a large habitat block contiguous with the San Jacinto (McKernan 1997). However, the Bautista Creek habitat is now isolated from the San Jacinto River by an over 4-mile developed and channelized creek reach that did not support habitat in 2008. While not well-surveyed, the Service considered the upper 4 miles of Bautista Creek to be a self-sustaining population distinct from the San Jacinto River population (USFWS 2009).

Current range/abundance (2018)

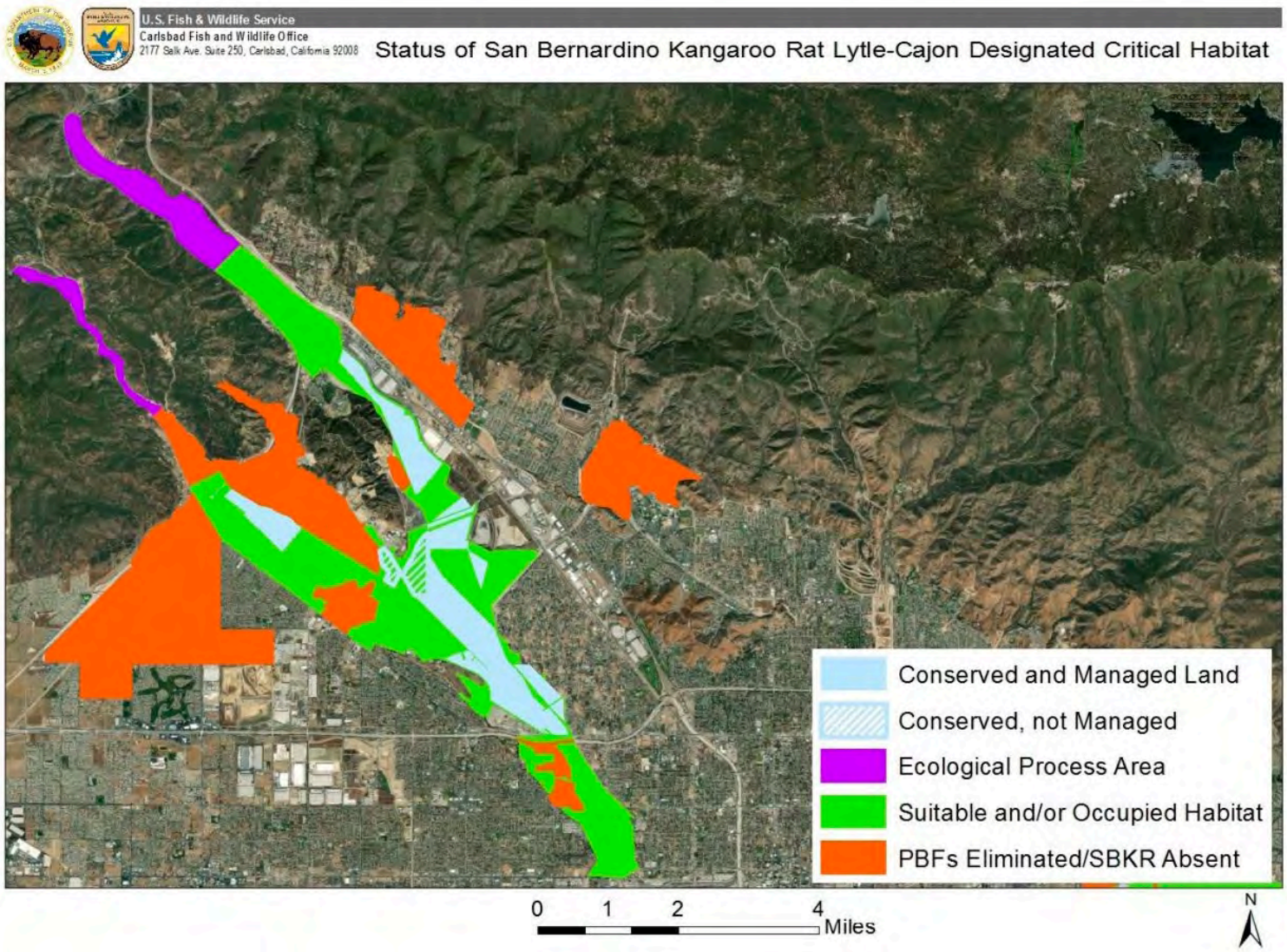
This section uses the best scientific information available to describe current distribution, including museum records, recent unpublished survey and research reports (e.g., Shier et al. 2018), other publicly available location data, and recent Service unpublished information on its distribution and status (USFWS 2018). Over 85% of remaining functional SBKR habitat is associated with Lytle Creek and Cajon Wash and the Santa Ana River, with the only other significant populations along the San Jacinto River (Figure 2, Table 1). It is likely that the SBKR has been extirpated (or occur in such small numbers as to be effectively extirpated) from the Etiwanda Fan and Bautista Creek since 2008 (Shier et al. 2018, USFWS 2018).

Lytle Creek/Cajon Wash

The habitat block along Lytle Creek/Cajon Wash is one of the two largest remaining (Santa Ana River being the other). In Cajon Wash, SBKR occur from 1.5 miles above Interstate 15 downstream to the Lytle Creek confluence. In Lytle Creek SBKR occur from 0.6 mile above the Interstate 15 crossing downstream to Route 66. Recent, extensive trapping in suitable habitat within this block found many sites had low or no SBKR (Shier et al. 2018). The most SBKR were trapped within the Lytle Creek Conservation Bank and Cajon Wash Conservation Bank, and few or no animals were trapped at five other sites (Institution, Glen Helen, Highway 210, Muscovy, and Cemex). Land use changes in this area have fragmented the remaining habitat (Figure 3). Connectivity between upstream and downstream patches along Lytle Creek has been virtually eliminated by the CEMEX mining operation and Lytle Creek North development.

The small SBKR population in Cable Creek, discovered in the late 2000s, has been isolated by development from the historic Cajon/Lytle drainages and is unlikely to persist without intensive management to maintain appropriate habitat conditions (attempts at active SBKR habitat management are discussed further below). The Service considers that the physical and biological features necessary to support SBKR at Cable Creek have been eliminated (Figure 3, USFWS 2018).

Figure 3. SBKR status habitat within the Lytle Creek/Cajon Wash Critical Habitat unit (from USFWS 2018).



In 2018 the Service identified 6,471 acres of suitable, occupied, and/or conserved SBKR habitat, and approximately 6,530 acres where physical and biological features necessary for SBKR have been eliminated from within this Critical Habitat unit (Figure 3, USFWS 2018). The Service currently estimates only 46% of Critical Habitat in this the largest (13,970 acres) of the Critical Habitat units is suitable, occupied or conserved for SBKR, and this remaining habitat is threatened by additional development (discussed further below).

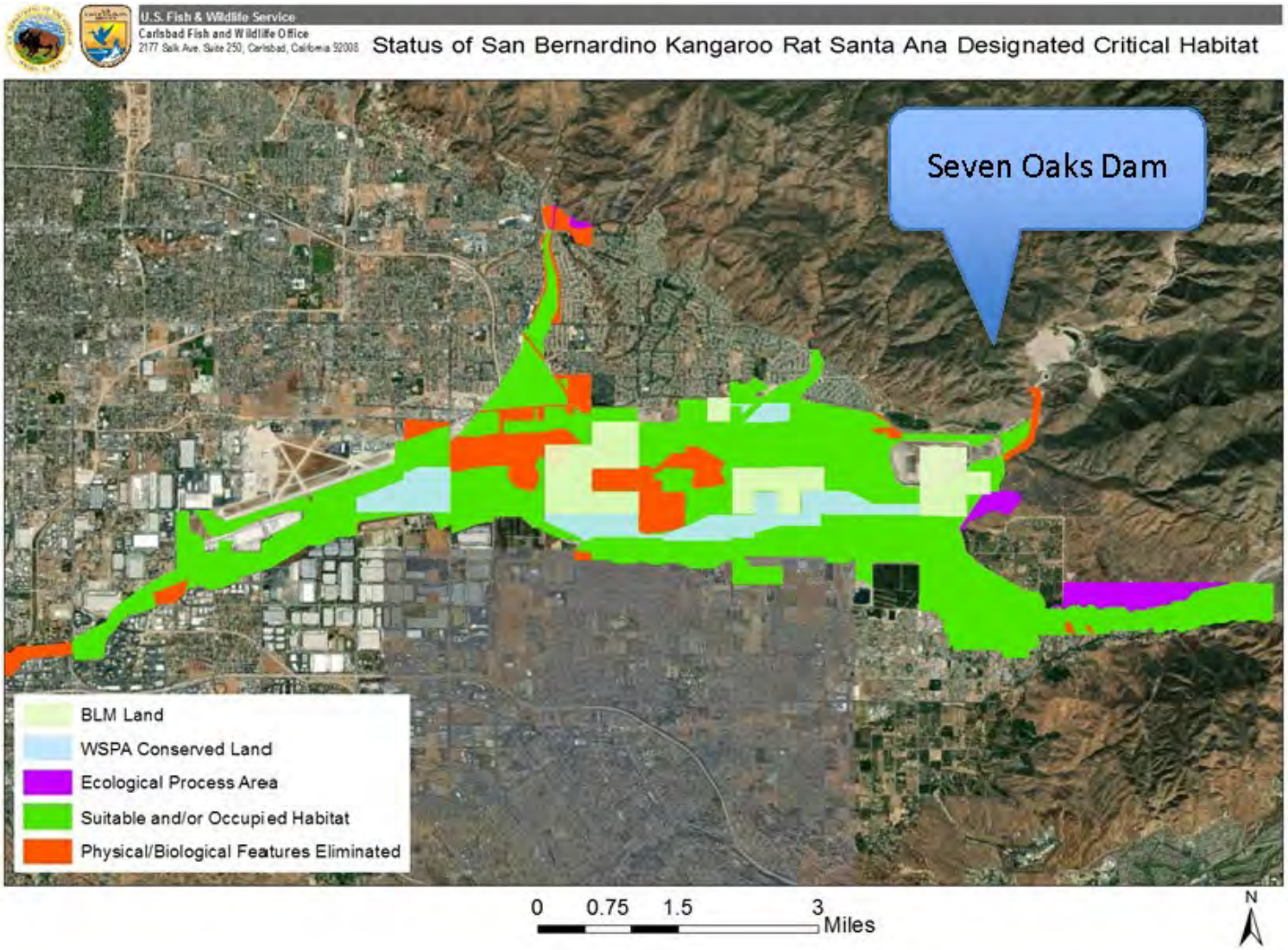
Santa Ana River

SBKR distribution within this second largest Critical Habitat unit includes the lower portions of Mill Creek, Plunge Creek, and City Creek near their confluences with the Santa Ana River, and the mainstem Santa Ana River from the mouth of the canyon down to Tippecanoe Avenue. The mainstem Santa Ana River habitat has been fragmented by road, mining, and development. The Mill Creek population above Greenspot Road is also small, isolated, and adversely affected by creek channelization, water conservation basins, and flood control. City Creek upstream of Highland Avenue no longer supports necessary physical and biological features for SBKR (Figure 4, USFWS 2018).

Construction of the SOD and flood control operations of the reservoir have dramatically altered the hydrology of the Santa Ana River and eliminated the hydrological and ecological processes that have historically maintained habitat for SBKR. While the Biological Opinion for Seven Oaks anticipated periodic water releases to mimic historic flood flows and rejuvenate habitat (USFWS 2002b), such releases have not occurred and have not yet been planned by dam operators. In addition, the design of the dam physically limits the amount of water that can be released to a small fraction of the river's larger historical peak flows (ICF 2019). As a result of dam construction, large proportions of existing and proposed conservation areas along the Santa Ana River are no longer hydrologically active and will require long-term active management actions (as yet unproven) to maintain suitable habitat for SBKR (USFWS 2018). Recent hydrological studies of the Santa Ana River system (ICF 2018) conclude that the current tributary flow regimes, even if augmented by theoretically maximum dam releases, will not, given the deeply incised channel and reduced discharge relative to historical conditions, reconnect the channel with the historical floodplain. The lack of flooding in the disconnected floodplain will lead to succession by mature floodplain vegetation and invasion by nonnative plants inhospitable to SBKR.

In 2018 the Service identified 7,426 acres of suitable, occupied, and/or conserved SBKR habitat, and approximately 1,240 acres where physical and biological features necessary for SBKR have been eliminated from within the 8,935-acre Critical Habitat Unit (Figure 4, USFWS 2018). This includes ~773 acres in the WSPA (Figure 4). Therefore, the USFWS currently estimates 83% of Critical Habitat in this Critical Habitat unit is suitable, occupied or conserved for SBKR, but some of the conserved habitat is not occupied (USFWS 2018).

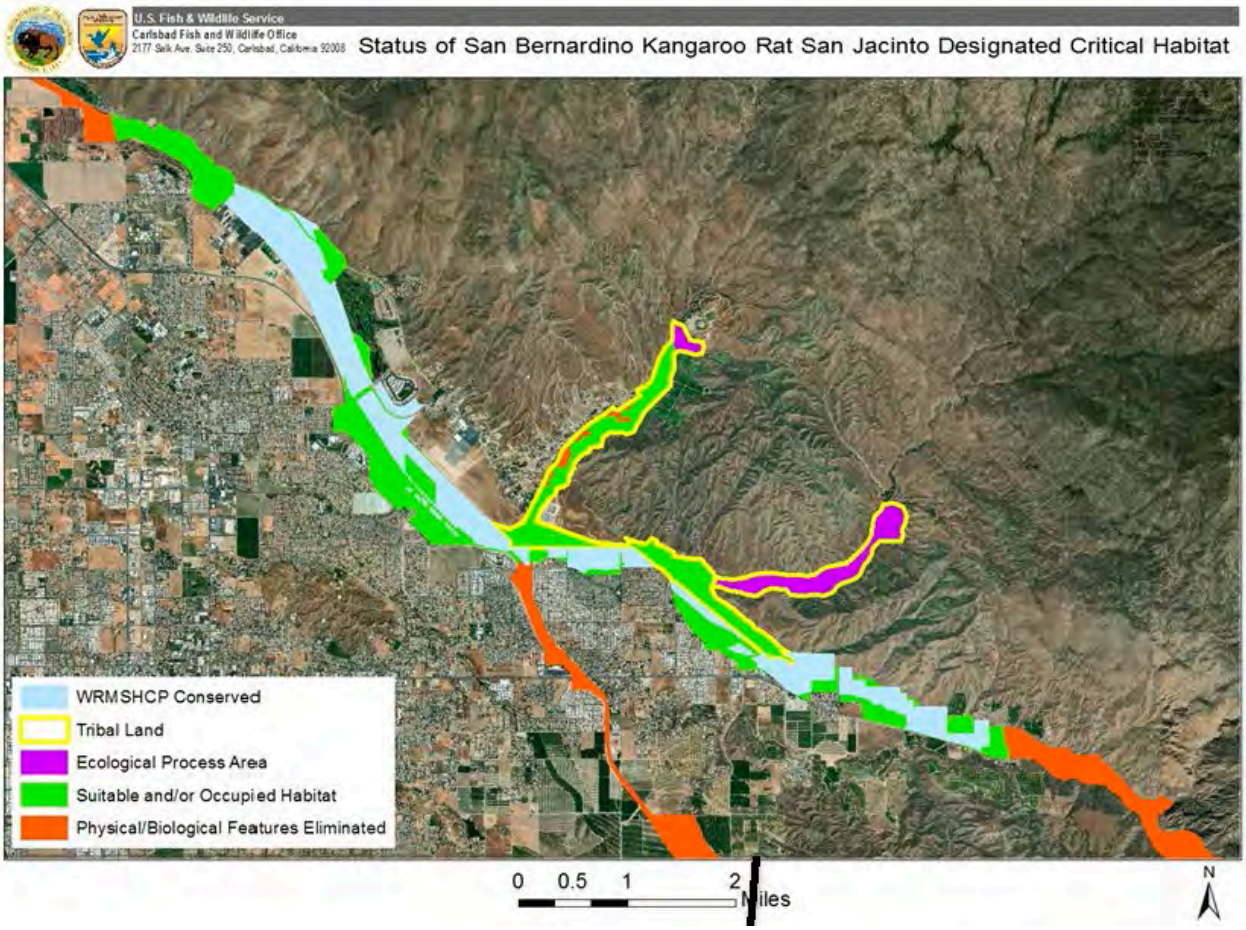
Figure 4. SBKR status habitat within the Santa Ana River Critical Habitat unit (from USFWS 2018).



San Jacinto River and Bautista Creek

The Service currently considers only the upper 6 miles of the San Jacinto River to be occupied based on trapping surveys conducted since 2009, and only 43% (2,403 acres) of the 5,565 acres of Critical Habitat in this unit to be functioning (USFWS 2018), while the necessary physical and biological features for SBKR have been eliminated on 2,913 acres of the unit (Figure 5). This remaining habitat is fragmented by roads and stream channelization. The Service considers the Bautista Creek population, which has been physically isolated from the confluence of the San Jacinto River by a 4-mile long concrete channel, to be extirpated (Figure 5). Monitoring for SBKR in 2015 found only 451 acres of occupied habitat in the MSHCP preserve, 32% of the "suitable" habitat that was sampled by the Biological Monitoring Program, and far short of the MSHCP conservation objective for this species (Biological Monitoring Program 2016). Shier and colleagues (2018) trapped no SBKR at one of their Valle Vista sites, and SBKR were absent from the occupied Hemet site when it was re-trapped in 2017.

Figure 5. SBKR habitat status within portions of the San Jacinto River/Bautista Creek Critical Habitat unit (from USFWS 2018). The status of the upper portions of the unit not shown in the map is Physical/Biological Features Eliminated.



Etiwanda Alluvial Fan

Only a few SBKR remained extant within the Etiwanda Alluvial Fan Critical Habitat unit when it was designated (USFWS 2002a). Shier and colleagues (2018) trapped but did not capture SBKR at Wilson and Edison. Service records indicate that the remaining SBKR on the Etiwanda Fan occur on the periphery of San Bernardino County Flood Control basins which inadvertently provide a narrow margin of suitable, marginally occupied habitat. The few remaining animals and limited habitat have little viability, as the population is small, isolated, and subject to flood control activities; the Service now considers that physical and biological features necessary for SBKR in the Etiwanda Fan Critical Habitat unit have been eliminated (Figure 2, USFWS 2018).

Land cover change 1998-2018

We estimated the loss of potentially suitable SBKR habitat in the decade between the emergency listing habitat of SBKR in 1998 and 2018. We used aerial photographs from NASA and Google Earth, focusing on lands inside and outside designated Critical Habitat for the species. The objective of this analysis is to identify the relative geographic distribution of remaining SBKR habitat and estimate the amount of land cover change experienced by the remaining populations since the time of the federal listing. To assess the nature, magnitude, and rate of SBKR habitat loss, we used aerial photographs, SBKR survey reports submitted to the Service, Biological Opinions issued by the Service, project Environmental Impact Reports, and decades of field work and SBKR trapping by the author (GB) and Biological Consultant (PB) to map the remaining "potential" SBKR habitat at the time of its listing as Endangered by the Service in (1998) and then again in 2018 (Table 2).

Because the condition, quality and actual occupancy of SBKR across its current range changes over time and is not comprehensively known at any given point in time, for years 1998 and 2018 we mapped all "potential" SBKR habitat, including alluvial fan scrub vegetation and adjoining ruderal and disturbed habitats that in our experience have the potential to support SBKR. The mapping within SBKR Critical Habitat was carried out regardless of documented occupancy. Outside of Critical Habitat, potential habitat was mapped in adjoining areas where historical records of SBKR were found. This exercise yielded a likely maximum estimate of potential SBKR habitat, and it is certain that not all of it is suitable, functional, or occupied. Most importantly, this mapping exercise identified areas that are not considered potential habitat for SBKR because of human-induced land cover changes (for example, conversion to residential development). Therefore, this exercise documents the magnitude and rate of the *irreversible* loss of potential SBKR habitat since listing by the Service in 1998.

By late 1998 SBKR occupied habitat was in seven populations largely restricted to four geographic areas (USFWS 1998): Etiwanda Alluvial Fan (Figure 6), Lytle Creek/Cajon Wash (including Cable and Devils creeks, Figure 7), Santa Ana River (Figure 8), and San Jacinto River/Bautista Creek (Figure 9a, b). These four areas ultimately served as the basis of the Service's designation of Critical Habitat for SBKR (USFWS 2002a). In 1998, we estimate approximately 36,464 acres of potential habitat existed, with a little more than 3,200 acres of unsuitable areas within the boundaries of designated Critical Habitat (Table 2).

By 2018, under federal Endangered Species Act regulation, each of the four areas had lost significant acreages of habitat (Table 2). Nearly 11,000 acres of potential habitat was converted to areas unsuitable for SBKR during this 20-year period, an increase of 337%. This represents a rate of 539 acres of habitat lost per year since federal listing of the species. In addition, there was a particularly large loss of potential habitat in Lytle Creek and Cajon Wash (5,613 acres), which, with the Santa Ana River, is one of the two remaining significant populations. While the acreages in Table 2 significantly overestimate the actual area occupied by SBKR (e.g., San Jacinto River is estimated to support only a total of 451 acres [Biological Monitoring Program 2016] and the Service considers the Etiwanda Alluvial Fan population extirpated [USFWS 2018]), these estimates provide an objective picture of the rates of land cover change in the only remaining areas that still supported SBKR in 1998. Given that significant portions of remaining potential habitat have lost the physical and biological features necessary to support SBKR (USFWS 2018), the current status and trajectory of SBKR is truly dire. Further, as demonstrated by these steep and ongoing rates of loss of suitable habitat, this negative trajectory is *not* being effectively addressed through the federal listing.

Table 2. Acreages of potential, suitable and unsuitable SBKR habitat in 1998 and 2018. Units are shown in Figures 6-9.

Unit	1998 Unsuitable	1998 Suitable	2018 Unsuitable	2018 Suitable	% Loss Suitable 1998-2018	% Increase Unsuitable 1998-2018
Inside Critical Habitat						
Etiwanda Alluvial Fan	248	5,645	2,402	3,491	24%	435%
Lytle Creek/Cajon Wash	1,285	15,891	6,898	10,278	19%	187%
Santa Ana River	1,004	8,829	2,661	7,172	10%	75%
San Jacinto River/Bautista Creek	664	6,099	2,036	4,727	4%	221%
Outside Critical Habitat						
Etiwanda Alluvial Fan	0	1,075	1,075	0	100%	-
Lytle Creek/Cajon Wash	0	3,205	3,205	0	100%	-
Santa Ana River	0	897	897	0	100%	-
San Jacinto River/Bautista Creek	0	1,198	1,198	0	100%	-
Estimated Totals	**3,201**	**36,464**	**13,997**	**25,668**	**30%**	**337%**

Figure 6. A comparison of the distribution of remaining "potentially suitable" San Bernardino kangaroo rat habitat within and adjacent to the Etiwanda Fan Critical Habitat unit (designated in 2002) and areas considered unsuitable for SBKR in 1998 (top) and 2018 (bottom).

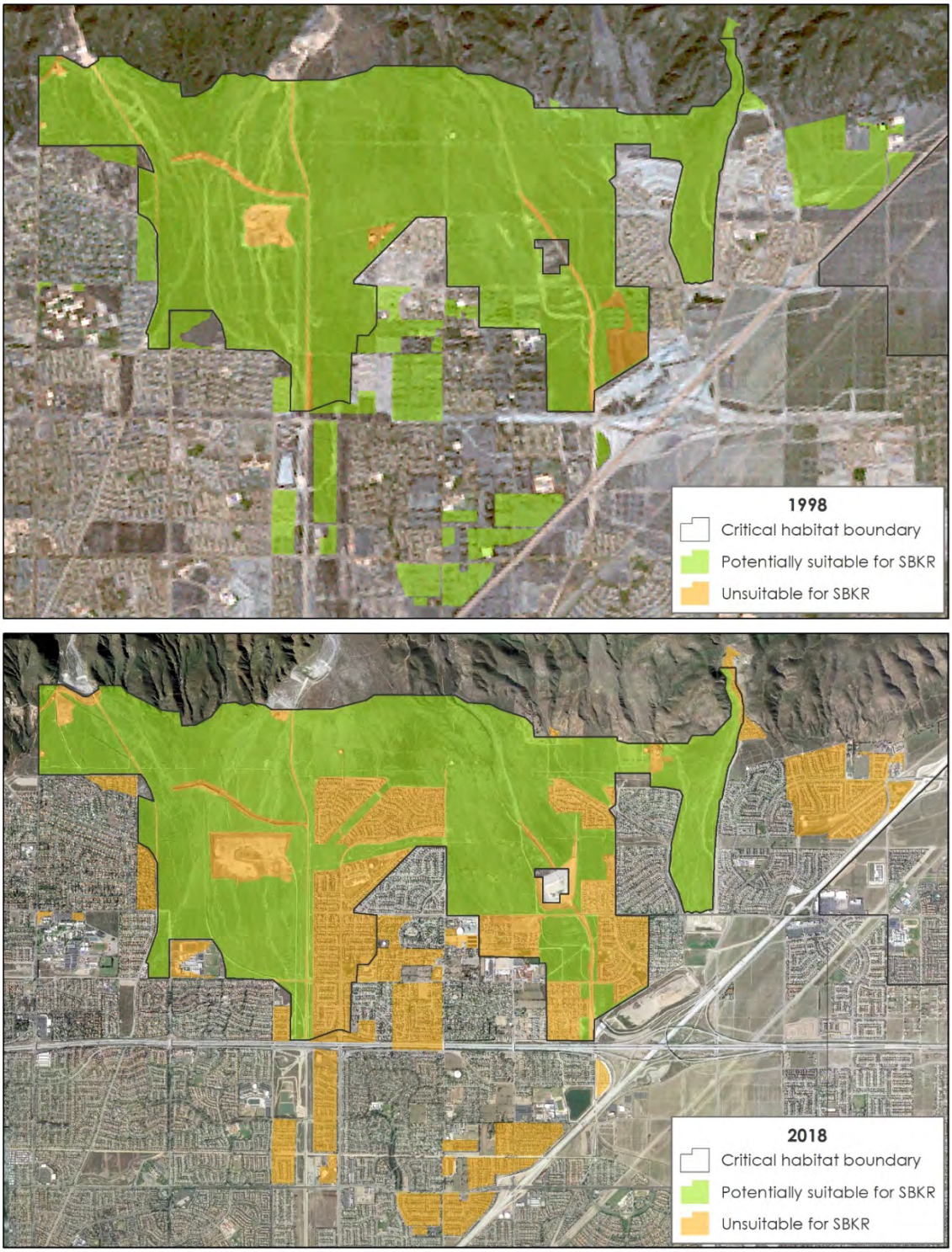


Figure 7. A comparison of the distribution of remaining "potentially suitable" San Bernardino kangaroo rat habitat within and adjacent to the Lytle Creek/Cajon Wash Critical Habitat unit (designated in 2002) and areas considered unsuitable for SBKR in 1998 (left) and 2018 (right).

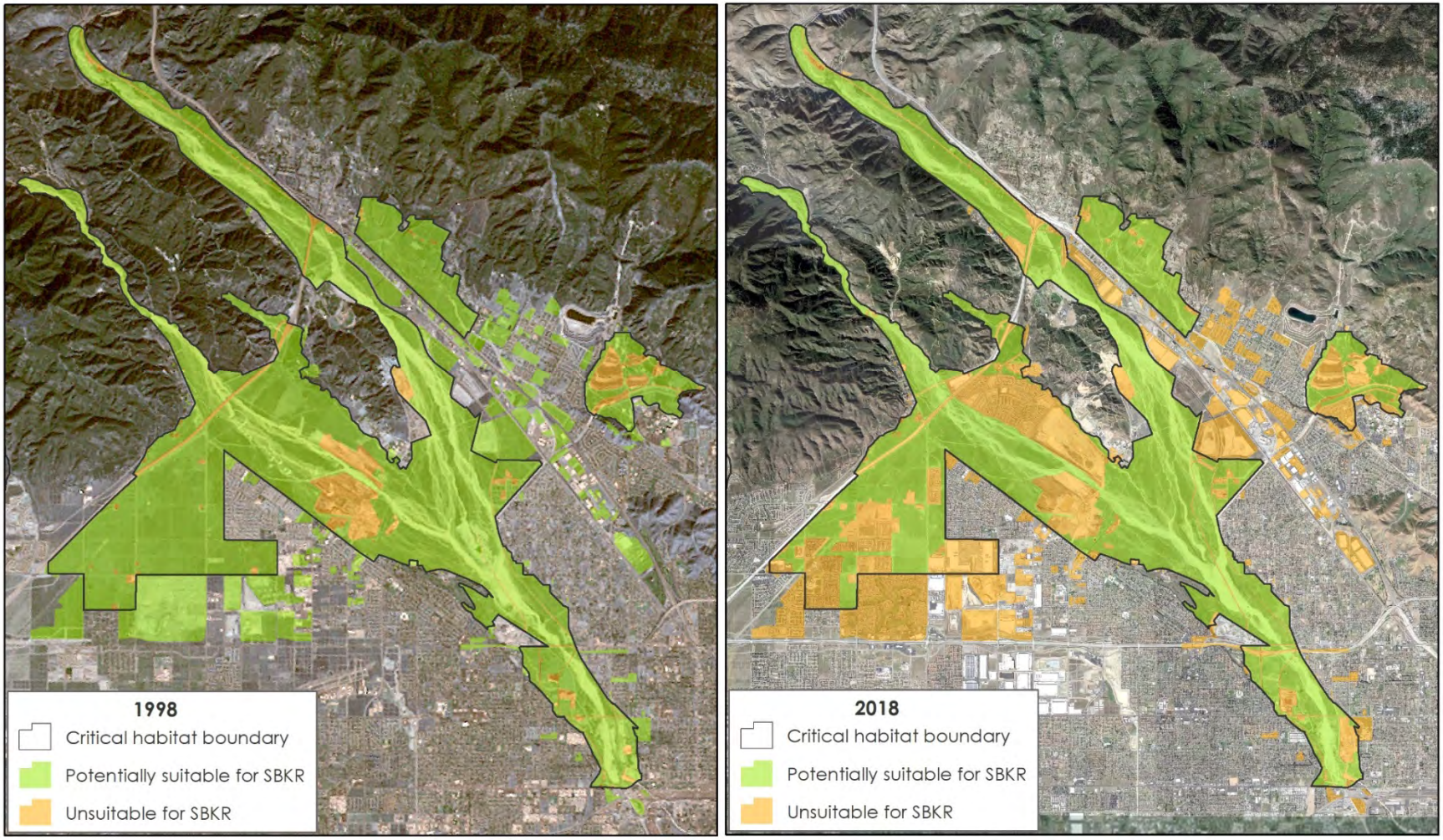


Figure 8. A comparison of the distribution of remaining "potentially suitable" San Bernardino kangaroo rat habitat within and adjacent to the Santa Ana River Critical Habitat unit (designated in 2002) and areas considered unsuitable for SBKR in 1998 (top) and 2018 (bottom).

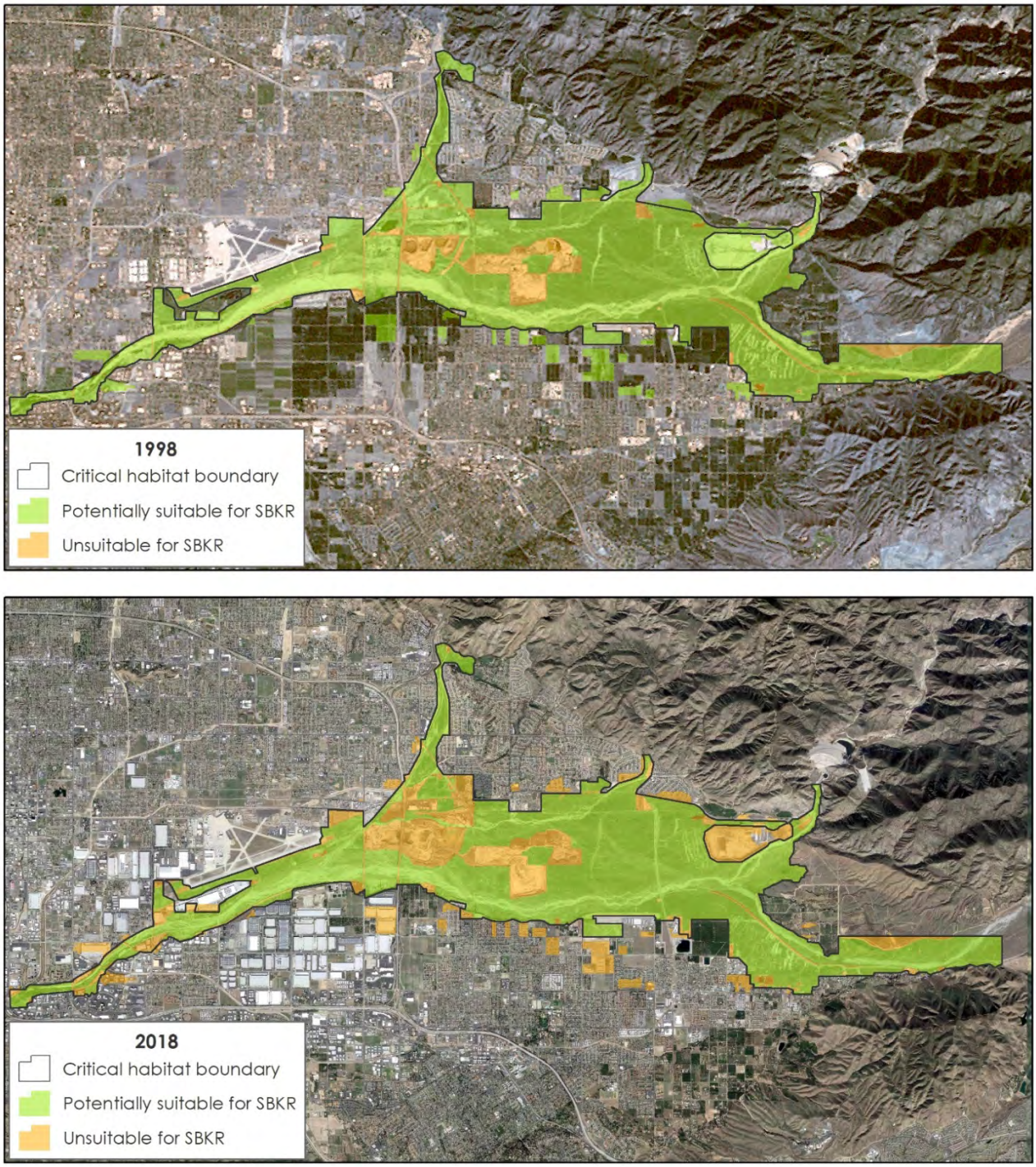


Figure 9a. Comparison of the distribution of remaining "potentially suitable" SBKR habitat within and adjacent to the northern portion of the San Jacinto River/Bautista Creek Critical Habitat unit (designated in 2002) and areas considered unsuitable for SBKR in 1998 (top) and 2018 (bottom).

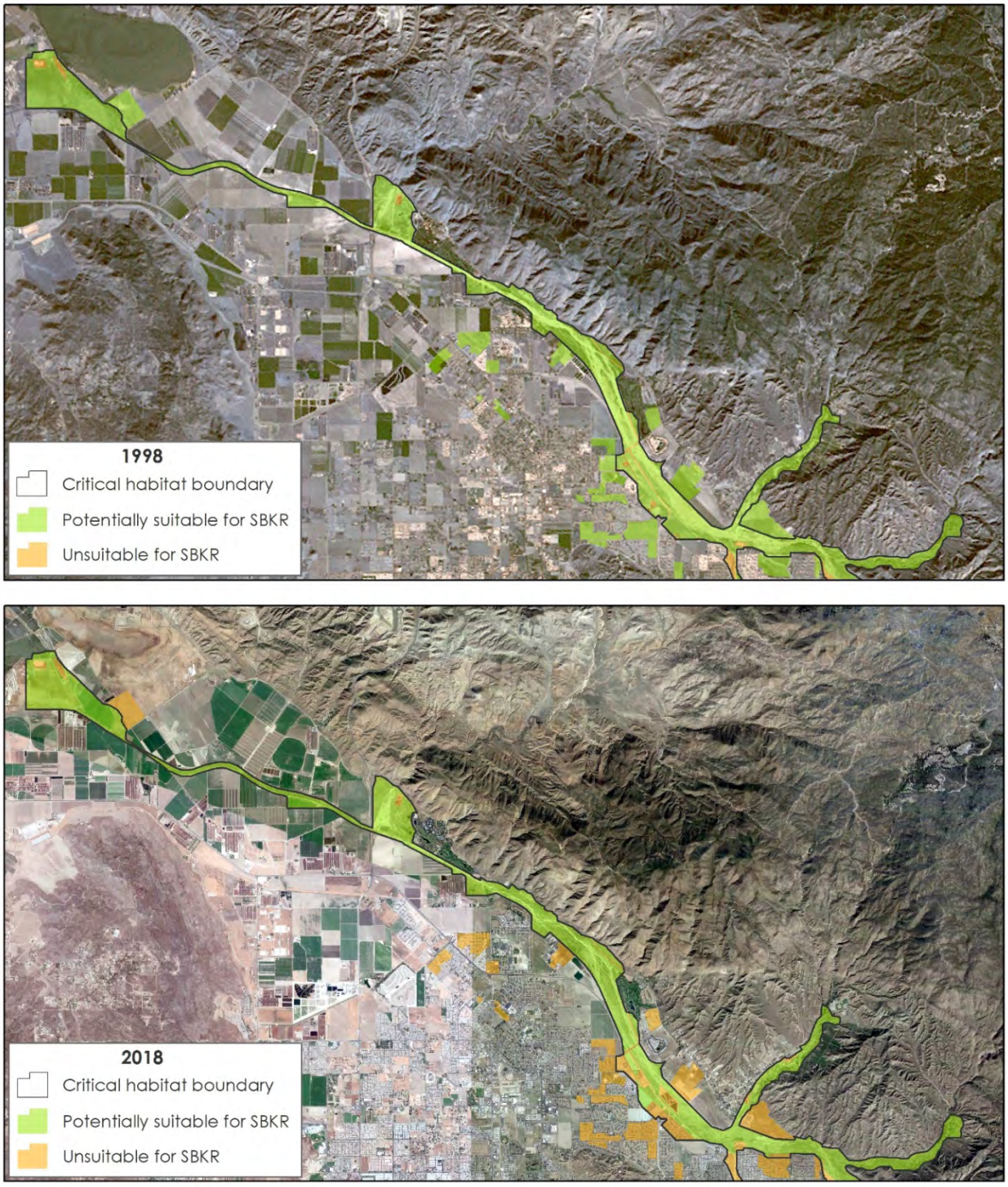
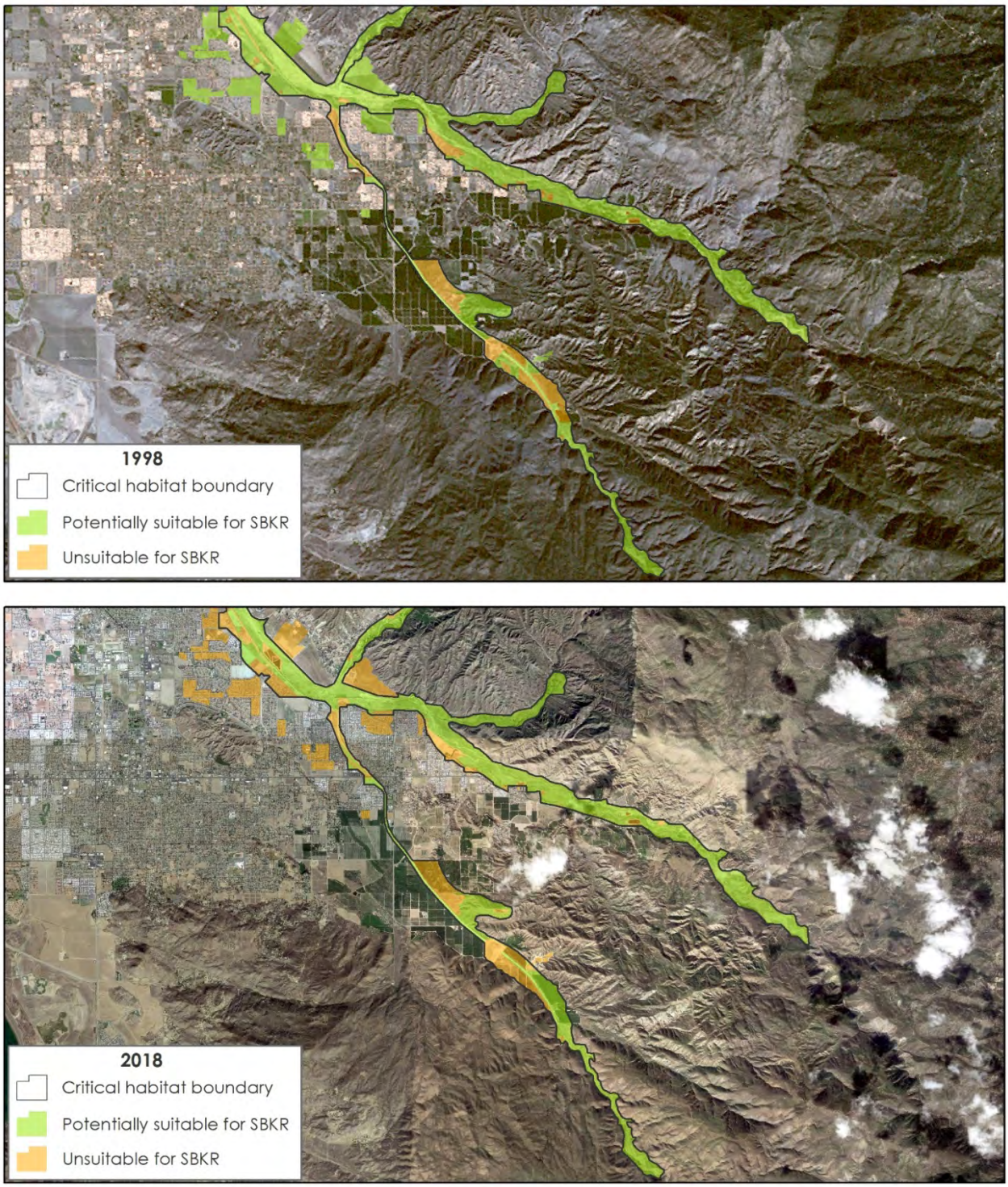


Figure 9b. Comparison of the distribution of remaining “potentially suitable” SBKR habitat within and adjacent to the southern portion of the San Jacinto River/Bautista Creek Critical Habitat unit (designated in 2002) and areas considered unsuitable for SBKR in 1998 (top) and 2018 (bottom).



3. ABUNDANCE

SBKR historically occurred in alluvial fan scrub habitats associated with the active floodplains of the San Bernardino and San Jacinto/Perris valleys (McKernan 1997). As discussed above, due to the urban, commercial, and agricultural development of these areas, less than 5% of SBKR's historic range was still occupied by 2008 (USFWS 2009). However, much of this remaining habitat has low value because it is highly fragmented, degraded, and lacks necessary ecological functions to support SBKR. As discussed further in Section 5, local habitat conditions control population abundance, which generally ranges from 1 to 30 individuals/acre (McKernan 1997, Root 2008, Root 2010). Habitats in areas with natural fluvial processes support greater abundance than areas where these processes have been modified or eliminated (McKernan 1997, USFWS 2009, USFWS 2018). Population abundance trends are poorly understood across SBKR's range. Therefore, the dramatic loss and fragmentation of the species' habitat, rather than a population abundance trend per se, is the best descriptor of SBKR's status and need for additional CESA protection.

4. LIFE HISTORY (SPECIES DESCRIPTION, BIOLOGY, AND ECOLOGY)

Description

SBKR (*Dipodomys merriami parvus*) is one of three recognized subspecies of Merriam's kangaroo rat within California (Lidicker 1960) that occur in alluvial fan scrub habitats in northern San Bernardino and Riverside counties. The San Bernardino kangaroo rat is morphologically distinct from the other two *D. merriami* subspecies in California (*D. m. merriami* and *D. m. collinus*). It has yellowish-brown colored pelage with dark brown tail stripes, foot pads, and tail hairs. It has an average body length of 95 millimeters (3.7 inches) and a total length (tail included) of 230-235 millimeters (9-9.3 inches). Its hind feet are <36 millimeters (1.4 inches) in length. On average, the San Bernardino kangaroo rat is smaller and darker than the other two California *D. merriami* subspecies.

Taxonomy and current population genetics

Kangaroo rats belong to the genus *Dipodomys* within the Heteromyidae family of rodents. Merriam's kangaroo rat (*D. merriami*) occurs throughout arid regions of the western United States and northwestern Mexico, with 19 described subspecies across this range (Hall 1981, Williams *et al.* 1993). Only three of the 19 subspecies occur in California: *Dipodomys merriami merriami*, *D. m. collinus*, and *D. m. parvus*. SBKR was initially described as a full species (*D. parvus*) but is currently considered a subspecies of *D. merriami* (Hall 1981, Williams *et al.* 1993).

SBKR is geographically isolated from the other two *D. merriami* subspecies. At the northern end of its range, near Cajon Pass, the SBKR is separated from *D. merriami merriami* (in the Mojave Desert) by 5-8 miles of currently unsuitable habitat. At the southern end of its range, it is geographically separated from *D. m. collinus*, which it may have intergraded with in the distant

past (Lidicker 1960). Morphological divergence suggests potential genetic differentiation as well, and it has been suggested that the SBKR may be a separate species (Lidicker 1960).

Dispersal and home range

While no data exist on home ranges for SBKR specifically, home range size for Merriam's kangaroo rat averages 0.33 hectare (0.82 acre) for males and 0.31 hectare (0.77 acre) for females (Behrends *et al.* 1986). Edges of the home ranges of neighboring kangaroo rats sometimes overlap. However, adults often defend core areas near their burrows. Overlap between male-male and male-female kangaroo rat home ranges is often extensive, while female-female overlap is generally much less (Jones 1993). Zeng and Brown (1987) found that 75% of adult male and 59% of adult female *D. merriami* dispersed between 197 feet (60 meters) and 787 feet (240 meters) from their initial capture sites (in the Chihuahua Desert).

Reproduction and growth

SBKR reproductive timing is variable and likely depends on annual precipitation and associated plant growth. Pregnant and lactating females have been found between January and November, and reproductively active males have been observed from January through August (McKernan 1997). Green vegetation following rainfall is consumed prior to reproductive activity. Merriam's kangaroo rat may forgo breeding during years of poor plant growth in response to drought conditions (Tremor et al. 2017). Females can have more than one litter per year, with an average litter size of two to three young (Eisenberg 1993).

Foraging ecology and diet

Merriam's kangaroo rats are nocturnal and primarily granivorous. They store seeds temporarily in external fur-lined cheek pouches before stashing the seeds in either shallow pit caches or a larder within their burrows, which they utilize during periods of food scarcity (Jenkins et al. 1995, Reichman and Price 1993). Individuals within the same population may exhibit different food-hoarding preferences (Murray et al. 2006). Although seeds are a central component of their diets, they also forage for green vegetation and insects. These additional food supplies provide essential sources of water for kangaroo rats, which can live indefinitely without direct consumption of water (Reichman and Price 1993). Foraging rates are lower during full moon compared to new moon conditions (Kotler 1984, Wang and Shier 2017).

Natural mortality and population regulation

Merriam's kangaroo rats (*D. merriami*) live for 3.7- 5 months on average, but single individuals can live for >3 years (French *et al.* 1967). Kangaroo rat populations fluctuate dramatically in response to food availability (Goldingay et al. 1997). *Dipodomys* species, unlike other Heteromyids, do not have the ability to enter a state of torpor, or inactivity, which would help prevent dramatic populations declines during times of drought or low resource abundance (Brown and Harney 1993). Major flood events also negatively affect local population abundance, and kangaroo rat mortality is often high following these episodic events (USFWS 2002a). Predation by coyotes (*Canis latrans*), grey foxes (*Urocyon cinereoargenteus*), badgers (*Taxidea*

taxus), long-tailed weasels (*Mustela frenata*), bobcats (*Lynx rufus*), snakes (*Crotalus* spp. and *Pituophis* spp.), and raptors (e.g., great horned owls [*Bubo virginianus*]) also acts as a natural population regulator (French et al. 1967, Daly et al. 1990, Shier unpublished).

5. HABITAT NECESSARY FOR SURVIVAL

Necessary habitat characteristics for the SBKR include: sandy or gravelly soils and substrates, generally supporting open-structured alluvial fan scrub vegetation, in floodplains with active fluvial processes and nearby upland and/or less frequently inundated terraces (USFWS 2002a). These habitat characteristics are described further below.

The SBKR's habitat occurs within naturally functioning alluvial fan systems, which are highly dynamic, constantly shifting networks of braided channels. The active channels can range from a few decimeters to several meters deep. Alluvium and soils in the floodplain typically have sand, sandy loam, or gravel textures (McKernan 1997). Habitat quality is frequently reworked in these systems through scouring, sediment relocation, and alluvium deposition during fluvial events. There are three successional phases of alluvial fan scrub habitat, the distribution of which is determined by three characteristics: elevation, distance from main channel, and time since previous flooding. The three successional phases are pioneer, intermediate, and mature (Hanes et al. 1989). The pioneer phase has been subject to recent flooding and often occurs close to the main channel. The intermediate phase is generally between the active channels and terraces and experiences periodic flooding over longer temporal intervals. The climax, or mature, phase is rarely affected by flooding and has dense vegetation cover (Smith 1980). The SBKR prefers more open vegetation structures (between 7 and 22% shrub cover), which is typically in the early and intermediate seral stages (McKernan 1997). The intermediate terraces have been observed to host the highest densities of kangaroo rats (Smith 1980).

A geomorphic analysis of the upper Santa Ana River alluvial fan carried out in 1999 (Mussetter Engineering 1999, MEC Analytical 2000) examined SBKR habitat in relation to flood history. Data on soil characteristics (weathering on the surface of boulders, gravel, cobble, boulder, and sand grain size; surface texture; presence and size of lichens, cryptogramic crusts on soil surfaces, sediment depths, and successional phases of the vegetation) were used to map the locations of channels, overbank, and interfluvial areas associated with major floods, notably the 1862/1869, 1938, and post-1938 floods.

The main classes of flood influence were areas influenced by the 1938 flood and more recent floods; areas overtopped by the 1938 flood; and areas that last experienced substantial flooding during the 1862/1869 floods. The 1862/1869 floods, with estimated peak glows of 120,000 cubic feet/sec (cfs) (the largest on record, representing a 200-year pre-SOD flood event) flooded most or all of the fan of the Santa Ana River and hydraulically re-worked most of the fan. The 1938 flood, with an estimated peak flow of about 45,000 cfs (representing a 50-year storm pre-SOD) flooded large areas of the fan with the exception of the area between the percolation basins and Plunge Creek. This area was last flooded or over-topped by the 1862/1869 floods but not affected by the 1938 flood and now supports senescent alluvial fan sage scrub habitat. Data indicate that geomorphically significant events that re-set alluvial fan sage scrub plant succession

have occurred twice in the last 140 years in the pre-SOD history (1862/1869 and 1938), suggesting a recurrence interval of 60-70 years.

The absence of fluvial processes for 60-70 years leads to senescent alluvial fan sage scrub via plant community succession, and senescent alluvial fan sage scrub habitat is not used by SBKR. Senescent alluvial fan sage scrub dominates the Etiwanda fan Critical Habitat unit, is the dominant native plant community in the western part of the Lytle Creek-Cajon Wash unit and occurs in the Santa Ana River between the percolation basins and Plunge Creek. SBKR are most abundant in the early pioneer phase alluvial fan sage scrub habitat, which occupies a small part of the Santa Ana River Critical Habitat unit. Most of the alluvial fan sage scrub in the Santa Ana River Critical Habitat unit is intermediate phased AFSS dominated by juniper trees/shrubs. SBKR historical occurrences are distributed widely in this habitat type, but in lower numbers than in early successional stage alluvial fan sage scrub. Moreover, in the absence of fluvial processes, juniper-dominated intermediate phased alluvial fan sage scrub probably developed 20 years after the latest major flood event, and successional changes after 60 or 70 years can be expected to lead to the senescent phase alluvial fan sage scrub.

Flood events can destroy burrows and force the movement of individuals occupying flooded habitats or they drown. Local population survival is therefore dependent on connectivity to nearby refugia, often on intermediate to higher elevation floodplain terraces, where individuals can escape floods and later colonize early successional habitats (USFWS 2002a).

There is a body of evidence demonstrating the adverse effects of habitat fragmentation and edge effects (e.g., night lighting) on small mammals such as SBKR (e.g., Wilcox and Murphy 1985, Beier 2006). Rodents change their foraging behavior during full moons presumably to reduce their risk to visual predators (Daly et al. 1992, Wang and Shier 2017), and artificial lights can elicit the same responses (Kotler 1984, Wang and Shier 2017). SBKR are significantly less likely to deplete a foraging patch under continuous lighting than under motion detection lights or natural moon conditions. The effect of artificial lighting on SBKR foraging decisions was significant up to 82 feet (25 meters) from the light source (Wang and Shier 2017). Thus, edge effects affect SBKR foraging decisions, and so large unfragmented blocks of suitable habitat not subject to edge effects likely provide the highest habitat quality for SBKR.

6. FACTORS AFFECTING ABILITY TO SURVIVE AND REPRODUCE

The primary threat to SBKR is the direct impact of past and present modification and destruction of its habitat. McKernan (1997) first documented the extensive loss and fragmentation of this species' historical habitat. This work by McKernan and others in the late 1990s led the Service to emergency-list SBKR as Endangered in 1998. By that time, SBKR habitat had been reduced from two large contiguous blocks of habitat in the San Bernardino and San Jacinto/Perris valleys, respectively, into four small, internally fragmented blocks of habitat (Etiwanda Fan, Lytle Creek/Cajon Wash, Santa Ana River, and San Jacinto River/Bautista Creek), with >90% of the remaining habitat found in only two of these blocks (Santa Ana River, Lytle Creek/Cajon Wash). These four remaining blocks of habitat were the focus of the Service when designating Critical Habitat (USFWS 2002).

However, habitat in these areas has continued to be lost, fragmented, and degraded by land use changes. We estimate that on average over 500 acres of SBKR habitat have been lost each year, with over 11,000 total acres of habitat having been lost since federal listing in 1998. Just as important as the direct loss of habitat, however, significant ecological and hydrological processes that historically maintained SBKR habitat have also been lost due to channelization, flood control operations and water management, and loss of upland refugia. The result is an increasing reliance on experimental, unproven, and as yet unsuccessful, management measures to recover these declining populations.

Habitat loss is the primary driver of species extinction (e.g., Fahrig 2003, Wilcove et al. 2008), and over 95% of the SBKR's historical habitat has been eliminated, including the complete loss of significant portions of its original range (McKernan 1998). This in and of itself potentially jeopardizes the continued existence of the SBKR. Structural impacts to SBKR habitat as a result of habitat conversion to developed uses (e.g., residential, commercial, and flood control), and other land use changes, have led to the loss and degradation of connectivity between remaining habitat patches, which has also been eliminated or greatly reduced. Habitat fragmentation can have negative effects on animal populations (Fahrig 2003, Prugh et al. 2008), particularly when remaining habitat patches have low habitat quality, which can increase extinction rates in individual patches and reduce the long-term viability of a species (Lindenmayer and Luck 2005, Prugh et al. 2008, Rhoades et al. 2008). Because much of the remaining suitable habitat is now located in highly active and flood-prone channels and near stream locations with limited connectivity to suitable habitat on higher, less frequently flooded terraces, elevated local extinction rates of SBKR are expected. In addition, Prugh and colleagues (2008) emphasize the importance of the intervening "matrix" lands (land between suitable habitat patches) to population persistence; i.e., when matrix lands have low or no habitat suitability, the adverse effects of habitat loss and fragmentation on population viability increase. Most of the undeveloped matrix lands around higher quality patches of SBKR habitat lack appropriate fluvial processes and vegetation succession, support nonnative grass, and have elevated night lighting and other edge effects. Without immediate intervention to reverse the extensive losses and modifications to its habitat, the long-term viability and persistence of SBKR is questionable.

A range-wide genetic assessment of SBKR confirms these negative trends in habitat and population loses for conservation and recovery of the species. SBKR in the Lytle Creek/Cajon Wash, Santa Ana River, and San Jacinto River/Bautista Creek blocks of habitat have low effective population sizes (N_e, Shier et al. 2018). Effective population sizes in Lytle Creek/Cajon Wash (85.8), Santa Ana River (30.4), and San Jacinto River (14.7) are an order of magnitude below the target for maintaining genetic diversity in the species (N_e>500), and the Santa Ana River and San Jacinto River fall below targets to prevent inbreeding depression (N_e>50). Shier and colleagues (2018) documented significant levels of inbreeding of SBKR within these three blocks of habitat and no natural interbreeding among them (their work did detect the translocation of SBKR between the Santa Ana River and Cajon Wash populations). The genetic structure of the three populations is unique, reflecting their relatively recent isolation from each other due to loss of connectivity. Genetic diversity in the San Jacinto block was particularly low and suggestive of a population bottleneck in the past.

SBKR populations use fluvially dynamic alluvial floodplains that support a shifting but interconnected mosaic of flood terraces, varying in elevation with different aged and structured stands of alluvial fan scrub habitat. However, flood control and water management, rail lines, roads and culverts, commercial and urban development, agricultural conversion, and nonnative plant species have modified or eliminated floodplain connectivity and these processes. The prospect for long-term persistence of SBKR and its habitat in the Santa Ana River area is poor because of the operation of the SOD, and nonnative plant invasion and type conversion. Likewise, SBKR appear to have been extirpated in the upper reaches of City Creek (upstream of Highland Avenue). Habitat along Lytle Creek now exists within levee-modified or channelized floodplains which are subject to high stream velocity and scouring events relative to historical conditions, exposing SBKR populations to potentially catastrophic flooding events with little available refugia that remains available for SBKR to move to elevations above the flood zone. Habitat that is currently occupied will become unsuitable for SBKR over time. The cumulative impacts of habitat loss and land use changes jeopardize the continued existence of the species under existing conditions. New development proposals along Lytle Creek and the loss of natural hydrological processes on the Santa Ana River further threaten the last remaining irreplaceable blocks of SBKR habitat with functioning fluvial processes and will further degrade connectivity to important refugia habitats.

Much of the remaining population is subject to indirect impacts from “edge effects” (Harris 1988) associated with human land uses, such as increased nighttime illumination, weed invasions, disturbances from off-highway vehicles, dumping, etc. (USFWS 1998). The effects of lights on nocturnally active animals such as SBKR are of particular concern. Rodents change their foraging behavior during full moons presumably to reduce their risk of predation (Daly et al. 1992, Wang and Shier 2017) and artificial lights can elicit the same responses (Kotler 1984, Wang and Shier 2017). Illumination associated with human land uses, particularly roads, is an order of magnitude above those that cause behavioral responses or increase risk of predation (Beier 2006). Wang and Shier (2017) found that artificial lighting significantly influenced the probability that SBKR would deplete a resource patch. Although their acute hearing may mitigate some increased predation risk under high levels of natural illumination such as full moons (Kotler 1984, Brown et al. 1988), artificial light levels generated by roads and developments in the vicinity of occupied habitat are high enough to cause significant adverse effects. Numerous roadways, including interstate freeways, and commercial and residential development generate artificial lights that adversely affect adjacent SBKR habitat. When habitat coincides with or is nearby to flood control channels, rodenticide bait targeting ground squirrels can pose a danger to SBKR.

Climate change will likely exacerbate the adverse effects to SBKR of human landscape modifications in the future. Hall and colleagues (2012) projected >4ºF warming in the region by mid-century. Projections of rainfall changes are less certain, but climate model results (Cal Adapt 2018) for example, show 2040-2060 average annual rainfall in the Lytle Creek watershed varying ±2-4 inches from its 1961-1990 average of 29.5 inches, depending on the leanings of the specific climate model (e.g., warmer/drier or cooler/wetter). Furthermore, modeling provides evidence of a greater amount of fall and summer rainfall, instead of the historical winter/spring rainfall pattern (Cayan et al. 2008), changing stream hydrology (e.g., seasonal timing of flows, flood magnitude and return intervals). Climate changes can affect the distribution of plants and

animals (e.g., Crimmins et al. 2011, Kuepper et al. 2005). For example, Hayhoe and colleagues (2004) found that shrub cover in California declines under all climate model scenarios. Vegetation communities could shift their position in the landscape to more suitable climates (e.g., Crimmins et al. 2011), but many opportunities for habitats to shift have been precluded in this landscape by permanent loss of SBKR habitat. Much of the highest quality SBKR habitat is now located between levees within flood control channels and is disconnected from higher elevation refugia. Increased rainfall and additional storm runoff from impervious surface cover associated with human land uses (e.g., pavement and buildings) will cause elevated discharges and peak flows that are likely to destroy SBKR habitat and extirpate SBKR populations unless connectivity to refugia can be provided. This is particularly true for larger catastrophic events that occur infrequently, but now have much more significant consequences to the continued existence of SBKR than they did historically.

7. DEGREE AND IMMEDIACY OF THREAT

As documented above, human land use modifications have greatly reduced the extent, quality, and functionality of SBKR historical habitat. By the 1930s, the historical range of SBKR had been reduced by >90%, and by the time it was listed by the Service as Endangered in 1998, the species was eliminated from >95% of its range (McKernan 1998). Listing SBKR as federally Endangered in 1998 and designating Critical Habitat in 2002 has done little to stop the loss, fragmentation, and degradation of habitat and associated populations. Since the listing, populations in Reche Canyon, South Bloomington, Devil's Canyon, Cable Creek, Bautista Creek, and Etiwanda Fan have been effectively extirpated (USFWS 2018), and the remaining three population centers of Lytle Creek/Cajon Wash, Santa Ana River, and San Jacinto River in total have lost significant potential habitat (5,613 acres; 1,657 acres; and 1,372acres respectively), including critical refugia in upland and higher elevation flood terraces. Shier and colleagues (2018) confirm the isolation, low genetic diversity, and small effective population sizes and recommend "preventing further impacts to SBKR populations and increasing numbers." Dam operations or other hydrologic modifications have largely eliminated the ecological processes necessary for the long-term persistence of SBKR at the largest (Santa Ana River) population and along the San Jacinto River. Active management has yet to be effective in maintaining, let alone increasing, these populations. Thus, the existing status of SBKR is precarious, and there is no clear conservation strategy for the species.

Moreover, additional planned or proposed projects will directly or indirectly impact remaining occupied habitat, including some of the best remaining habitat for the species, ensuring further adverse consequences to SBKR populations. These additional threats to the species are discussed further below.

Lytle Creek/Cajon Wash

Two important projects have significantly affected SBKR in the Lytle Creek/Cajon Wash Critical Habitat unit. A Biological Opinion was issued for the Lytle Creek North Master Planning Community in 2003. The project included 5,120 feet of revetment along the northeast bank of Lytle Creek and construction of 2,466 residential units and infrastructure. The Service estimated that 296 acres of suitable habitat would be lost. As mitigation, 160 acres of floodplain

and wash, including a 56.8-acre “island” of habitat (a proposed refugium), and 5.7 acres of upland terrace were conserved with the objective of protecting as much of the population as would be lost to the project (that is, a net loss of 50%). The 56.8-acre refugium was projected to be high enough to remain above the flood elevation of a 100-year storm event, while the remaining 150.2 acres would be subject to inundation during a 100-year flood. The project analysis anticipated that a significant number of SBKR in the lower elevation floodway and adjacent wash habitat of the conservation area would be lost during high-flow events but would be recolonized from adjacent habitats above flood elevations.

However, a 2005 flood event, estimated at an 8.5-year flood return interval (USFWS 2017), washed part of the island away, and subsequent studies of this reach (Chang 2016, cbec 2018) predicted continued erosion of the island and failure of its southern bank from high flow velocities. Proposals by the project applicant to further armor the island if additional erosion occurs are of unknown efficacy and may have unintended negative consequences to occupied SBKR habitat. Furthermore, using the best available flood data and state-of-the-art sediment transport modeling, the cbec (2018) study shows that the great majority of the island would actually be inundated during a 100-year event, negating its purported value as refugium.

Mitigation also included vegetation thinning and herbicide application on 40 acres on the island, with performance standards for SBKR population numbers established by the Biological Opinion (Lytle Creek supporting documents, various dates). However, this mitigation has failed, and in the 15 years of its existence, the conservation area has not demonstrated it can support a sustainable population. Central to the mitigation performance standards was achieving a population of 72 individuals on the island for 3 consecutive years. Despite the many years of management at the site, this criterion has not been met. All surveys performed using a standard Service protocol found a declining population after 2010.

In conclusion, after the Biological Opinion issued by the Service, and after many years of active conservation management, there was a net loss of SBKR habitat as a result of the Lytle Creek North project. The in-channel refugium in exchange for lost habitat outside the floodplain has failed to date.

The City of Rialto approved the Lytle Creek Ranch development in 2010, which is undergoing an Endangered Species Act section 7 consultation with the Service. The project proposes ~8,407 homes on a 2,447-acre site, which includes high quality SBKR habitat supporting a relatively large population and upland terrace habitats that currently function as refugia during floods.

According to the Service (May 24, 2013), ~1,920 acres of the proposed Lytle Creek Ranch project falls within SBKR Critical Habitat and about 1,191 acres of that (62%) would be adversely modified by the project. According to the applicant, 489 of 700 acres of occupied habitat would be conserved, with additional habitat restored to total 529 acres. Thus, even under the applicant’s mitigation proposal, 171 acres of occupied habitat in one of the last two remaining population centers would be lost, and the proposed conservation measures would rely on unproven restoration practices. Moreover, the Service considers the applicant’s survey methods faulty and assumes that more occupied acres would be impacted than reported by the applicant. Importantly, the habitat proposed for conservation is located largely between the

proposed project revetment and existing levees bounding the north side of the creek. The remaining upland terraces that provide important habitat and a refugium would be developed. As a result, with the exception of the mitigation island described above, all SBKR would remain in the lower elevation and more frequently scoured active channel where they would be vulnerable to medium and large flow flood events. The applicant is proposing to create 40 acres of SBKR habitat off-site and to restore 35 acres onsite, thereby exchanging areas with functioning hydrogeomorphic processes for areas that would need to be artificially maintained and managed.

The proposed mitigation expands conservation activities to the downstream portion of the mitigation island described above for the Lytle Creek North project. Yet the inundation of the island by large flood events leaves the entire Lytle Creek population without refugia and subject to loss. Thus, even in light of the lack of success of previous mitigation attempts on the island, and its inundation during large flood events, the island is still being proposed to compensate for the loss of functioning habitat and refugia on the terraces adjacent to the active channel.

Within this last hydrologically intact reach of remaining SBKR habitat on Lytle Creek, the project proposes to build ~7 miles of revetments, which will constrict the channel and create higher velocity flows with increased scour and erosion. The upland terraces outside the floodplain would be developed, and remaining individuals on the project site would be forced into the highly active flood channel. The increased scour from the project would create bare ground unsuitable for SBKR for long periods of time. Studies by cbec (2018) also showed loss over time of the fine, sandy sediments essential to SBKR from the modified hydrology. This effect extended to the downstream conservation banks. If the Lytle Creek Ranch project is built, there will be no functional flood refugia on this reach of Lytle Creek, which brings into question the long-term viability of this area for SBKR. This would be a highly significant loss of habitat in one of the two remaining population centers for the species.

The Service and Endangered Habitats League have independently offered modified project designs to more effectively mitigate the effects of the proposed development and retain viable refugia. (USFWS 2018, FORMA 2015). Despite an economic analysis showing viability for a modified project (Developers Research 2016), no such redesign has been undertaken by the project proponent. The outcome of federal permitting by the U.S. Army Corps of Engineers (Army Corps) and Service is unknown at the time of petition submittal. According to Service correspondence though, the project applicant has “elevated” its concerns to Service headquarters in Washington DC, potentially politicizing this agency decision-making. (USFWS 2018)

The CEMEX mining company is also processing a take permit for SBKR via an Army Corps section 7 consultation to reestablish aggregate mining in the Lytle Creek channel. (USACE 2015). In 2005, high flows caused a levee breach. Subsequent to the breach, a large mining pit within the channel has been filling. A more natural flow regime has also resulted, with less scour in the channel and vegetation regrowth. The current consultation calls for levee reconstruction.

The outcome of the consultation, the configuration of new levees, and ultimate creek hydrology are unknown at present. However, levee repair will of necessity reverse to some degree the beneficial effects of the 2005 breach on channel hydrology. If, as is likely, the pit or portions thereof continue to fill, however, the current detention basin function of the pit will diminish,

increasing inundation of the island during high flow events (cbec 2018). This fact further heightens the dire consequence of losing terrace refugia as proposed by the Lytle Creek Ranch development.

Santa Ana River

A Biological Opinion was issued for the construction and operation of the SOD on the upper Santa Ana River (USFWS 2002b). The CEQA and NEPA documents for construction and operation of SOD had anticipated that operation of SOD would eliminate natural fluvial processes and associated flooding of habitats on the fan of the Santa Ana River where SBKR occur. The Biological Opinion anticipated that water releases from SOD would be designed and implemented to mimic natural flooding of fan habitats rejuvenating scrub habitats on the fan that support SBKR. Flooding of these habitats would re-set affected parts of the fan to early successional changes preferred by SBKR. However, these releases have not been implemented by the U.S. Army Corps of Engineers (ACOE) and the sponsoring Flood Control Districts, nor are they being planned. The project proponents were also required to fund a large endowment (~$6,000,000) for long-term management and enhancement of the Woollystar Preserve Area to improve habitat quality for SBKR and other species (USFWS 2002b). Long-term management has generally consisted of weed removal to improve habitat quality, which has not been successful (Montgomery 2011). There is currently litigation pending against the ACOE to reinitiate a section 7 consultation with the Service and to compel releases and implement other mitigation measures in the original Biological Opinion for the project.

Not only were project impacts to SBKR not adequately mitigated through the Biological Opinion, USFWS permitting allowed the fundamental hydrological processes maintaining SBKR habitat along the Santa Ana River to be lost, and the largest of the remaining functioning SBKR habitat blocks to be permanently altered. This situation is especially dire in light of the negative trajectory of SBKR in the other large habitat block at Lytle Creek/Cajon Wash, and makes protection of SBKR habitat in Lytle Creek/Cajon Wash imperative.

To investigate the potential efficacy of water releases from SOD, San Bernardino Valley Municipal Water District and San Bernardino Valley Water Conservation District have studied flood scenarios, with discouraging results (ICF 2018). Even with theoretically maximal releases from the dam, coupled with 100-year floods on Mill Creek and other tributaries, there are no significant overbank flows out of the incised channel, meaning that there would be no rejuvenation of the floodplain to reset vegetation succession. There are also major operational and institutional obstacles to obtaining water releases for habitat of *any* magnitude from the dam.

Other Habitat Conservation Plans (e.g., the Wash Plan and Upper Santa Ana River HCP) would affect development authorizations and conservation of SBKR. For example, the Public Review Draft Wash Plan Habitat Conservation Plan (HCP, ICF 2018) would allow 680 acres of impact in exchange for ultimately conserving 1,622.5 acres of habitat for the species. About half of the conserved acreage is currently considered medium or high suitability habitat.

San Jacinto River/Bautista Creek

The status and trajectory of SBKR in the San Jacinto River and Bautista Creek block of habitat are also negative. The Service now considers SBKR extirpated from Bautista Creek, and trapping studies suggest relatively low rates of occupancy of suitable habitat elsewhere (Biological Monitoring Program 2016). SBKR is covered by the Western Riverside MSHCP, but conservation efforts are well below goals for the species (4,400 acres of conserved habitat, 75% of which is to be occupied). Given the Service's assessment of the remaining suitable habitat in this block (2,403 acres, USFWS 2018), it appears the MSHCP conservation goal for SBKR is not feasible without a massive habitat creation effort. SBKR habitat creation has not yet been successfully implemented. In addition, recent efforts to translocate SBKR, required by a Biological Opinion to mitigate loss of habitat resulting from a recharge basin in the San Jacinto riverbed, have failed. Additional projects (e.g., San Jacinto River Levee Project Stage 4 project, KPC Promenade (City of San Jacinto), Eastern Municipal Water District San Jacinto River floodplain recharge basins) are being planned or are under consideration that would adversely affect additional SBKR habitat.

8. IMPACT OF EXISTING MANAGEMENT EFFORTS

SBKR conservation to date has been under the purview of the Service under sections 7 and 10 of the Federal Endangered Species Act (ESA). Based on an extensive review of the majority of Biological Opinions issued under section 7 of the ESA (40) and five HCPs issued under section 10 of the ESA since SBKR was listed, conservation of SBKR can be reduced to three basic strategies: (1) relocation, (2) habitat restoration, and (3) purchase of mitigation credits from mitigation banks (almost exclusively the Lytle Creek and Cajon Wash banks). There are significant problems with all three strategies.

Relocation of SBKR has taken two forms: movement of SBKR from a project area to adjacent habitat, and large-scale relocation of SBKR from one geographic area to another. In only one instance was either form of relocation at least partially successful, and that was a translocation of individuals to a site already occupied by SBKR. The former strategy involved the movement of SBKR caught within a fenced project area to areas outside a fenced project area. The strategy has rarely considered the impact of the relocation to existing SBKR populations outside the fencing, nor has it necessarily required the habitat outside the fenced area be suitable for SBKR. There has been no substantive effort to determine the fate of the relocated SBKR in any of these projects. This mitigation strategy has been the most common requirement in the Biological Opinions and has accomplished nothing substantive or quantifiable with regard to ensuring SBKR survival and persistence.

Habitat restoration has been a common element in the Biological Opinions and HCPs. Habitat restoration has not yet resulted in persistently occupied SBKR habitat. Moreover, there is no requirement in any of the Biological Opinions or HCPs that SBKR occupation be confirmed before occupied SBKR habitat is taken. This mitigation strategy of habitat restoration has not been effective in compensating for loss of habitat.

Purchase of lands in available mitigation banks, mostly in the Lytle-Cajon confluence and Cajon Creek, but also in a small bank near Mill Creek, is also a common requirement in Biological Opinions. However, like all mitigation banks, the purchase of credits in the Lyle and Cajon mitigation banks still results in a *net* loss of SBKR habitat, and permanent impacts to SBKR populations in project impact locations. When using a bank to mitigate project impacts to SBKR habitat, the project applicant is exchanging the protection of existing habitat within the bank for the loss of habitat outside of the bank. For example, mitigation at a 1:1 ratio would result in a 50% net loss of habitat (purchase of 1-acre of credits in the bank for each acre of habitat lost). Additionally, the Judson/Brown Preserve is small, hydrologically disconnected, and management for SBKR habitat poses a conflict with California gnatcatcher management objectives.

Despite the above inherent limitations, the Lytle and Cajon banks – and their financial success – are rare encouraging notes for species conservation. In the majority of the Cajon Creek bank, rejuvenating fluvial processes increase habitat suitability and likelihood of SBKR persistence over the long-term. SBKR trapping started there in 2017 and shows presence/absence of SBKR rather than population size. For the Lytle bank, about half is outside the active floodplain, meaning that those lands will need long-term intensive management. Surveys for SBKR in the Lytle bank within the last 10 years are limited. Both banks have management plans in place, but implementation of management actions is in early stages, with uncertain prospects for long-term efficacy. It must be stressed that the Lytle Creek (182-acre) and Cajon Wash (1,300-acre) banks in isolation are far too small in size and population, and too vulnerable to stochastic events, to sustain the species genetically.

When the HCPs are specifically evaluated, none includes a population viability analysis or a minimum population viability analysis for SBKR. Instead, they call for habitat restoration, which as described above, has not been successful, with no clear or credible monitoring strategy or abundance/occupation targets.

Ultimately, the Service's current approach to conserving SBKR has been inconsistent and has relied on unproven mitigation tactics. Of the three prevalent management strategies by USFWS in its permitting decisions, two (relocation and restoration) have not been effective to date, and the third (mitigation banking) has both inherent limitations and significant on-the-ground uncertainties regarding long term benefits to the species. The overall result has been a substantial and ongoing loss of SBKR and SBKR habitat since the species' listing. The existing federal listing, while theoretically an alternative regulatory mechanism to state listing, has in reality proven ineffective.

In the sections below, we describe some of the mitigation and management activities that have occurred in the three remaining SBKR population centers.

Santa Ana River

As described above, a Biological Opinion was issued for the Santa Ana River Mainstem Project and SOD (USFWS 2002b). Operation of the SOD eliminated natural fluvial processes and removed major flood flows in the mainstem portion of the Santa Ana River block of SBKR habitat. The anticipated water releases identified in the Biological Opinion to mimic natural

scouring and vegetation succession patterns have not been implemented. Management of the Woollystar Preserve Area (WSPA) has generally consisted of weed removal, which has not been successful (Montgomery 2011). In addition to this unsuccessful management, subsequent studies of potential water releases from the dam (as described above) have disclosed that fixed engineering constraints render the Biological Opinion's water release strategy largely moot.

The majority, but not all, of the remaining potential SBKR habitat on the Santa Ana River falls either within the WSPA or the Santa Ana River Wash Plan Habitat Conservation Plan (Wash Plan HCP) being developed by the San Bernardino Valley Water Conservation District (ICF 2018) or is land owned by the San Bernardino Flood Control District (SBCFCD). The SBCFCD lands are managed to maintain flood capacity rather than for SBKR persistence or benefit. Channel maintenance has, at times, occurred under an emergency process without consideration of SBKR or mitigation of impacts to the species. Flood district lands are not secure. The SBCFCD has sold upland SBKR refugia along City Creek in the Highlands area, as well as upland habitat in Etiwanda Fan near Rancho Cucamonga, for development purposes.

The Wash Plan HCP, which also incorporates some BLM properties, is expected to be completed in late 2019. As proposed by the draft Wash Plan HCP, 570.9 acres of permanent impacts and 109.1 acres of temporary impacts to SBKR would be offset by conservation of 1,622.5 acres of conserved and managed lands. However, over half (54%) of the total Wash Plan HCP Preserve SBKR conservation lands are considered low or very low suitability for SBKR, and only 18% of the conservation lands are considered high suitability for SBKR (ICF 2018). While the plan impacts relatively little highly suitable habitat, and seeks to balance interests, it nevertheless would permit the continued loss of SBKR habitat and relies on unproven management measures.

Further downstream, the Upper Santa Ana River HCP is being undertaken primarily to address the endangered Santa Ana suckerfish, but will propose some SBKR impacts in retention basin facilities. Both the Wash Plan HCP and the Upper Santa Ana River HCP are properly coordinating with state and federal regulatory agencies to address specific impacts to SBKR and are being designed to meet both state and federal permitting standards. However, the effect of the loss of natural hydrology on the Santa Ana River population due to SOD remains an overwhelming obstacle to the viability of this population over the long term. To date, efforts to enhance habitat quality downstream of the dam have been unsuccessful in establishing persistently occupied habitat.

San Jacinto River

SBKR habitat in this area falls under the Western Riverside County Multiple Species Habitat Conservation Plan (WRC MSHCP), implemented by the Western Riverside County Regional Conservation Authority (RCA 2003). Conservation objectives for SBKR include 4,440 acres of conserved habitat, of which 75% (3,300 acres) is to be occupied, and at least 20% of the occupied habitat is to support medium to high population densities. Monitoring for SBKR in 2015 demonstrated that there were only 451 acres of occupied habitat in the MSHCP preserve, far short of the MSHCP conservation objective for this species (Biological Monitoring Program 2016). In light of future proposed projects along the San Jacinto River (e.g., San Jacinto River

Levee Project Stage 4 Project, etc.), there is low probability of the WRC MSHCP achieving its conservation objectives for this species.

Furthermore, as part of a reconsultation under ESA section 7 with the Service, SBKR were translocated as mitigation for an Eastern Municipal Water District water recharge project that impacted occupied habitat. The RCA implemented a Vegetation Control Plan in this area to improve habitat suitability for the translocated individuals. However, no SBKR were detected in the translocation area (Biological Monitoring Program 2016), suggesting that this mitigation effort failed. Thus, additional occupied habitat in the San Jacinto River was lost as a result of the water recharge project and not adequately mitigated, and additional water recharge projects are being contemplated on EMWD lands in the San Jacinto River.

Lytle Creek/Cajon Wash

Vulcan Materials Corporation owns and operates the Cajon Wash Habitat Conservation Area on Cajon Wash and Lytle Creek, totaling about 1,300 acres. It is both a state and federally permitted mitigation bank. Wildlands, Inc. established the 182-acre Lytle Creek Conservation Bank in 2014 to provide Service-approved mitigation credits for SBKR. CDFW is considering using the Bank for mitigating State of California-permitted impacts to SBKR. Funding for management derives from endowments, and management plans have been developed for both banks, with implementation of those plans in early stages.

9. SUGGESTIONS FOR FUTURE MANAGEMENT

The most critical actions to protect existing SBKR populations are: (1) preventing additional significant loss of suitable habitat and particularly occupied habitats and those with a functional hydrologic system, and (2) expanding areas occupied by SBKR. Clearly, preventing the additional loss of habitat requires preventing the direct loss of habitat via land use conversion, which has still occurred via Federal Endangered Species Act consultations with the Service. The proposed loss of occupied habitat by the Lytle Creek Ranch project would continue this trend. Developments should be permitted only if impacts avoid occupied habitat with long term biological viability. Stronger hazard zoning for floodplains is warranted in jurisdictions with SBKR habitat so that there is no further channelization of creeks.

In addition to habitat loss, SBKR has been affected negatively by changes in ecological processes, habitat fragmentation, edge effects, and invasion by nonnative species. Developing management actions to prevent loss of currently suitable habitat adversely affected by factors such as altered hydrologic processes and nonnative plant invasions will also be required to secure the long-term persistence of SBKR in areas it currently occupies.

Additional conservation banking should be encouraged, such as on the Lytle Creek Ranch development site, where a smaller project could be coupled with highly marketable credits.

To date, as shown by the results of numerous Section 7 consultations, techniques for enhancing SBKR habitat have not proven successful. Nevertheless, such efforts should continue, noting, for example, that soil restoration on the Cajon bank has shown initial promise in a limited location.

The management activities discussed below should be explored for their efficacy in enhancing SBKR populations, but these activities should not be considered "mitigation measures" for loss of additional occupied habitat until they are proven successful in other contexts (such as those described below) and the status of SBKR is stable. They are presented here merely to be complete.

Enhancing Sediment Transport – SBKR habitat requires active fluvial processes that in many areas have been modified, leaving unsuitable conditions. For example, reaches of Lytle Creek have a boulder-cobble substrate unsuitable for SBKR. Increased sand deposition could hypothetically improve the substrate for SBKR. Installing culverts under Glen Helen Parkway to allow sand to move downstream, would be beneficial. Glen Helen Parkway was widened in 2006 to accommodate the Lytle Creek North development without a section 7 consultation for impacts to SBKR. It was designed with three small culverts and one large culvert to allow water through, but the culverts essentially prevent most sediment from passing under the road. San Bernardino County Flood Control District has been mechanically straightening the channel upstream to ensure that the water flows through the main culvert (creating further impacts to SBKR habitat). The creek downstream of Glen Helen will continue to be deprived of sand that is captured behind Glen Helen Parkway. Modifying the structures that provide for water flow under Glen Helen Parkway or bridging the creek to allow transport of sand during small and moderate events would decrease the time required to reestablish SBKR use areas in the scour zones. It could promote connectivity across scour areas and maximize the area available for use by SBKR.

Nonnative Plant Management – Invasion of nonnative annual grasses into SBKR habitat reduces its quality. Management activities that reduce cover of nonnative annual grasses and promote native annuals, would benefit SBKR. Active vegetation management may be one of the most cost-effective management measures for SBKR, but its ultimate efficacy and benefit are unproven. The upper Santa Ana River, which is now deprived of fluvial processes, is a logical place for testing such measures.

Translocation of SBKR – Moving SBKR into suitable but unoccupied habitats may be necessary to recover the species. This assumes that individual SBKR and suitable receiver sites would be available for such translocations. However, translocations have had very limited success. In 2012, 60 SBKR were relocated within the San Jacinto River floodplain to a receiver site just upstream. In the following year, only one SBKR was captured at the receiver site, and zero to one was trapped in the 5 years following. In 2015 and 2016, 366 SBKR were relocated from a site within the Santa Ana River floodplain to the Cajon Conservation Area. Only 59 SBKR were captured at the receiver site in 2018, a low success rate of the translocation.

Captive Propagation – If SBKR could be successfully translocated, captive propagation may be a means of providing individuals. However, the limiting factor for this species is not reproductive capacity but rather a lack of suitable habitat across its range. Thus, methods for captive propagation should not be explored until there is a conservation rationale. The primary threat to SBKR is habitat loss, the conservation and recovery strategy must be to conserve as much remaining habitat as possible.

Restoration of Hydrological Processes – Outside of Lytle Creek-Cajon Wash, all SBKR habitat is downstream of flood control structures that have eliminated historical flooding regimes. The result has been markedly diminished flood flows and associated sediment dynamics and has reduced sediment contributions from tributary streams, leaving systems that are unable to rejuvenate late-successional habitats that eventually become unsuitable for SBKR. Indeed, recent studies have shown that, due to construction constraints, even maximal releases from SOD would be too small to hydrologically connect the historical floodplain to the currently deeply incised channels along the Santa Ana River. However, it might be possible to install berms, modify streambed elevation with transported sediment, or construct channels to create overbank flows from Mill Creek or other tributaries. Further investigation is warranted, with close attention to unintended consequences and potential adverse effects downstream of the berms on high density populations of SBKR and other species of concern, such as the Santa Ana sucker. New – and heretofore unprecedented – collaborations between the ACOE, local flood control districts, local water districts, and state and federal wildlife agencies would be essential. Maintaining natural hydrology and floodplain integrity and connectivity along Lytle Creek and Cajon Wash remains a top priority.

In addition, the current population status of SBKR in existing conserved lands is unclear, and a range-wide monitoring program is necessary to make informed decisions on management and any permitted conversion of habitat. Population viability and minimum viable population analyses would be useful tools for developing recovery objectives and targets for population management and would help planners and managers better understand the implications of development decisions.

California Endangered Species Act Protections

An endemic taxon of California, SBKR is part of the unique biological heritage of the state. It has been recognized as worthy of protection and conservation by the Service. However, federal Endangered Species Act processes have not halted its precipitous decline. A new and objective look at SBKR status, trends, and conservation needs is essential. Innovative and creative conservation actions are needed to be based upon an assessment of what has not worked in the past and what has promise in the future. While the federal Endangered Species Act process is not providing these functions, the State of California is well suited to do so. CESA requires that "all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved."

The tools currently available to the State to conserve and manage SBKR – Streambed Alteration Agreements and the CEQA comment process – are either inherently limited in scope (the former) or have proven ineffective (the latter). For example, recommendations offered by the California Department of Fish and Wildlife during the Lytle Creek Ranch CEQA process were ignored by the lead agency.

State listing will also remedy a serious limitation in the federal system that has contributed to SBKR decline. Due to proximity of SBKR habitat to river systems, federal permitting for SBKR impacts typically occurs via section 7 consultations (with resulting Biological Opinions)

requested by the Army Corps of Engineers in association with impacts to Waters of the United States, rather than through Habitat Conservation Plans under section 10 of the ESA. Indeed, a review of all Habitat Conservation Plans and Biological Opinions issued by the Service from 1997 to the present shows 61 (94%) Biological Opinions and 5 (6%) Habitat Conservation Plans.

Unlike a Habitat Conservation Plan and section 10 consultation under the ESA, there is no general requirement in a section 7 consultation to minimize and mitigate the impacts of the take of an endangered species to the maximum extent practicable. Indeed, unless the extreme case of jeopardy to the very existence of a federally endangered species is reached, *no mitigation whatsoever is required* (per the Endangered Species Consultation Handbook, "It is not appropriate to require mitigation for the impacts of incidental take." USFWS and NMFS 1998). Rather, section 7 seeks to minimize take as long as such measures are "reasonable and prudent" and "minor" in extent. Under these circumstances, and with more than 9 of every 10 take permits issued through section 7 rather than section 10, it is not surprising that mitigation for impacts to SBKR under the federal listing has failed to compensate for the substantial loss of habitat that has occurred.

To the contrary, under the California Endangered Species Act (CESA), project applicants would not be able to circumvent providing effective mitigation. Under CESA, take must be minimized and "fully mitigated." Elevating the regulatory status of SBKR in California to Endangered will provide the Department of Fish and Wildlife a heightened level of review and regulatory authority to arrest the decline of SBKR. Only with sufficient mitigation on all projects can the negative trends in SBKR population begin to be reversed. U.S. Army Corps regulations are no substitute, as its focus is on wetlands and Waters of the U.S. rather on the surrounding uplands that are vital to SBKR.

Finally, there is strong and ample evidence of the politicization of federal regulatory agencies under the current Executive Administration and the ascent of an anti-science and anti-regulatory agenda. Scientific panels have been disbanded and there is open hostility to objective science, such as in the realm of climate change. State listing is a necessary backstop to the disregard of law and science by federal environmental agencies under the current Administration.

10. AVAILABILITY AND SOURCES OF INFORMATION

Literature cited

Behrends, P., M. Daly, and M.I. Wilson. 1986. Range use patterns and spatial relationships of Merriam's kangaroo rats (*Dipodomys merriami*). Behaviour 96:187-209.

Beier, P. 2006. Effects of artificial night lighting on Terrestrial mammals. Pgs. 19-42 in Rich, C. and T. Longcore (eds.) Ecological Consequences of Artificial Night Lighting. Island Press.

Biological Monitoring Program. 2016. Western Riverside County MSHCP Biological Monitoring Program 2015 San Bernardino Kangaroo Rat Survey Report. Prepared for the Western Riverside County Multiple Species Habitat Conservation Plan. Riverside, CA. Available online: http://wrc-rca.org/about-rca/monitoring/monitoring-surveys/.

Brown, J.H. and B.A. Harney. 1993. Population and community ecology of heteromyid rodents in temperate habitats. *In*: H.H. Genoways and J.H. Brown (eds.), Biology of the Heteromyidae, pp. 539-574. Special Publication No. 10, the American Society of Mammalogists; August 20, 1993.

Brown, J.H., B.P. Kotler, R.J. Smith and W.O. Wirtz II. 1988. The effects of owl predation on the foraging behavior of heteromyid rodents. Oecologica 76:408-415.

Cal-Adapt. 2018. Annual average precipitation for the Lytle Creek watershed. http://cal-adapt.org/tools/annual-averages/#climatevar=pr&scenario=rcp45&lat=34.24639&lng=-117.47277&boundary=hydrounits&units=inches%20per%20day

Cayan, D.R., E.P. Maurer, M.D. Dettinger, M. Tyree and K. Hayhoe, 2008, Climate change scenarios for the California region, Climatic Change, Vol. 87, Suppl. 1, 21-42 doi: 10.1007/s10584-007-9377-6

Cbec Eco Engineering (cbec). 2018. Technical Memorandum on the Potential Impacts to San Bernardino Kangaroo Rat Habitat. Project: 16-1011-2 Lytle Creek Sediment Transport and Hydrodynamic Modeling. From: Gavin Downs, Chris Campbell, To: Dan Silver. November 29, 2018.

Chang, Wayne (Chang Consultants). 2016. Hydraulic Sediment Transport Analysis for CEMEX Lytle Creek Quarry. March 15.

Crimmins, S.M., S.Z. Dobrowski, J.A. Greenberg, J.T. Abatzoglou, and A.R. Mynsberge. 2011. Changes in climatic water balance drive downhill shifts in plant species' optimum elevations. Science 331:324-327.

Daly, M., P.R. Behrends, M. Wilson, and L.F. Jacobs. 1992. Behavioural modulation of predation risk: moonlight avoidance and crepuscular compensation in a nocturnal desert rodent, *Dipodomys merriami*. Anim. Behav. 44:1-9.

Developers Research. 2016. Technical Memorandum on the Economic Feasibility of the Balanced Alternative for the Lytle Creek Ranch Specific Plan. June 2016.

Eisenberg, J. 1993. Ontogeny. *In*: H. H. Genoways and J. H. Brown (eds.), Biology of the Heteromyidae, pp. 479-490. Special Publication No. 10, the American Society of Mammalogists; August 20, 1993.

Fahrig, L. 2003. Effects of habitat fragmentation on biodiversity. Ann. Rev. Ecol. Syst. 34:487–515.

FORMA. 2015. Exhibits and Specific Plan Objectives & Comments for the Lytle Creek Specific Plan Balanced Alternative. December 16.

French, N.R., B.G. Maza, and A.P. Aschwanden. 1967. Life spans of *Dipodomys* and *Perognathus* in the Mojave Desert. Journal of Mammalogy 48:537-548.

Gard, Mark, US Fish and Wildlife Service, Lytle Creek Rainfall Analysis, Memo to File, March 21, 2017

Goldingay, R.L., P.A. Kelly, and D.F. Williams. 1997. The kangaroo rats of California: endemism and conservation of keystone species. Pacific Conservation Biology 3:47-60.

Hall, E.R. 1981. The Mammals of North America, 2nd Edition. John Wiley and Sons, New York.

Hall, A., F. Sun, D. Walton, S. Capps, X. Qu, H. Huang, N. Berg, A. Jousse, M. Schwartz, M. Nakamura, and R. Cerezo-Mota. 2012. Mid-century warming in the Los Angeles Region. UCLA Institute of the Environment and Sustainability, Working Paper #11. Available at: http://escholarship.org/uc/item/6v88k76b. University of California, Los Angeles, Los Angeles, CA.

Hanes, T.L., R.D. Friesen, and K. Keane. 1989. Alluvial scrub vegetation in coastal southern California. *In*: D.L. Abell (tech. coord.). Proceedings of the California Riparian Systems Conference: Protection, management, and restoration for the 1990s. September 22-24, 1988. Davis, CA. Gen. Tech. Rep. PSW-110. Berkeley, CA: Pacific Southwest Forest and Range Experiment Station, Forest Service, USDA.

Harris, L.D. 1988. Edge effects and conservation of biotic diversity. Conservation Biology 2:330-332.

Hayhoe, K., D. Cayan, C.B. Field, P.C. Frumhoff, E.P. Maurer, N.L. Miller, S.C. Moser, S.H. Schneider, K. Nicholas Cahill, E.E. Cleland, L. Dale, R. Drapek, R.M. Hanemann, L.S. Kalkstein, J. Lenihan, C.K. Lunch, R.P. Neilson, S.C. Sheridan, and J.H. Verville. 2004. Emissions pathways, climate change, and impacts on California. PNAS 101(34):12422-12427.

ICF. 2018. Draft Public Review Wash Plan. January.

Jenkins, S.H., A. Rothstein, and W.C.H. Green. 1995. Food hoarding by Merriam's kangaroo rats: a test of alternative hypotheses. Ecology 76(8):2470-2481.

Jones, W.T. 1993. The social systems of heteromyid rodents. *In*: H. H. Genoways and J. H. Brown (eds.), Biology of the Heteromyidae, pp. 575-595. Special Publication No. 10, the American Society of Mammalogists; August 20, 1993.

Kotler, B.P. 1984. Effects of illumination on the rate of resource harvesting in a community of desert rodents. American Midland Naturalist 111:383-389.

Kueppers, L., M. Snyder, L. Sloan, E. Zavaleta, and B. Fulfrost. 2005. Modeled regional climate change and California endemic oak ranges. Proceedings of the National Academy of Sciences of the United States of America 102(45):16281-16286.

Lidicker, W.Z., Jr. 1960. An analysis of intraspecific variation in the kangaroo rat *Dipodomys merriami*. University of California Publications in Zoology 67:125-218.

Lindenmayer, D.B. and G. Luck. 2005. Synthesis: thresholds in conservation and management. Biological Conservation 124:351-354.

Lytle Creek supporting documents. Various dates.

McKernan, R.L. 1997. The status and known distribution of the San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*): field surveys conducted between 1987 and 1996. Prepared for U. S. Fish and Wildlife Service.

MEC Analytical Systems. 2000. Final report of findings for the San Bernardino kangaroo rat and habitat relationships 1999 field survey for the Santa Ana River alluvial fan, San Bernardino County, California. Prepared for U.S. Army Corps of Engineers, Los Angeles District.

Montgomery, S.J. 2011. San Bernardino kangaroo rat percent area occupied (PAO) survey at the Santa Ana River Woolly Star Preserve Area, May-June 2011. Unpublished report prepared for U.S. Army Corps of Engineers.

Murray, A.L., A.M Barber, S.H. Jenkins, and W.S. Longland. 2006. Competitive environment affects food-hoarding behavior of Merriam's kangaroo rats (*Dipodomys merriami*). Journal of Mammalogy 87(3): 571-578.

Mussetter Engineering. 1999. Geomorphic evaluation of Santa Ana River alluvial fan and San Bernardino kangaroo rat habitat California. Prepared for U.S. Army Corps of Engineers. MEI project 99-06.

Prugh, L.R., K.E. Hodges, A.R.E. Sinclair, and J.S. Brashares. 2008. Effect of habitat area and isolation on fragmented animal populations. PNAS 105(52):20770-20775.

Reichman, O.J. and M.V. Price. 1993. Ecological aspects of heteromyid foraging. *In*: H.H. Genoways and J.H. Brown (eds.), Biology of the Heteromyidae, pp. 539-574. Special Publication No. 10, the American Society of Mammalogists; August 20, 1993.

Rhodes, J.R., J.G. Callaghan, C.A. McAlpine, C. de Jong, M.E. Bowen, D.L. Mitchell, D. Lunney, and H.P. Possingham. 2008. Regional variation in habitat-occupancy thresholds: a warning for conservation planning. J. Appl. Ecol. 45:549-557.

Root, B. 2008. 2006-2007 San Bernardino Kangaroo Rat Occupancy Survey Analyses from the Woolly Star Preserve Area, San Bernardino County, California. Prepared for the U.S. Army Corps of Engineers. U.S. Fish and Wildlife Service. December.

Root, B. 2010. 2005-2009 San Bernardino Kangaroo Rat Survey Analyses from the Woolly Star Preserve Area, San Bernardino County, California. Prepared for the U.S. Army Corps of Engineers. U.S. Fish and Wildlife Service. September.

Shier, D.M., A. Navarro, E. Gray, and T. Wang. 2018. Range-wide genetics of the endangered San Bernardino kangaroo rat (*Dipodomys merriami parvus*). Final Report for the period

September 2014-September 2018, Federal Permit Number TE-142435-5; State SC-002508.

Smith, R.L. 1980. Alluvial scrub vegetation of the San Gabriel River floodplain, California. Madrono 27(3):126-138.

Tremor, S., D. Stokes, W. Spencer, J. Diffendorfer, H. Thomas, S. Chivers, and P. Unitt (eds.). 2017. San Diego County Mammal Atlas. San Diego Natural History Museum.

U.S. Fish and Wildlife Service (USFWS). 1998a. Endangered and Threatened Wildlife and Plants; Final Rule to List the San Bernardino Kangaroo Rat as Endangered (63 FR 3835 3843).

USFWS. 2002a. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the San Bernardino Kangaroo Rat; Final Rule (67 FR 19812 19845).

USFWS. 2002b. Section 7 Consultation for Operations of Seven Oaks Dam, San Bernardino County, California (1-6-02-F-1000.10).

USFWS. 2008. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the San Bernardino Kangaroo Rat; Final Rule (73 FR 61936 62002).

USFWS. 2009. San Bernardino kangaroo rat (*Dipodomys merriami parvus*), 5-Year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office, August 14.

USFWS. 2017. Lytle Creek Rainfall Analysis. Memo from Mark Gard, Fish and Wildlife Biologist to File. March 21.

USFWS 2018. Lytle Creek RO Packet_2018-821.

U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). 1998. Endangered Species Consultation Handbook: procedures for conducting consultation and conference activities under section 7 of the Endangered Species Act. March.

Wang, T. and D.M. Shier. 2017. Effects of anthropogenic lighting on San Bernardino kangaroo rat (*Dipodomys merriami parvus*) foraging behavior, persistence and fitness. Final Report to USFWS.

Wilcove, D.S., D. Rothstein, J. Dubow, A. Phillips, and E. Losos. 1998. Quantifying threats to imperiled species in the United States: assessing the relative importance of habitat destruction, alien species, pollution, overexploitation, and disease. BioScience Vol. 48:607-615.

Williams, D.F., H.H. Genoways, and J.K. Braun. 1993. Taxonomy. *In*: H. H. Genoways and J. H. Brown (eds.), Biology of the Heteromyidae, pp 38-196. Special Publication No. 10, the American Society of Mammalogists.

Zeng, Z. and J.H. Brown. 1987. Population ecology of a desert rodent: *Dipodomys merriami* in the Chihuahuan desert. Ecology 68: 1328-1340.

Additional relevant literature and reports are provided digitally

Biological consultant (CV enclosed)

Phil Brylski, PhD

Credits

GIS analyses and maps prepared by Streamscape Environmental

Salvador Contreras

Jennifer Mongolo

Individuals supporting the petition

Dr. Wayne Spencer, Conservation Biology Institute, wdspencer@consbio.org

Scott Tremor, San Diego Natural History Museum, stremor@sdnhm.org

Organizations supporting the petition

Defenders of Wildlife

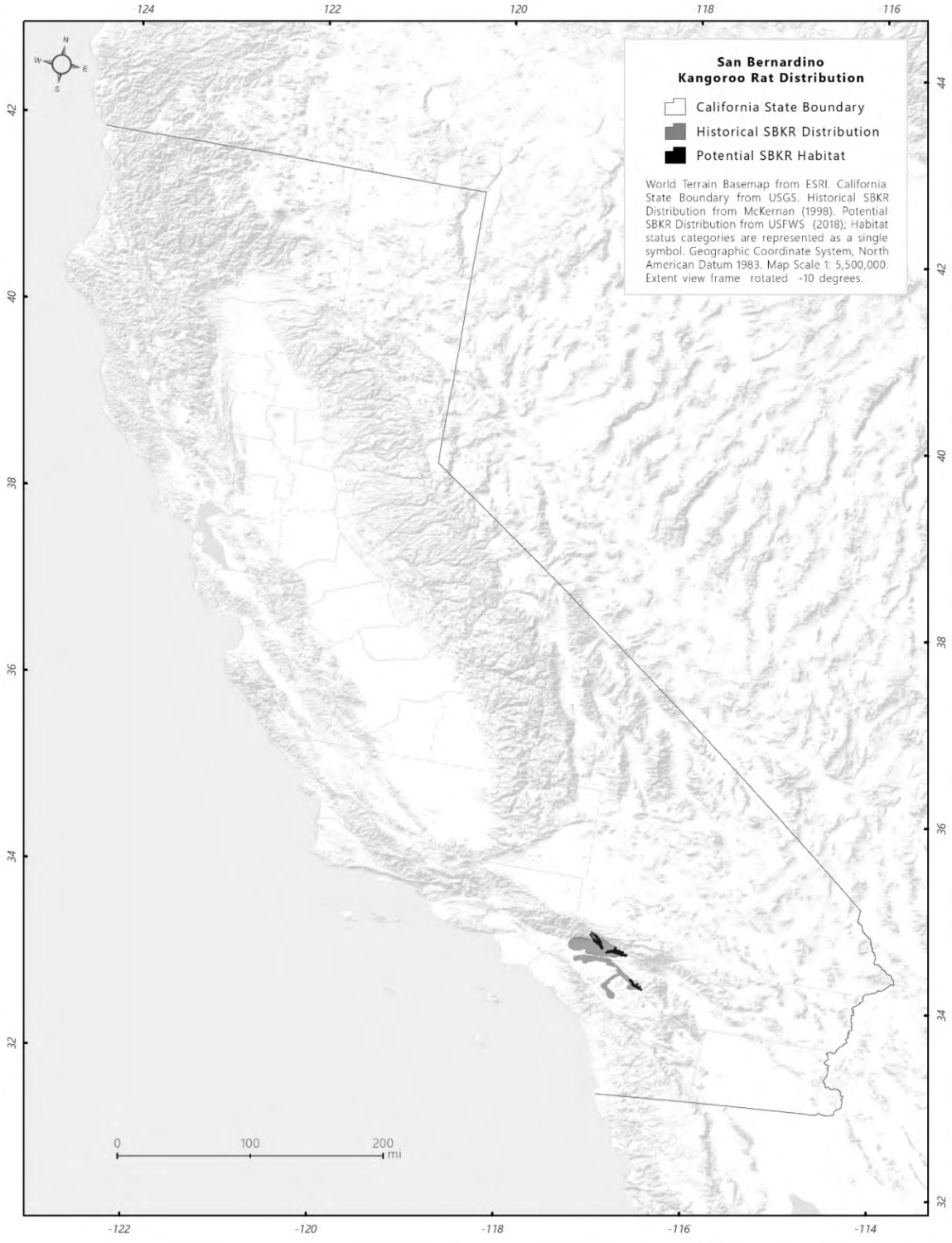
Natural Resources Defense Council

Audubon California

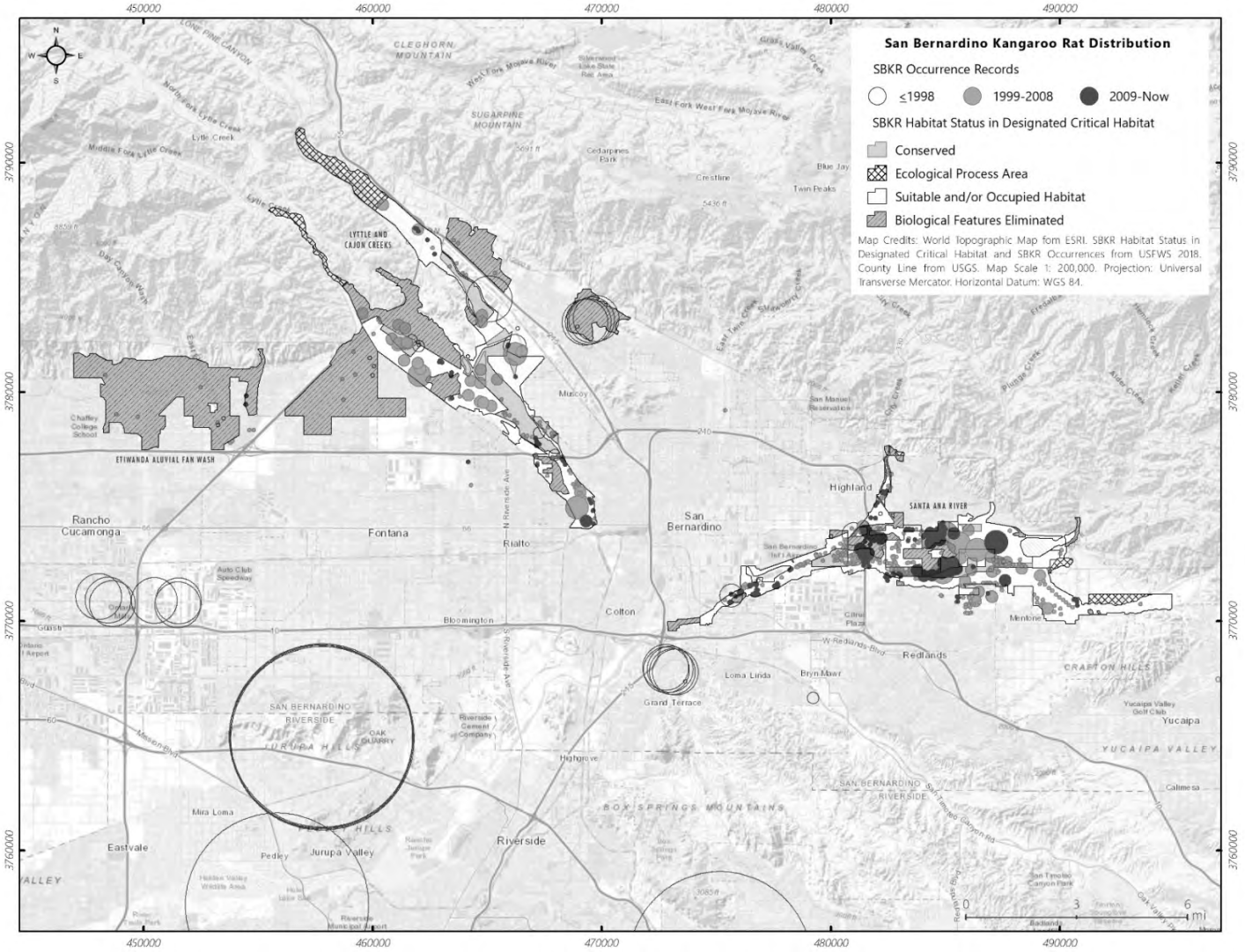
Save Lytle Creek Wash

11. DETAILED DISTRIBUTION MAP

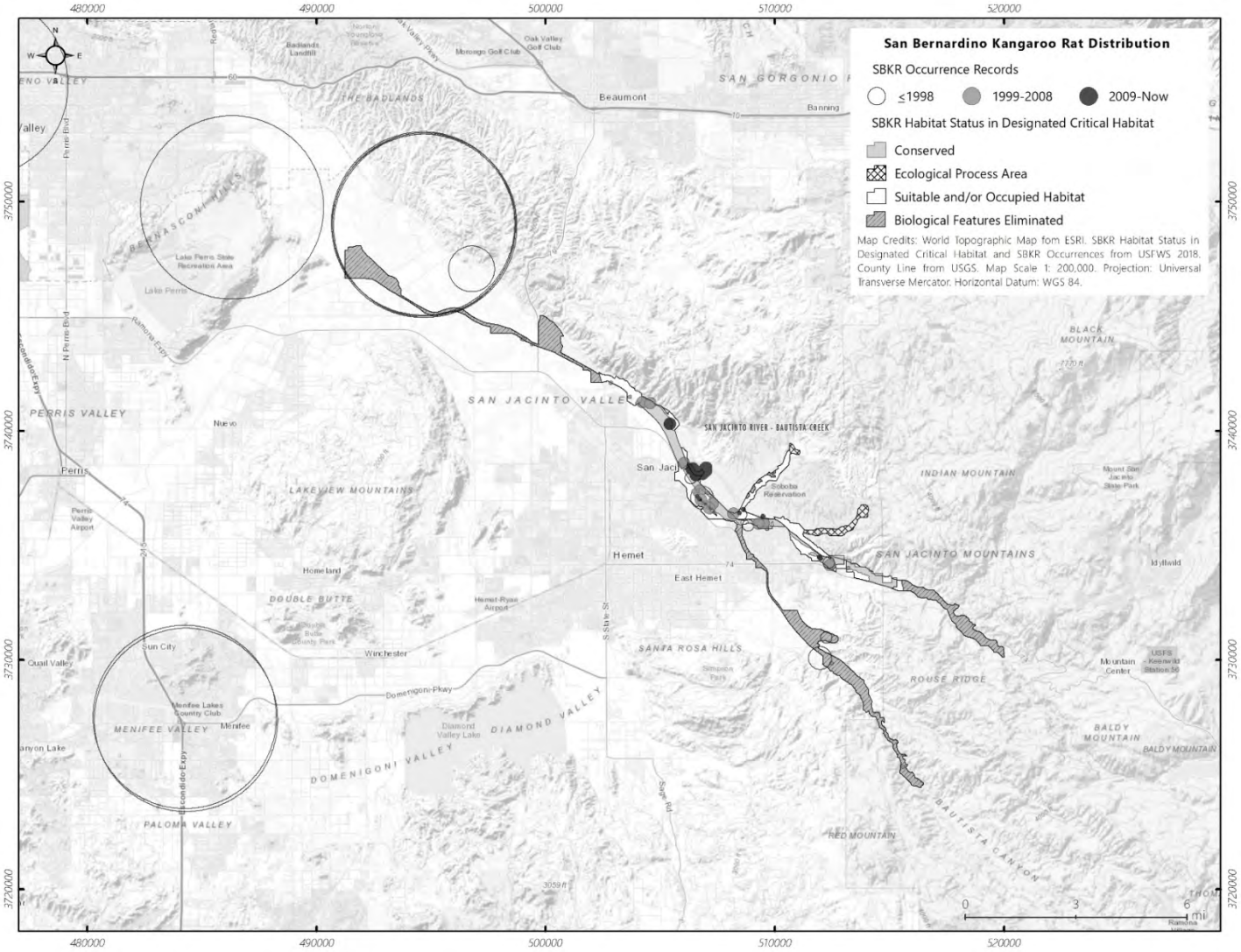
Map 1: Distribution of historical and current, potentially suitable habitat for the San Bernardino kangaroo rat.



Map 2a: San Bernardino kangaroo rat habitat status and occurrence records in the northern portion of its current range. The size of the circle around the occurrence record indicates the level of uncertainty of its location.



Map 2b: San Bernardino kangaroo rat habitat status and occurrence records in the southern portion of its current range. The size of the circle around the occurrence record indicates the level of uncertainty of its location.



White, Braden, Silver and Brylski CVs

Michael D. White, Ph.D.

Michael White Consulting

Dr. White is an ecologist with 30 years of professional experience with conservation planning, environmental regulations, and ecosystem assessment, management, and restoration. Has work has required extensive coordination with local government agencies, state and federal wildlife and land management agencies, local academic and research institutions, non-governmental organizations, private and foundation funders, landowners, and the general public.

Dr. White has served as the lead biologist on many high-visibility and multi-stakeholder projects in California. These included developing management and restoration strategies for the Lower Colorado River Multiple Species Conservation Program, developing a reserve design and adaptive management plan for the Tejon Ranch, producing a conservation framework for Las Californias Binational Conservation Initiative, resource management planning for the Sonoran Desert in California, and identifying conservation priorities and forest management strategies for the Sierra Checkerboard Initiative. In these efforts, he has used an objective science-based approach to develop practical land use and conservation outcomes that are trusted by diverse stakeholders.

From 2004-2008, Dr. White was science advisor to the environmental groups that negotiated the Tejon Ranch Conservation and Land Use Agreement, which conserved 90% of the 270,000-acre Tejon Ranch, the largest private property in California. The Agreement created the Tejon Ranch Conservancy to steward its diverse and unique conservation resources. Dr. White served as the Conservancy's first Conservation Science Director from 2009-2017, where he hired and directed staff to develop and implement Science, Stewardship, and Public Access programs; developed partnerships with universities, governmental agencies, and other nonprofits; helped to develop and implement organizational policies and procedures necessary to obtain the Conservancy's accreditation from the Land Trust Alliance; and worked closely with the Executive Director and Board to acquire funding to purchase over 60,000 acres of conservation easements and support the Conservancy's programs. He led public education tours and taught the California Naturalist course for 3 years as part of developing the Conservancy's volunteer program. Working collaboratively with the landowner, Dr. White prepared the first adaptive management plan for Tejon Ranch, and worked with the landowner and its ranching lessees to raise funding to implement elements of the plan.

Dr. White presently a Visiting Scholar at University of California Berkeley Department of Environmental Sciences, Policy and Management, an Adjunct Associate Professor at San Diego State University Department of Biology, and Principal of Michael White Consulting, which advises nonprofit organizations on conservation and management issues.

EDUCATION

Ph.D. Ecology, San Diego State University and University of California, Davis, 1991. Dissertation: *Horizontal distribution of pelagic zooplankton in relation to predation gradients.*

B.A. Ecology, Behavior and Evolution, University of California, San Diego, 1982.

PERSONAL

Born July 20, 1960, Los Angeles, California (citizen of U.S.A.).
Married.

PROFESSIONAL ORGANIZATIONS AND AFFILIATIONS

Visiting Scholar, Department of Environmental Sciences, Policy and Management, University of California Berkeley 2017-present

Adjunct Associate Professor, San Diego State University 1991-present

Society for Conservation Biology

Southwest Association of Naturalists

Society for Range Management

Natural Areas Association

California Native Plant Society

EMPLOYMENT HISTORY

August 2017 – present. Principal, Michael White Consulting. Providing environmental consulting services to nonprofit organizations in the areas of environmental analyses, habitat and species conservation, land management and monitoring, and fundraising.

July 2017 – present. Visiting Scholar, University of California Berkeley, Department of Environmental Science, Policy and Management. As a Visiting Scholar, Dr. White is continuing his work with Dr. Bartolome and his lab members developing models for conservation management of rangeland resources in California. Building on years of collaborative field ecology studies of grasslands and riparian systems at Tejon Ranch, Dr. White is working with the lab to synthesize these findings into a deeper understanding of system structure and function and implications for conservation management of rangeland resources in an under-studied part of California.

August 2009 – June 2017. Conservation Science Director of the Tejon Ranch Conservancy. Responsible for developing and implementing research, management, and public access programs for 240,000 acres of Tejon Ranch. Responsibilities included research and monitoring, development and implementation of a Ranch-wide Management Plan for conserved lands, science staff supervision, coordination of research projects, fundraising, and annual planning and budgeting.

July 1999 – July 2009. Senior Ecologist and San Diego Director of the Conservation Biology

Institute, Encinitas, California. Providing administrative and fiscal oversight of a four-person operation with a budget of approximately $500K/yr. Responsibilities include annual budgeting, fundraising and proposal preparation, oversight of office contracts, staff timekeeping and project tracking, accounts payable, accounts receivable, project management, and technical studies.

July 1998 – July 1999. Senior Technical Specialist. Ogden Environmental and Energy Services Co., Inc., San Diego, California. Responsibilities included providing technical oversight of the Lower Colorado River Multiple Species Conservation Program project and senior technical support of project staff.

January 1997 – June 1998. Manager, Aquatic Sciences Group. Ogden Environmental and Energy Services Co., Inc., San Diego, California. Managed a group of nine professional aquatic scientists with revenues of approximately $2M/year. Responsibilities included administration, marketing and proposal preparation, strategic planning, annual budgeting and performance tracking, timekeeping oversight, personnel supervision (including direct supervision of four professional biologists), project management, and project technical support.

January 1994 – December 1996. Deputy Manager, Biological Resources Group, Ogden Environmental and Energy Services Co., Inc., San Diego, California. Deputy Manager for a group of 23 professional biologists. Responsibilities included marketing and proposal preparation, strategic planning, annual budgeting, group health and safety program oversight, personnel supervision (including direct supervision of five professional biologists), project management, and project technical support.

September 1989 – July 1994. Senior Ecologist, Ogden Environmental and Energy Services Co., Inc., San Diego, California. Responsibilities included marketing and proposal preparation, project management, project technical support, and direct supervision of three professional biologists.

September 1983 – December 1990. Graduate Assistant, San Diego State University, San Diego, California.

July 1984 – June 1985. Graduate Assistant, UC Davis Tahoe Research Group, Lake Tahoe City and Davis, California.

SELECTED PROJECT EXPERIENCE

Conservation Science Director – Tejon Ranch Conservancy. As the first Conservation Science Director of the new Conservancy, Dr. White was responsible for creating the Conservancy's science and stewardship programs from scratch. This entailed synthesizing existing information, prioritizing research and monitoring efforts, planning and budgeting, developing funding proposals, coordinating researchers and contractors, interfacing with the landowner, overseeing conservation easement stewardship, and hiring and managing staff. He regularly presents to public, as well as academic and professional audiences on the work of the Conservancy.

One of Dr. White's primary responsibilities at the Conservancy was preparing the first adaptive management plan for the conserved lands at Tejon Ranch (called the Ranch-wide Management

Plan [RWMP]). The Tejon Ranch Conservation and Land Use Agreement provides for the continued use of lands under easement by the landowner, the Tejon Ranch Company, for commercial ranching, hunting and other compatible uses. Thus, the focus of the RWMP was to maintain, enhance and restore conservation values within a private, working lands context. Working with contractors, academic partners, and citizen scientists, the Conservancy's Science Program has been inventorying the natural resources on Tejon Ranch, elucidating drivers of ecosystem structure and function, and hypothesizing management actions to enhance resource conditions to inform resource management planning. The RWMP defined the Conservancy's rationale and vision for adaptive management at Tejon, and established Best Management Practices (BMPs) for the landowner's land uses to protect and, where feasible, enhance conservation values.

Following adoption of the RWMP in 2013, Dr. White's focus has prioritized and implemented stewardship actions laid out in the plan. These have primarily involved cattle grazing management to achieve conservation objectives in grasslands and riparian and wetland ecosystems across tens of thousands of acres of Tejon Ranch. Grasslands enhancement projects seek to use cattle to reduce the biomass of nonnative Mediterranean grasses to favor native forb species and improve habitat structure for native animals. Riparian and wetland enhancement projects intend to reduce livestock grazing pressure during summer and fall months to enhance diversity, cover and structure of vegetation communities to improve habitat condition and function. These grazing management projects have required installation and reconfiguration of ranching infrastructure (e.g., fences and water systems) to enable the desired conservation grazing management, which has required extensive coordination with the landowner, ranching operators, funding and permitting agencies, and contractors.

Dr. White facilitated an extensive amount of external research at Tejon Ranch, with over 40 research projects started on the property during his tenure. These projects ranged in scope from species inventories, habitat modeling, population dynamics, climate change responses and adaptation, and various geological investigations. Dr. White served on several graduate committees for Tejon-related projects and has overseen several group projects with universities. He developed and coordinated the first Citizen Science projects at Tejon Ranch, co-taught the Conservancy's California Naturalist (Master Naturalist) coarse to members of the public, and frequently led public tours.

REGIONAL HABITAT CONSERVATION PLANNING, MONITORING, RESTORATION, AND MANAGEMENT

State Wildlife Action Plan Forest and Rangelands Companion Plan Development Team – California Department of Fish and Wildlife. While with Tejon Ranch Conservancy, served as part of a technical advisory group to the Department and their consultant team during the development of the Forest and Rangelands Companion Plan to California's State Wildlife Action Plan revision in 2016. The role of the advisory group was to help identify conservation issues and strategies pertinent to forest and rangeland ecosystems.

California Landscape Conservation Collaboration Technical Advisory Team. While with Tejon Ranch Conservancy, served on the Technical Advisory Team for the development of a Strategic Plan and Scientific Management Framework for the California LCC. The role of the advisory group was to provide technical input to LCC staff on conservation and adaptive management issues in the planning area.

Yuba Foothills Conservation Assessment – The Trust for Public Land. Dr. White prepared a conservation assessment of a 600,000-acre study area in the northern Sierra Nevada foothills. The purpose of the assessment was to identify meaningful conservation objectives and opportunities and provide a case statement for the study area to guide TPL's land conservation work. As part of the assessment, Dr. White conducted a landscape integrity analysis for the entire northern Sierra Nevada foothills subregion as a way of providing a regional context for the conservation values of the study area.

Effective Conservation and Management of the Sonoran Desert of California – The Nature Conservancy. Working with TNC, CBI evaluated ways of increasing the effectiveness of conservation and management over the 6 million-acre portion of the Sonoran Desert ecological region within California. CBI and TNC made use of the Marxan reserve selection algorithm to identify portions of the study area that support specific conservation values, and then identified how existing land ownership and management patterns protect these conservation values from an array of potential threats, including land conversion, inappropriate recreational activities, mining, alternative energy production, and exotic plant species. The results of this project will be used to guide TNC's conservation activities in the region.

Northstar Habitat Management Plan – Booth Creek. Dr. White provided technical review of the Habitat Management Plan (HMP) developed for the 8,000-acre Northstar at Tahoe ski resort in the Martis Valley, California. Development of the HMP was an obligation of the settlement agreement between Northstar and local environmental organizations for which Dr. White served as a technical expert. The Northstar ski resort supports areas of relatively intact late seral conifer forest supporting species such as California spotted owl, pine martin, and northern goshawk, as well as high quality riparian and aquatic habitats, meadows, and deer fawning habitat. The HMP will be used to guide expansion of the ski resort authorized by the settlement agreement, and forest management measures to enhance late seral forests and other habitats on the property.

Tejon Ranch Reserve Design. CBI, working with the South Coast Wildlands Project, developed a science-based reserve design for the 270,000-acre Tejon Ranch. The reserve design used a series of conservation planning principles and the results of previous CBI studies conducted for the Ranch to design and justify a reserve that captures regional conservation objectives, such as habitat representation goals, protection of intact watersheds, rare and endangered species protection and recovery, and maintenance of intact core reserve areas. The reserve design underwent peer review by a group of academics, resource agency staff, and local experts. The final reserve design was provided to stakeholders with an interest in significant conservation on Tejon Ranch for use in negotiations with the landowner.

Environmental Monitoring and Habitat Management Planning Program for the Ramona Grasslands – The County of San Diego Department of Parks and Recreation and The Nature Conservancy. Dr. White was the lead scientist for the development of a habitat management plan for the Ramona Grasslands in central San Diego County. The Ramona Grasslands are a regionally important conservation area, supporting a variety of target resources, including vernal pools and rare vernal pool species, Stephens' kangaroo rat, wintering and breeding raptors, riparian habitats and arroyo southwestern toads, and native grasslands. Development of the management plan was preceded by a 2-year baseline field monitoring program that was coordinated by Dr. White. The Ramona Grasslands are grazed by cattle, which maintain habitat suitability for some species but can adversely affect other natural resources. The adaptive management plan proposed a managed grazing strategy to balance these resource needs and optimize habitat quality across the preserve. Monitoring activities proposed by the management plan include surveys of grassland, vernal pool, and riparian plants; characterization of stream channel geomorphology and water quality; and avian, small mammal, amphibian, and fairy shrimp surveys. The management plan built on the science foundation CBI articulated for the Ramona Grasslands in the Framework Management Plan previously developed for The Nature Conservancy.

Hydrologic and Hydraulic Assessment of Santa Maria Creek – The Nature Conservancy. Dr. White was the lead scientist for a project conducted in collaboration with researchers from San Diego State University's Department of Geography. The purpose of the project was to analyze historic, current, and future hydrologic and hydraulic regimes, and associated changes in channel geomorphology and riparian vegetation of Santa Maria Creek, Ramona, San Diego County. The analysis focused on how changes in land uses in the watershed affect runoff quantity, stream discharge and stage, and channel geomorphology and riparian vegetation distribution. Historic land uses were quantified from California Department of Water Resources land use maps and historic channel geomorphology and riparian vegetation distribution from historic aerial photography. Future land use was projected from County of San Diego General Plan information. This information is being incorporated into management planning for the Ramona Grasslands Open Space Preserve, which is traversed by Santa Maria Creek.

Shirttail Creek Forest Property Conservation Assessment – Endangered Habitats Conservancy and California Wildlife Foundation. Dr. White prepared a conservation assessment to support the acquisition of the 1,000-acre Shirttail Creek Forest Property outside of Foresthill, California in the northern Sierra Nevada. The assessment characterized the resource values of the property, which included pristine reaches of Shirttail Creek, oak woodlands, and old-growth conifer forests, special status species supported by the property, and the role of the property

in regional connectivity.

El Monte Valley Restoration Project – Endangered Habitats Conservancy. Dr. White is directing restoration planning for approximately 450 acres of the San Diego River and its floodplain in the El Monte Valley, Lakeside, California. The riverine functions and values of the site are currently compromised by a lack of surface-water hydrology due to the El Capitan dam upstream of the site, lowered groundwater elevations from groundwater withdrawals, and significant invasion of the river channel by exotic species. The project entails coordinating the design of the restoration project with a groundwater recharge project proposed for the Valley by the Helix Water District. Dr. White coordinated field studies within the project area including vegetation mapping, avian point counts, and establishment of a bird banding (MAPS) station.

Conservation Assessment of Ranch Guejito. CBI prepared a conservation assessment for the 20,000-acre Rancho Guejito in northern San Diego County, one of the most important conservation targets in the region. The assessment documents the conservation significance of Rancho Guejito from both a natural and cultural resources perspective. The assessment evaluated the resources of Rancho Guejito within a Southern California regional context, and assessed its potential contribution to conservation of landscape-scale processes, protecting intact watershed basins, under-protected vegetation associations, and key sensitive species, as well as prehistoric and historic cultural resources. The assessment is being used by conservation organizations to justify and develop strategies for conservation of the property.

Las Californias Binational Conservation Initiative – San Diego Foundation and Resources Legacy Fund Foundation. In partnership with the Mexican non-governmental organization, *Pronatura*, and The Nature Conservancy, CBI designed a conservation reserve for a 2.5 million-acre area of Southern California and northern Baja California. The study area extends from the Sweetwater River watershed in California to the Rio Guadalupe watershed in Baja California. The project used the reserve selection algorithm, *SPOT*, to select a reserve portfolio. The project has required extensive manipulation and merging of various U.S. and Mexican digital datasets (e.g., land cover, roads, digital elevation models, etc.) and cross-walking of different vegetation classification systems. Conservation achievements within the Las Californias Binational Conservation Initiative study area total over 3,500 acres to date, and are currently a priority of local, state, and federal governmental agencies and non-governmental conservation organizations.

Sierra Nevada Checkerboard Initiative – The Trust for Public Land. Ownership in the Central Sierra Nevada is characterized by a "checkerboard" pattern of public and private land, which potentially complicates management of the landscape for conservation, recreational, and timber harvest values. The Trust for Public Land's Sierra Checkerboard Initiative attempts to affect changes in ownership and management patterns in the northern Sierra to ameliorate the conflicts caused by the checkerboard ownership. Dr. White, working with TPL and its conservation partners, Sierra Nevada Forest Protection Campaign and California Wilderness Coalition, first conducted a science assessment of the 1.5-million acre Sierra Checkerboard Initiative study area to identify high resource value areas, threats to these resources, and spatially explicit management strategies that could be implemented by TPL and its partners to improve resource values. As part of the assessment, Dr. White assembled and worked with a Scientific Advisory Panel of academics and resource agency staff with relevant experience in the Sierra Nevada to advise and review our

work on the project. Working with TPL's forestry consultant, Dr. White then prepared a conservation strategy that identified priority areas for conservation actions and available private lands conservation approaches. TPL is currently implementing the conservation vision developed for the Initiative.

Tejon Ranch Conservation Assessments – Environment Now and Resources Legacy Fund Foundation. Dr. White was the lead scientist for two assessments characterizing the conservation value of the 270,000-acre Tejon Ranch, California. The Conservation Significance Project was conducted in partnership with the South Coast Wildlands Project and California Wilderness Coalition. The Conservation Significance Project made use of available data, museum records, and expert opinion and assessed the biogeographic importance of the Tejon Ranch, its core habitat and natural community representation values, roadlessness, terrestrial and watershed integrity, importance as a habitat linkage, and habitat for rare and endangered species. CBI also conducted an additional Conservation Assessment Project that identified the distribution of a set of conservation values across Tejon Ranch. Conservation values included threatened, endangered and endemic species distributions, roadless areas analysis, watershed integrity analysis, habitat diversity, and regionally under-protected vegetation communities. As part of the Conservation Assessment Project, CBI conducted a remote sensing analysis to update information on roads, land cover, and vegetation community distributions.

South Coast Missing Linkages Project – South Coast Wildlands Project. Dr. White participated in partnership with the South Coast Wildlands Project, The Nature Conservancy, and Pronatura to conduct planning studies on five important habitat linkages in the U.S.-Mexico border region. The CBI is took the lead on two of the five linkages. One was linking National Forest land in the Laguna Mountains with important habitats in Baja California through the Campo Valley area of San Diego County. The other was linking habitats in the Jacumba Mountains with those in the Sierra Juarez in Baja California.

Habitat Management Planning for the Lake Hodges/San Pasqual Valley MSCP Preserve Area – City of San Diego. Dr. White developed a habitat management plan for the over 9,000-acres Lake Hodges/San Pasqual Valley MSCP Preserve Area. He coordinated a team of specialists comprised of local biologists, the U.S. Geological Survey, and San Diego State University to conduct baseline field surveys and map the distributions of key resources, including vegetation communities, rare plants, Hermes Copper butterfly, herpetofauna (including the endangered arroyo southwestern toad), and breeding riparian birds (including the endangered least Bell's vireo and southwestern willow flycatcher). The management plan addressed issues such as control of adjacent land use impacts, fire management, recreational access, fencing, exotic species control, monitoring, and research.

Monitoring Program for the Santa Margarita River – The Nature Conservancy. Dr. White developed a program to monitor future potential changes in the Santa Margarita River associated with modification of base flows resulting from a water rights settlement on the river. Base flow augmentation resulting from the settlement has been designed to mimic natural discharge patterns historically observed in the river. The objective of the monitoring program was to quantify conditions prior to the modification of base flows and to track changes following base flow augmentation. The monitoring plan was structured around distinct reaches of the river that are

anticipated to respond similarly to river hydrology. Elements considered in the monitoring plan include biological resources (riparian and coastal stream communities), water quality, discharge, and channel geomorphology.

Regional Conservation Planning and Constraints Analyses for Eastern San Diego Mountains – The Nature Conservancy. CBI worked with The Nature Conservancy and a team of regional scientific experts to prioritize conservation opportunities for a 400,000-acre area in San Diego County that includes the headwaters of five major watersheds. The study involved development and review of a spatial and non-spatial database for the area, identification of regionally important resources and landscape connections, and a gap analysis to identify regionally important resources that were in private ownership and zoned for development or agriculture. CBI identified and evaluated the potential effects of land uses and other stressors, including those that may affect downstream portions of the watersheds. CBI and a team of scientists conducted biological surveys of selected properties. As a result of the studies, CBI prepared a conservation strategy report that identifies conservation priorities, research needs, land use constraints, potentially compatible land uses and appropriate locations, restoration opportunities, and habitat management goals.

MSCP Monitoring Program Coordination – California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS) and City of San Diego. CBI worked with the City of San Diego and other San Diego County jurisdictions, USFWS, and CDFG to implement the Subregional Biological Monitoring Program for the San Diego MSCP. As part of this effort, CBI compiled an inventory of existing monitoring efforts in western San Diego County, developed a strategic framework of the roles and responsibilities of the monitoring partners, refined biological monitoring protocols, developed structures and protocols for managing large biological databases, formulated a strategy for developing a centralized database repository, and developed a web site to disseminate MSCP-related information to the public.

Regional Biological Monitoring Plan for the Multiple Habitats Conservation Program – San Diego Association of Governments. In coordination with the California Department of Fish and Game and the U.S. Fish and Wildlife Service, and the seven North San Diego County cities participating in the Multiple Habitats Conservation Program (MHCP), CBI developed a regional biological monitoring plan for the MHCP planning area. The MHCP biological monitoring program is intended to provide a systematic data collection effort to gauge the progress and success of the habitat preserve system. The plan addresses regional monitoring objectives and describes specific monitoring approaches for riparian communities, uplands, vernal pools, coastal lagoons, and wildlife movement corridors within the preserve system.

Habitat Management Planning for the Marron Valley Preserve Area – City of San Diego. Dr. White developed a habitat management plan for the 2,600-acre Marron Valley MSCP Preserve Area. He coordinated a team of biologists associated with CBI, the U.S. Geological Survey, and the San Diego Natural History Museum to conduct baseline field surveys and map the distributions of key resources, including vegetation communities, rare plants, endangered Quino checkerspot butterflies, herpetofauna (including the endangered arroyo southwestern toad), and breeding riparian birds (including the endangered least Bell's vireo and southwestern willow flycatcher). Dr. White conducted surveys for the endangered San Diego fairy shrimp in vernal pools on the property. The management plan addressed issues such as cattle grazing, fire management, access,

fencing, exotic species control, monitoring, and research.

Wildlife Corridor Monitoring Study – City of Poway and City of San Diego. This study evaluated the use of designated wildlife corridors by target mammal species, including mountain lions, bobcats, coyotes, mule deer. Field monitoring was conducted in the Los Peñasquitos, Carmel Valley, Carmel Mountain/Del Mar Mesa, and eastern Poway areas by a graduate student and by a local volunteer organization using different methodologies over several seasons. Dr. White analyzed the data generated to assess the functionality of the wildlife corridors and to compare the methods. CBI's report made recommendations on wildlife corridor monitoring methodologies for the MSCP.

Lower Colorado River Multi-Species Conservation Program – National Fish and Wildlife Foundation. Dr. White served as the Technical Coordinator of the plan development team for the Lower Colorado River Multiple Species Conservation Program (LCR MSCP). The LCR MSCP plan was prepared for a consortium of federal and state agencies (California, Nevada, and Arizona), water and hydropower interests, and Native American Tribal governments. The LCR MSCP was initiated to optimize opportunities for current and future water and power development in the lower Colorado River basin, while working towards conservation of listed and selected unlisted species and their habitats in compliance with both the federal and California Endangered Species Acts. The result of the plan will be the issuance of incidental take authorizations under Sections 7 and 10(a)(1)(B) of the Endangered Species Act, and Section 2835 of the California Natural Communities Conservation Program Act for those species deemed to be adequately addressed by the plan, through a combination of conservation, management, restoration, and operational measures.

Dr. White's responsibilities included providing overall technical oversight for the project team, including development of a conservation strategy for the program and alternatives for evaluation under the California Environmental Quality Act and National Environmental Policy Act. The conservation strategy involved a strong riparian habitat restoration component, which involves integrating the requirements of riparian species with the hydrologic and hydraulic conditions on the river in light of future water management scenarios (e.g., intrastate water transfers to achieve compliance with California's 4.4 Plan, offstream storage and interstate transfer rules). The conservation strategy had to consider large-scale water management activities and water accounting practices dictated by the large body of legislation and court decrees collectively known as the Law of the River.

Multiple Species Conservation Program – City of San Diego Clean Water Program. Dr. White participated in development of a conservation and management plan for federally listed species and key candidate species and their habitats in a 900-square-mile area in San Diego County. He coordinated the development of a GIS-based habitat evaluation model, prepared hydrologic management guidelines for the preserve system, and assisted with development of the species and habitat monitoring program for the preserve system.

TECHNICAL STUDIES

Fairy Shrimp Survey Protocol Analysis – Western Riverside County Regional Conservation Authority. Dr. White performed an analysis of Endangered Species Act section 10(a)(1)(A) fairy shrimp survey data to assess the adequacy of a single survey, as opposed to multiple surveys, in detecting fairy shrimp in vernal pools. The analysis used the survey data to determine the conditional probability of detecting shrimp in the second survey period if shrimp either were or were not collected in the first survey period.

The Influence of Watershed Urbanization on the Hydrology and Biology of Los Peñasquitos Creek – The San Diego Foundation Blasker Rose-Miah Fund. Dr. White was awarded a research grant to study the effects of urbanization in the Los Peñasquitos Creek watershed. The Los Peñasquitos Creek watershed is a small coastal watershed in San Diego, California that contains significant areas of conserved natural habitats, but has experienced rapid urban growth. The study examined how patterns of land use change in the Los Peñasquitos Creek watershed have affected downstream hydrology of the creek, channel geomorphology, and associated riparian vegetation communities. The research showed that urbanization of the watershed has resulted in significant increases in discharge, annual runoff, flood peaks, and dry-season flows. These hydrologic changes have driven changes in the distribution and composition of riparian habitats associated with Los Peñasquitos Creek.

Source Water Protection Guidelines – The City of San Diego Water Department. Dr. White provided technical assistance to City of San Diego Water Department staff in preparing development guidelines intended to ensure protect of the quality of San Diego source water supply reservoirs. The project was conducted by a consulting firm, Brown and Caldwell, and Dr. White served as a technical advisor directly to the City.

Guajome Lake Water Quality Assessment Project – County of San Diego. Dr. White served as project manager for a water quality study at Guajome Lake in northern San Diego County funded under the U.S. Environmental Protection Agency's (USEPA) Clean Lakes Program. The focus of the project was to characterize water quality in the lake through field sampling and chemical analysis of soil, sediment, stream flow, and lake water to identify pollution problems in the lake and its watershed. The project included preparation of a Quality Assurance Project Plan (QAPP), assessing historic uses of agricultural chemicals in the watershed, estimating sediment and chemical constituent loadings to the lake with watershed modeling techniques, developing and assessing pollution control measures, and developing pollution control and water quality monitoring programs for the lake.

San Diego River Live Stream Discharge Studies – City of San Diego. Dr. White was biology task manager for analysis of potential effects of live stream discharge of reclaimed water to the San Diego River. The objectives of the study were to determine the feasibility of a live stream discharge program in light of the potential effects to wetlands (including habitat for the endangered least Bell's vireo), aquatic fauna, water quality, and public health. Responsibilities included an assessment of the effects of varying quantities of live stream discharge on fisheries habitat, riparian and salt marsh wetlands, wetland-associated terrestrial species, and disease vectors. Completion of this task required interpretation of the QUAL2E water quality model output and hydraulic

modeling output.

Salton Sea Water Quality Management Project – Salton Sea Authority. As project manager for a program funded under a USEPA Clean Lakes Grant, Dr. White summarized and presented environmental and economic analyses of salinity and surface elevation management alternatives at the Salton Sea. The project entailed interaction with the USEPA, U.S. Army Corps of Engineers, Bureau of Reclamation, U.S. Fish and Wildlife Service, California Department of Fish and Game, Regional Water Quality Control Board, California Environmental Protection Agency, and local citizens groups to identify and summarize their concerns.

Olivenhain Reservoir Limnological Assessment – Olivenhain Water District. Dr. White served as project manager and technical lead for the assessment of anticipated limnological conditions of a reservoir planned for San Diego County (Olivenhain Reservoir). The assessment projected anticipated thermal stratification and dynamics of nutrients, dissolved oxygen, and other water quality constituents. He recommended design features to better manage water quality in the reservoir, including a multi-port outlet tower to allow selective withdrawals, artificial circulation/hypolimnetic aeration, and a separate inlet structure for aqueduct inflows.

Fairy Shrimp Survey and Assessments – Twentynine Palms Marine Corps Air Ground Combat Center. Dr. White directed field surveys of anostracans (primarily fairly shrimp) in desert playas and impact assessments of base operations on these resources. Field surveys involved collecting samples of sediments containing anostracan eggs that were reared in controlled conditions in the laboratory. The impact assessment primarily evaluated the effects of vehicle traffic (e.g., tanks and armored personnel carriers) on desert playa habitats.

Fisheries Survey – Newhall Land and Farming. Dr. White conducted a field survey of native fishes in the Santa Clara River, Los Angeles County, California, as part of an emergency road crossing project. The purpose of the survey was to document the species present in the study area and to relocate fish potentially impacted by construction operations to areas outside of the impact zone as conditioned in the California Department of Fish and Game Streambed Alteration Agreement for the project. Species of particular interest were three-spined stickleback (*Gasterosteus aculeatus*), arroyo chub (*Gila orcutti*), and Santa Ana sucker (*Catostomus santaanae*).

Impacts of Threadfin Shad on Largemouth Bass – San Diego State University. Dr. White participated in a project to examine the impacts of threadfin shad introductions on aquatic biota in Southern California reservoirs. He sampled fish and plankton, conducted physical and chemical analyses, and conducted echo-sounding in six lakes in San Diego County. Dr. White identified zooplankton and provided statistical review.

Impacts of Opossum Shrimp on Zooplankton – Tahoe Research Group. Dr. White participated in a project assessing the impacts of opossum shrimp (*Mysis relicta*) introductions on Lake Tahoe zooplankton. He installed experimental enclosures with scuba, sampled and counted zooplankton, and performed a variety of routine limnological analyses, as well as conducted short-term opossum shrimp feeding experiments.

ANALYSIS OF ENVIRONMENTAL IMPACT AND REGULATORY COMPLIANCE

Martis Valley Community Plan – Sierra Watch and Mountain Area Protection Foundation. Dr. White conducted a review and provided comments on the Environmental Impact Report prepared of for the update to the Martis Valley Community Plan on behalf of Sierra Watch and Mountain Area Protection Foundation. The Community Plan Update proposed alternatives that would change development patterns in the Martis Valley Community Planning Area, Placer County, California. These impacts would have potentially significant impacts to high value terrestrial and aquatic resources, including forests, shrub communities, meadows, and stream systems. To assist with critiquing the biological resources analyses in the EIR, CBI developed a natural resources conservation vision for the Martis Valley and identified how the proposed developments authorized under the proposed Community Plan would adversely affect these resources. Dr. White participated in landowner negotiations over development designs and provided litigation support.

Evaluation of the Cabo San Quintín Development Project and Environmental Impact Study – *pro esteros* and Endangered Habitats League. CBI conducted an evaluation of the proposed Cabo San Quintín development plan and associated Mexican environmental impact study (Manifestación de Impacto Ambiental) for the Punto Mazo peninsula, San Quintín, Baja California, Mexico. The evaluation discussed inadequacies and inconsistencies of the environmental analysis, and presented an independent analysis of key project features and their potential impacts. Key points discussed in the evaluation included the inadequate consideration of Mexican endangered species laws, state land use regulations, potable and irrigation water supply issues, waste water treatment and potential nutrient loading, potential effects of marina dredging on the Bahía San Quintín, potential impacts to endemic species and sensitive habitats, and potential socioeconomic impacts associated with the increased regional infrastructure and services needs that would result from implementing the project.

Wetlands Permitting, Mission Valley West Light Rail Transit – Metropolitan Transit Development Board. Dr. White was the project manager responsible for coordinating wetlands and endangered species permitting for the Mission Valley West Light Rail Transit project. He conducted a Section 404(b)(1) alternatives analysis, selected potential riparian mitigation sites, acted as permitting agency liaison, coordinated development of a wetlands mitigation plan, conducted U.S. Army Corps of Engineers 404 and California Department of Fish and Game Streambed Alteration Agreement permitting, and coordinated Section 7 consultation for the endangered least Bell's vireo.

Wetlands Permitting and Mitigation Plan, East Mission Gorge Sewer Interceptor Force Main and Pump Station – City of San Diego Water Utilities Department. Dr. White coordinated the development of a detailed wetlands mitigation plan for impacts associated with the construction of a sewage pump station and force main. The wetlands mitigation plan was developed in consultation with the U.S. Fish and Wildlife Service, California Department of Fish and Game, and City of San Diego. The mitigation plan was required for the U.S. Army Corps of Engineers' Section 404 and California Department of Fish and Game 1601 permitting process. Dr. White also conducted the biological resources impact analysis for the California Environmental

Quality Act (CEQA) compliance.

CONSERVATION OUTREACH, TRAINING, AND EDUCATION

San Dieguito River Watershed Information System – San Dieguito River Valley Conservancy. Dr. White directed the development of a Geographic Information System (GIS) based information system that will assist the Conservancy and the San Dieguito River Valley Joint Powers Authority (JPA) with planning, land acquisition and conservation, and community outreach. The project was funded by the San Diego Foundation. The GIS tool combines available regional data layers such as land use, land ownership, biological resources information, topography, water resources information, and political boundaries, into a user-friendly mapping and analysis tool. The tool allows staff at the Conservancy and JPA to combine various data layers for environmental analyses, to track resource and land status in the watershed, and to create maps and displays for outreach purposes.

Conservation Resource Center Feasibility Study – San Dieguito River Valley Conservancy. CBI prepared a study evaluating the feasibility and desirability of establishing a resource support service for conservation groups in San Diego County. The first phase of the study included an exploratory workshop and discussions with individuals from the San Diego conservation community about alternative strategies for sharing resources. CBI conducted research on other organizational models across the country and evaluated the local availability of technical services. We prepared a report summarizing the results of our study and that provided recommendations on a structure and strategy for developing a resource center.

Aquatic Ecology Training Program – Campo Environmental Protection Agency. Dr. White conducted training of tribal members working for the Campo Band of Mission Indians Environmental Protection Agency (Campo EPA) in aquatic and riparian resource ecology, inventory, and restoration. The program was funded under Section 106 of the Clean Water Act. The ultimate goal of the program was to provide tribal members sufficient training to allow for an efficient and effective transition of delegation of authority over water resources matters to the Campo Band. He conducted training in riparian ecology, aquatic invertebrate ecology, Rapid Bioassessment Protocols, and stream and riparian restoration techniques.

ECOLOGICAL RISK ASSESSMENTS

Ecological Risk Assessment, U.S. Naval Activities (NAVACTS), Guam – U.S. Navy. Dr. White coordinated investigations in support of ecological risk assessments for terrestrial and freshwater habitats at four sites at NAVACTS Guam. Field studies included mapping and characterization of vegetation and wildlife habitat, floral and faunal inventories, collection of soils and sediments for toxicity tests and chemical analyses, and analysis of resident biota for contaminant bioaccumulation. This information was compared to data from offsite reference areas. These data were used to develop preliminary ecological risk assessments evaluating the potential risk that the chemicals onsite posed to aquatic and terrestrial communities. Of special concern was the potential for adverse impacts to the endangered Mariana common moorhen, which utilizes freshwater marshes in the area. Chemicals of concern for these sites included metals, pesticides, polychlorinated biphenyls (PCBs), dioxins, petroleum hydrocarbons, and polynuclear

aromatic hydrocarbons (PAHs).

Ecological Risk Assessment, Old WESTPAC Site, NAVACTS, Guam – U.S. Navy. Dr. White coordinated field studies at NAVACTS, Guam to sample soils and freshwater sediments for chemical analyses and toxicity tests. Collected aquatic and terrestrial organisms for tissue analyses to determine bioaccumulation of chemicals found onsite. These data were used to develop a preliminary ecological risk assessment evaluating the potential risk that the chemicals onsite posed to aquatic and terrestrial communities. Of particular concern were wetlands supporting the endangered Mariana common moorhen. Chemicals of concern included metals, pesticides, PCBs, petroleum hydrocarbons, and PAHs.

Ecological Risk Assessment RCRA Facilities Investigation – Rocketdyne Division, Boeing North American. Dr. White oversaw the development of ecological risk assessments at 36 sites at the 2,500-acre Santa Susana Field Laboratory (SSFL) for the Rocketdyne Division of Boeing North American. He supervised biologists conducting extensive field surveys of the SSFL that involved vegetation community mapping, rare plant surveys, and wildlife species inventories. He coordinated with the California Department of Toxic Substances Control (DTSC) on development of a series of "white papers" describing the approach and methodologies that will ultimately be employed to conduct the risk assessments for the SSFL. The white papers dealt with issues such as determining background concentrations, selecting contaminants of concern, proposed conceptual site models, calculation of exposure point concentrations, development of exposure model parameters, and risk-based decision criteria.

PUBLICATIONS AND PRESENTATIONS

PUBLICATIONS AND REPORTS

Tabak, M.A., M.S. Norouzzadeh, D.W. Wolfson, S.J. Sweeney, K.C. Vercauteren, N.P. Snow, J.M. Halseth, P.A. Di Salvo, J.S. Lewis, M.D. White, B.Teton, J.C. Beasley, P.E. Schlichting, R.K. Boughton, B. Wight, E.S. Newkirk, J.S. Ivan, E.A. Odell, R.K. Brook, P.M. Lukacs, J. Clune, R.S. Miller.2018. Machine learning to classify animal species in camera trap images: applications in ecology. *Methods in Ecology and Evolution* 2018;00:1-6. https://doi.org/10.1111/2041-210X.13120

Ratcliff, F.P., J.W. Bartolome, L. Macauly, S. Spiegal, and M.D. White. 2018. Applying ecological site concepts and state-and-transition models to a grazed riparian rangeland. *Ecology and Evolution* 8:4907-4918. https://doi.org/10.1002/ece3.4057.

White, M.D., K. Kauffman, J. Lewis, and R. Miller. 2018. Wild pig use of fenced farm fields in California's San Joaquin Valley. *California Agriculture* 72(2):120-126.

Robeson, M.S., K. Khanipov, G. Golovko, S.M. Wisely, M.D. White, M. Bodenchuck, T.J. Smyser, Y. Fofanov, N. Fierer, and A.J. Piaggio. 2017. Assessing the utility of metabarcoding for diet analyses of the omnivorous wild pig (*Sus scrofa*). *Ecology and Evolution* 00:1-12. https://doi.org/10.1002/ece3.3638.

Mayence, C.E., N. Jensen, N. Kramer, L. Pavliscak, and M.D. White. 2017. Tejon Ranch-Land of contrast, botanical richness, and ongoing discovery. *Fremontia* 45(1&2):25-29.

White, M.D. and K. Kunkel. 2016. Evaluating feral pig management strategies at Tejon Ranch, California. Proceedings of the 27th Vertebrate Pest Conference (R.M. Timm and R.A Baldwin Eds). Pgs. 124-127. University of California, Davis, CA.

Teton, B., M.D. White, and K. Kunkel. 2016. Grappling with pigs in California High Country: Wild pig population

and disturbance research at Tejon Ranch. Proceedings of the 27th Vertebrate Pest Conference (R.M. Timm and R.A Baldwin Eds.). Pgs. 128-132. University of California, Davis, CA.

Spiegal, S., J.W. Bartolome, and M.D. White. 2016. Applying ecological site concepts to adaptive conservation management on an iconic Californian landscape. *Rangelands* 38(6):365-370.

White, M.D. 2015. Status, conservation, and management of oaks at Tejon Ranch, California. Pgs 495-503 in: Standiford, Richard B.; Purcell, Kathryn L., tech. cords. 2015. Proceedings of the seventh California oak symposium: managing oak woodlands in a dynamic world. Gen. Tech. Rep. PSW-GTR-251. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 579 p.

Ratcliff, F.P., J.W. Bartolome, M. Hammond, S. Spiegal, and M. White. 2015. Developing Ecological Site and State-and Transition Models for Grazed Riparian Pastures at Tejon Ranch, California. Pgs 209-218 in: Standiford, Richard B.; Purcell, Kathryn L., tech. cords. 2015. Proceedings of the seventh California oak symposium: managing oak woodlands in a dynamic world. Gen. Tech. Rep. PSW-GTR-251. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 579 p.

Principe, Z. and M.D. White. 2015. Hidden treasures of the Tehachapi Region. *Fremontia* 43(2):2-9.

Bartolome, J.W., B. H. Allen-Diaz, S. Barry, L. D. Ford, M. Hammond, P. Hopkinson, F. Ratcliff, S. Spiegal, and M. D. White. 2014. Grazing for biodiversity in Californian Mediterranean grasslands. *Rangelands* 36:36–43.

White, M.D. and J.R. Strittholt. 2014. Forest conservation planning. *In* Reynolds, K.M., P.F. Hessburg, and P.S. Bourgeron (eds). 2014. *Making Transparent Environmental Management Decisions: Applications of the Ecosystem Management Decision Support System*. Berlin: Springer.

White, M.D. and K. Penrod. 2012. The Tehachapi Connection: a case study of linkage, design, conservation, and restoration. *Ecological Restoration* 30(4):279-282.

White, M.D., E.R. Pandolfino, and A. Jones. 2011. Purple Martin survey results at Tejon Ranch in the Tehachapi Mountains of California. *Western Birds* 42(3):164-173.

White, M.D., J.A. Stallcup, K. Comer, M.A. Vargas, J.M. Beltran-Abaunza, F. Ochoa, and S. Morrison. 2006. Designing and establishing conservation areas in the Baja California-Southern California border region. *In* Hoffman, K. (ed.), *The U.S. – Mexican Border Environment: Transboundary Ecosystem Management*. Southwest Consortium for Environmental Research and Policy Monograph Series, no. 15. San Diego State University Press.

White, M.D., and K.A. Greer. 2006. The effects of watershed urbanization on stream hydrologic characteristics and riparian vegetation of Los Peñasquitos Creek, California. *Landscape and Urban Planning* 74(2):125-138.

Strittholt, J.R., N.L. Staus, and M.D. White. 2000. Importance of Bureau of Land Management Roadless Areas in the Western U.S.A. Prepared for the National Bureau of Land Management Wilderness Campaign by the Conservation Biology Institute. March.

White, M.D. 1998. Horizontal distribution of pelagic zooplankton in relation to predation gradients. *Ecography* 21:44-62.

Hurlbert, S.H., and M.D. White. 1994. Experiments with invertebrate zooplanktivores: Quality of statistical analysis. *Bulletin of Marine Science* 53(2):128-153.

PRESENTATIONS

White, M.D., S. Spiegal, and J.W. Bartolome. 2019. Using ecological site descriptions and State and Transition Models to inform native plant restoration strategies. Society for Range Management 2019 Annual Meeting. Minneapolis, MN. February.

Bartolome, J.W., P.J. Hopkinson, and M.D. White. 2018. Drivers of California Mediterranean grassland biodiversity. Presented at the Society for Range Management 2018 Annual Meeting. February.

White, M.D. 2016. Private Lands Conservation and Management in the Face of Changing Climates: a Case Study from Tejon Ranch. Natural Areas Association Conference. October.

White M.D. and K. Kunkel. 2016. Evaluating Feral Pig Management Strategies at Tejon Ranch, California. 27th Vertebrate Pest Conference, Newport Beach, CA. March.

Jesse S. Lewis, Matthew L. Farnsworth, Ryan S. Miller, Daniel Grear, Steven J. Sweeney, Raoul Boughton, Michael White, Dennis Orthmeyer, and Kurt C. VerCauteren. 2016. Development of a comprehensive feral swine field study: population dynamics, response to culling, space use patterns, and behavioral interactions. 2016 International Wild Pig Conference, April.

Maloney, T., Z. Principe, and M.D. White. 2015. The Tehachapi Linkage: large landscape conservation success. Part of a workshop at the Land Trust Alliance Rally. October.

White, M.D. 2015. Using an ecological sites framework to prioritize conservation management of grasslands at Tejon Ranch, California. Presented at the California Native Plant Society 2015 Conservation Congress. January.

White, M.D. 2014. Status, conservation, and management of oaks at Tejon Ranch, California. Presented at the 7th California Oak Symposium. November.

White, M.D. 2014. Conservation management of San Joaquin Valley grasslands at Tejon Ranch. Presented at the San Joaquin Valley Natural Communities Conference, The San Joaquin Valley chapter of The Wildlife Society. March.

White, M.D. 2013. Ecological restoration from a conservation practitioner's perspective. Presented at the Pritzlaff Conservation Symposium, Santa Barbara Botanic Garden. October.

White, M.D. 2012. Developing conceptual models to inform conservation management of working landscapes at Tejon Ranch, California. Presented at the North American Congress of the Society for Conservation Biology. July.

White, M.D. 2011. Conservation management planning at Tejon Ranch, CA, USA. Presented at the MEDECOS XII conference. September.

White M.D., E.R Pandolfino, and A. Jones. 2010. A Purple Martin survey expedition on Tejon Ranch, California. Presented at the Western Field Ornithologists Annual Conference. October.

White, M.D. 2009. Conservation in the Tehachapi Connection. Presented at the California Native Plant Society Conservation Conference. January.

White, M.D. 2007. Designing landscape reserves in light of climate change. Presented at the Public Lands and Climate Change Symposium, Berkeley, CA. November.

White, M.D. 2007. Las Californias Binational Conservation Plan: Importance of the Sierra Juárez. Presented at the National Ecology Week Symposium, Universidad Autonomia Baja California, Ensenada, Baja California. November.

White, M.D. 2006. Applying landscape ecology to wetland and watershed management in Southern California. Presented at the Southern California Wetlands Recovery Project Symposium 2006, Santa Barbara, CA. March.

White, M.D., J.A. Stallcup, K. Comer, M.A. Vargas, J.M. Beltran-Abaunza, F. Ochoa, and S. Morrison. 2004. Designing and establishing conservation areas in the Baja California-Southern California border region. Presented at Border Institute VI, Transboundary Ecosystem Management, organized by the Southwest Center for Environmental Research and Policy. April.

White, M.D., and K.A. Greer. 2003. The effects and conservation implications of watershed urbanization in a Southern California stream system. Presented at the Society for Conservation Biology Annual Meeting, Duluth, MN. July.

White, M.D. 2003. The influence of human land use modifications on Southern California stream hydrology. Presented at the Western Division of the American Fisheries Society Annual Meeting, San Diego, CA. April.

Stallcup, J.A., and M.D. White. 2002. Wildlife corridor monitoring for the Multiple Species Conservation Program. Presented at the MSCP Annual Workshop. San Diego, CA. October.

White, M.D. 2002. A review of the ecological effects of roads with examples from Southern California. Presented to the National Research Council Committee on the Ecological Impacts of Road Density. Newport Beach, CA.

June.

White, M.D., and J.A. Stallcup. 2000. The Lower Colorado River – Conservation planning in a degraded riverine ecosystem. Presented at the Society for Conservation Biology Annual Meeting, Missoula, MO. June.

White, M.D. 1998. Moderator for a panel discussion on salinity and surface elevation management options for the Salton Sea. Salton Sea Symposium II. La Quinta, CA. January.

White, M.D. 1995. Managing salinity and surface elevation at the Salton Sea, California. Presented at the American Society of Civil Engineers Annual Convention 95, San Diego, CA. October.

White, M.D. 1993. Morphological characteristics of threespined sticklebacks (*Gasterosteus aculeatus*) from the Sweetwater River, San Diego County, California. Presented at the American Fisheries Society Western Division Annual Conference, Sacramento, CA. July.

White, M.D. 1991. Horizontal distribution of zooplankton in relation to predation gradients. Presented at the Zooplankton Ecology Symposium, Lawrence University, Appleton, WI. August.

Hurlbert, S.H., and M.D. White. 1991. Quality of statistical analyses in studies on the effects of invertebrate zooplanktivores. Presented at the Zooplankton Ecology Symposium, Lawrence University, Appleton, WI. August.

White, M.D., T. Morrison, G. Orlob, H. Chang ,and C. Nordby. 1991. An environmental assessment of the potential effects of live stream discharge of reclaimed water to the San Diego River. Presented at the Symposium on Water Supply and Water Reuse: 1991 and beyond. American Water Resources Association, San Diego, CA. June.

White, M.D. 1989. The role of vertebrate and invertebrate predation gradients in producing horizontal heterogeneity of zooplankton populations. Symposium on Intrazooplankton Predation, University of Sao Paulo, Sao Carlos, Brasil. June.

Hurlbert, S.H., and M.D. White. 1989. A review of the experimental intrazooplankton predation literature with emphasis on experimental design and analysis. Symposium on Intrazooplankton Predation, University of Sao Paulo, Sao Carlos, Brasil. June.

White, M.D. 1989. Evidence for diel horizontal migrations of an invertebrate predator, *Mesocyclops edax*. Southern California Academy of Sciences Annual Meeting, Thousand Oaks, California. May.

White, M.D. 1988. Predation-induced horizontal zooplankton gradients. Ecology Supplement 69(2) pg. 340. Ecological Society of America Annual Meeting, Davis, California. August.

CURRICULUM VITAE

Gerald T. Braden

Education

Bachelors of Arts - Environmental Studies. California State University San Bernardino, California. Graduated with Honors - 10 December, 1981
Bachelors of Arts - Physical Geography. California State University San Bernardino, California. Graduated with Honors - 10 December, 1981
Masters of Science - Biological Sciences. California State Polytechnic University, Pomona, California (CSPUP). Graduated with High Honors - 15 March 1991

Relevant Professional Work Experience

Position: Self employed: Independent Biological Consultant
From: January 2010 **To:** Present

Activities: Surveys of land, shore and water birds, reptiles, amphibians and small mammal communities. Also Desert Tortoise, California Gnatcatcher, Peninsular Bighorn Sheep, San Bernardino Kangaroo Rat, Vireo (Least and Arizona), Clapper Rail (Yuma, Light-footed, Black), Southwestern Willow Flycatcher and Yellow-billed Cuckoo surveys, monitoring, and habitat assessments. Bat surveys and habitat assessments. Fox trapping/relocation. Consultation and document review on threatened/endangered and sensitive species. Project and construction monitoring.

Research Biologist/ Interim Curator; San Bernardino County Museum Biological Sciences Division
From: October 1994 **To:** January 2010

Responsibilities: My primary responsibilities as a research biologist and interim curator were characterized by a high level of independence to design, perform, interpret, publish, and review original, professional, and scientific research using statistical, problem solving, personnel management, budget management, inter-agency coordination, and supervisory skills on a daily basis.

As Research Biologist (1994-2010) I was responsible for the development, implementation and supervision of Contract Field Studies program. The Contract Field Studies Program involved the conception, design, development, implementation, analysis, and reporting on original long-term field studies. Studies pertained to varied aspects of the distribution, life history, biology, and/or ecology of vertebrate taxa of the Southwestern United States and Northern Mexico. The studies involved the application of standard biological survey and sampling methodologies (for all plants and animals), development of new methodologies when warranted, and a strong capacity for independent problem solving and original thought. The studies required a working knowledge of contemporary scientific biological theories and

paradigms.

Many of the contract field studies involve federal and state threatened or endangered species, therefore the studies required a working knowledge, understanding, and application of state and federal environmental laws such as the Endangered Species Act, Clean Water Act, National Environmental Policy Act, Federal Coordination Act, and California Environmental Quality Act.

Contract field studies I was responsible for hiring, training, supervising and evaluating four permanent staff and up to forty-seven seasonal staff in standard scientific survey and data collection techniques, and a variety of population sampling, estimation, area use and persistence models. Duties required the application and interpretation of a broad array of univariate, multivariate, probabilistic and ecological statistics, and the ability to effectively use statistical packages and scientific plotting software, such as SASS, BMDP, SigmaStat, and SigmPlot, in addition to the commonly used spreadsheet and database software.

As interim curator (2003-2010) I was accountable for matters pertaining to the Biological Sciences Division. Responsibilities entail overseeing, augmenting, and maintaining regionally significant research collections of the herpetofauna, small mammals, avifauna, botanical, and invertebrate taxa of the Southwestern United States and northern Mexico. Duties included the collection, preparation, and preservation of specimens and tissues to modern museum standards and practices. Duties also entail developing and maintaining research collaboration and strong working relationships with local universities and museum scientists. Duties also included responding to requests and dissemination of collections information to professional and amateur biologists, resource managers, educators, and the general public.

Duties also included generating and managing a $500,000 annual budget (variable by year). Budget revenue was generated by contract solicitations and grant sources. Duties included hiring and supervising staff, assigning work details, scheduling, and performance evaluations. How many people?

Duties also included interfacing with museum visitors via tours, lectures, exhibit and web module conception, design, and creation. Consultation with other county departments, regulatory agencies, other museums, and academia pertaining to expertise, advice, environmental compliance, and general networking were likewise part of daily activities.

Wildlife Biologist; U. S. Fish and Wildlife Service/Ecological Services
From: May 1991 **To:** October 1994

Responsibilities: The federal wildlife biologist position was characterized by a high level of independence to provide guidance to federal, state, local, and private jurisdictions to facilitate compliance with the Endangered Species Act (ESA), Federal Coordination Act, National Environmental Policy Act, and Clean Water Act. The position was also characterized by a high level of independence to design and implement studies on threatened and endangered species to provide a scientific basis for endangered and threatened species survey protocols as well as management and recovery plans.

Foremost among these studies of threatened and endangered species were long-term life history, habitat/fitness, nest placement, parasitism, detection, and dispersal studies of the

threatened California Gnatcatcher. The results of these studies included three primary literature publications, multiple gray literature reports and the development of the present day U. S. Fish and Wildlife California Gnatcatcher Survey Protocol. Other field studies involved protocol surveys for other listed species including Stephens' Kangaroo Rat, Light-footed Clapper Rail, Southwestern Willow Flycatcher, and Least Bell's Vireo.

In addition to the skills necessary to conceive, implement, and successfully complete scientific research, responsibilities involved developing and maintaining partnerships among the FWS, University of California Riverside, San Bernardino County Museum, Riverside County Parks Department, Metropolitan Water District, and the private sector.

Other duties involving ESA guidance entailed working with jurisdictions to assure project compliance with the ESA and related environmental laws. Most often this involved providing guidance toward obtaining Threatened and Endangers Species take permits (Sections 10(a)1a, 10(a)1b, and 7) and advice on possible non-compliance (Section 9, illegal take) or other potential ESA and Clean Water Act violations. Not infrequently, these duties were performed in a highly charged emotional, often combative arena, which required substantial amounts of tact, diplomacy, creativity, and patience to arrive at constructive resolutions.

Graduate Student; Biological Sciences Department, California State Polytechnic University Pomona.
From: Oct. 1987 **To:** Oct. 1991

Responsibilities: My thesis worked consisted of four years of study on the territory size, habitat use, den characteristics, and seasonal ranges of Black Bears (*Ursus americanus*) in the San Gabriel Mountains of Southern California. The work involved trapping bears by culvert traps and leg snares, administering tranquilizers, attaching radio collars, determining locations and den sites through telemetry, converting telemetry locations to territory and seasonal use-areas using multiple home range algorithms, data analysis, report writing, and professional presentations to scientific organizations and the general public. The work involved long hours alone in remote locations of the San Gabriel Mountains in all types of weather conditions. Because the bear project was on going, duties also included training subsequent graduate students in proper use of traps, snares, and telemetry, sedating wild bears, and home range analyses.

I also trained and assisted graduate students studying habitat use and territory utilization of coyote, raccoon, and opossums along urban-rural interfaces. Duties included the live capture of coyote, raccoons, and opossums and home range/territory delineation for the same taxa using standard home-range algorithms. Independent of my graduate career I also studied age and growth patterns of California Walnut (*Juglans californica*) by analysis of tree ring growth data.

Hydrologist; U.S. Geological Survey
From: ca. March 1981 **To:** October 1987

Responsibilities: The hydrologist position involved the collection, analysis, and reporting of surface flow and ground water data. Duties involved constructing, maintaining, and monitoring surface water gage stations and measuring surface water discharges at remote locations in the deserts, mountains, and coastal valleys of Southern California. These duties required a practical knowledge of standard construction techniques and equipment, surface water flow

characteristics, hydrologic dynamics of current and historic flood events, the effects of varied geologic formations, soil types, and substrates on surface and subsurface flows, and the ability to work effectively under remote, hazardous, and unsupervised conditions under all extremes of weather. Analysis of surface and ground water data required a working knowledge of basic hydrological mathematics and principals. The position was a permanent federal government position with full benefits.

Miscellaneous Work Experience

In no particular order - fire fighter, bookstore clerk, drywall hanger, motorcycle/auto mechanic, water safety instructor, life guard, Iranian house parent, janitor, nightclub (rock and roll) worker, wood cutter, fish hatchery worker, construction worker, finish carpenter, college tutor (science, math, english, philosophy), graduate/teaching assistant, part-time college instructor.

Endangered/threatened species experience

- California Gnatcatcher (*Polioptila californica californica*): Principal investigator on an eight-year study of the life history, habitat affinities, fitness, detection, nest monitoring and dispersal of CAGN in western Riverside. Developed the current FWS CAGN survey protocol. Two years of protocol surveys for the San Bernardino Valley Multi-species Plan. Multiple gray literature reports and three peer reviewed publications in primary ornithological journals. Invited review of FWS population modeling, protocols and policies pertaining to the sub-species.

- Least Bell's Vireo (*Vireo bellii pusillus*): Five years of protocol surveys on the Santa Ana and Mojave Rivers and associated tributaries.

- Arizona Bell's Vireo (*Vireo bellii arizonae*): Five-years of surveys in the Lower Grand Canyon. Three years of surveys, nest monitoring, and habitat study on the Virgin River in Southern Nevada.

- Southwestern Willow Flycatcher (*Empidonax traillii extimus*): Nine years of study of the life history, distribution, habitat affinities, fitness, nest success, detection and dispersal of SWWF along the lower Colorado River and its tributaries. Six years of protocol surveys for the U. S. Forest Service. Multiple gray literature reports. Invited reviewer of FWS regulations, protocols and policies pertaining to the species.

- Yuma Clapper Rail (*Rallus longirostris yumanensis*): Nine years of Yuma Clapper Rail surveys along the Virgin River and its tributaries in Southern Nevada. Multiple gray literature reports. FWS invited reviewer of current YCRA/BLRA survey protocol.

- Light-footed Clapper Rail (*Rallus longirostris levipes*): Two years of presence/absence protocol surveys at the Southern California estuaries.

- Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*): Nine years of Yellow-billed Cuckoo surveys along the Virgin River and associated tributaries in Southern Nevada. Incidental observations on the lower Colorado River (Virgin River south to the Mexican

border, two years). Multiple gray literature reports.

- Stephens' Kangaroo (*Dipodomys stephensi*): Two years of protocol surveys in western Riverside County and Camp Pendleton.

- San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*): Five years of protocol trapping for SBKR for the San Bernardino Valley Multi-species Plan and the U.S. Forest Service. Multiple gray literature reports. FWS invited reviewer of current SBKR survey protocol. FWS invited reviewer of Seven Oaks Dam BA as it pertains to SBKR impacts and mitigation.

- Desert Tortoise *(Gopherus agassizii*): Relocation and radio telemetry study of Desert Tortoise in the west Mojave Desert in the late 1980's. A combined four years of Desert Tortoise surveys in the upper Coachella Valley and the eastern Mojave Desert.

- **FWS Permit # TE-43668A-0**: Authorization for-
  CAGN, SWWF, LBV, LFCL, YCLR; Includes surveys, nest searching, nest monitoring, cowbird egg removal, mist netting, and banding throughout each species' distribution.

  SKR, SBKR; Includes surveys, assessments, live trap and release throughout each species' distribution.

- **FWS Permit # TE-802450-6**: Desert Tortoise: Authorized to handle, move, and attach and remove transmitters throughout the species' distribution.

Professional Memberships

American Association for the Advancement of Science
American Society of Mammalogists
American Society of Ichthyologists and Herpetologists
American Ornithologists' Union
Association of Field Ornithologists
Cooper Ornithological Society
Raptor Research Foundation
Wilson Ornithological Society
Copeia

Activities

S Scientific Reviewer: Reviewer of original scientific studies submitted for publication to primary scientific societies, including The Wilson Bulletin, Journal of Field Ornithology, AUK, Condor, Journal of Wildlife Management, and The Journal of Canadian Zoology.

S Presentation of original ornithological research at American Ornithologist and Cooper Ornithological Societies meetings.

S Invited participant on the Science Consistency Review Panel for the USDA EIS Revised

Land Management Plan for Southern California National Forests: October, 2004.

- **S** Solicited for review, opinion, advice and consultation on the San Bernardino Kangaroo Rat, California Gnatcatcher, Southwestern Willow Flycatcher, and other federally listed or sensitive species and ecosystems of the Southwestern United States. Solicitors included U. S. Fish and Wildlife Service, U. S. Bureau of Reclamation, U. S. Bureau of land Management, U. S. Forest Service, U. S. Park Service, California Department of Fish Game, Nevada Department of Game and Fish, County of San Bernardino, Metropolitan Water District, Endangered Habitats League, Center for Biodiversity, Natural Heritage Institute.

- **S** Invited speaker on original research at specialized symposia such as: CalGnat 1994 at University of California Riverside, Coastal Sage Scrub Symposium 1995 at the San Diego Zoo; Puente Hills Wildlife Corridors and Vanishing Habitats Symposium 1995 at California State University Fullerton 1995; 1999 Annual Convention of Environmental Journalist speaking on "Science and Multispecies Habitat Conservation in Coastal Southern California"; Occasional guest lecturers at the Wildlife Ecology Graduate Student Seminar, California State Polytechnic University Pomona.

- **S** Expert Witness on California Gnatcatcher for the U. S. Department of Justice. DJ File Number 90-8-6-04239, United States of America v Granite Homes, INC.

Current Interests

- **S** Pre-post fire comparisons of small vertebrate communities in Alluvial Fan Sage Scrub.
- **S** Affects of water availability on Desert Riparian Communities.
- **S** Tamarisk and mixed native riparian affects on avian diversity in desert riparian systems.
- **S** Habitat/fitness relationships, dispersal, and community associations of organisms, particularly with regards to endangered/threatened species.
- **S** Any studies pertaining to community and/or species responses to habitat fragmentation and patch size in terrestrial ecosystems.
- **S** Alternative Energy Development affects on biological systems.
- **S** International and domestic travel with an emphasis on ecological systems or indigenous and current cultures.

Book Review

Braden, G. T. 1997. Journal of Wildlife Management 83(3):130-131. Monitoring Bird Populations by Point Counts. C. J. Ralph, J. R. Sauer, and S. Droege. (Eds.) General Technical Report PSW-GTR-149. U. S. Department of Agriculture, iv + 181 pages.

Primary Literature Publications

Braden, G. T. 1999. Does nest placement affect the fate or productivity of California Gnatcatcher nests? Auk 116:984-993.

Braden, G. T., R. L. McKernan, and S. M. Powell. 1997. Effects of nest parasitism by the

brown-headed cowbird on nesting success of the California Gnatcatcher. Condor 99(4): 858-865.

Braden, G. T., R. L. McKernan, and S. M. Powell. 1997. Association of within-territory vegetation characteristics and fitness components of California Gnatcatchers. Auk 114(4): 601-609.

Stubblefield, C. and **G. T. Braden**. 1994. Denning Characteristics of black bears in the San Gabriel Mountains of southern California. Cal. Academy of Sciences 93(1)30-37.

Alexander Sokoloff, R. F. Ferrone, J. D. Chaney, **J. Braden**, and R. J. Munoz. 1987. Linkage studies in *Tribolium castaneum* (Herbst). XII. A revision of linkage group II. Genome 29:26-33.

Selected Gray Literature Reports

Braden, G. T., L. Crew, and A. Miller. 2009. Avian diversity, vegetation composition and vegetation structure of the Las Vegas Wash: 2005 to 2009. San Bernardino County Museum, Biological Sciences Division, 2024 Orange Tree Lane Redlands, CA 92374. Prepared for the Las Vegas Wash Coordination Committee. November 2009. 75 pp.

Braden, G. T., M. Rathbun, T. Hoggan, A. Davenport, and K. Carter. 2009. The Status of Yuma Clapper Rail and Yellow-billed Cuckoo along portions of the Virgin River and Muddy River in Southern Nevada, with incidental observations of Southwestern Willow Flycatcher. 2008. Final. Report prepared for the Southern Nevada Water Authority by the Biological Sciences Division, San Bernardino County Museum, 2024 Orange Tree Lane, Redlands, California 92374. February 2009. 58 pp.

Braden, G. T., K. Carter, M. Rathbun, and T Hoggan. 2009. Occurrence, distribution, and abundance of vertebrate species on the Old Woman Mountains Preserve: 2004-2008. Revised Final. Biological Sciences Division, San Bernardino County Museum, 2024 Orange Tree Lane, Redlands CA 92374. Report to the Native American Lands Conservancy and the 29 Palms Band of Mission Indians. January 2009. 158 pp.

Braden, G. T. and R. L. McKernan. 2006. Status, distribution, life-history, and habitat affinities of the Southwestern Willow Flycatcher along the lower Colorado River, Year 7 – 2002 Final Report-Revised. Report submitted to the U. S. Bureau of Reclamation, U. S. Fish and Wildlife Service and U. S. Bureau of Land Management. January 2006.

Braden, G. T., L. Crew, and A. Miller. 2005. Changes in avian breeding season diversity, microclimate, and habitat coincident with changes in surface water in a tamarisk dominated riparian habitat along the Virgin River in southern Nevada. Report submitted to Zane L. Marshall, Southern Nevada Water Authority, Las Vegas Nevada by the Biological Sciences Division, San Bernardino County Museum, Redlands, California.

Braden, G. T. and R. L. McKernan. 2000. A data based survey protocol and quantitative

description of suitable habitat for the endangered San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*). Biology Section, San Bernardino County Museum, Redlands, CA. June, 35 pp.

Braden, G. T. and R. L. McKernan. 1999. Possible effect of low level nest parasitism by the Brown-headed Cowbird (*Molothrus ater*) on the nest success of the Southwestern Willow Flycatcher (*Empidonax traillii extimus*) at sites monitored by the San Bernardino County Museum: A data review, progress report, and power's analysis. Report submitted to the U. S. Bureau of Reclamation, Lower Colorado River Region, Boulder City, Nevada, by the San Bernardino County Museum Biological Sciences Section, Redlands, California. December, 21 pp.

Braden, G. T., and R. L. McKernan. 1998. Nest stages, vocalizations, and survey protocols for the Southwestern Willow Flycatcher (*Empidonax traillii extimus*). Final Report submitted to the U. S. Bureau of Reclamation, Lower Colorado River Region, Boulder City, Nevada, by the San Bernardino County Museum Biological Sciences Section, Redlands, California. October, 36 pp.

Braden, G. T., and R. L. McKernan. 1998. Observations on nest cycles, vocalization rates, the probability of detection, and survey protocols for the Southwestern Willow Flycatcher (*Empidonax traillii extimus*). Report submitted to the U. S. Bureau of Reclamation, Lower Colorado River Region, Boulder City, Nevada, by the San Bernardino County Museum Biological Sciences Section, Redlands, California. March, 38 pp.

Braden, G. T. and Stacey L. Love. 1994. Dispersal and non-breeding season habitat use by the Coastal California Gnatcatcher (*Polioptila californica californica*) in western Riverside County. USFWS report to the Metropolitan Water District. 25 pp.

Carter. K. J., **G. T. Braden**, M. Rathbun, and T. Hoggan. 2006. Southwestern Willow Flycatcher, habitat suitability, and amphibian survey results for the San Bernardino National Forest: 2004. Final Report. Submitted to the San Bernardino National Forest by the Biological Sciences Division, San Bernardino County Museum, Redlands, California. January 2006.

Rathbun M., **G. T. Braden**, and K. J. Carter. 2004. Results of Southwestern Willow Flycatcher, Mountain Yellow-legged Frog, California Red-legged Frog, and Arroyo Toad surveys in the San Bernardino National Forest: 2003 Final Report. Report submitted to the San Bernardino National Forest by the Biological Sciences Division, San Bernardino County Museum, Redlands, California.

McKernan, R. L. **G. T. Braden**. 2002. Status, distribution, and habitat affinities of the Southwestern Willow Flycatcher along the lower Colorado River, Year 6 - 2001. Report submitted to the U. S. Bureau of Reclamation, U. S. Fish and Wildlife Service and U. S. Bureau of Land Management. May 2002.

McKernan, R. L. and **G. T. Braden**. 2001. Status, distribution, and habitat affinities of the Southwestern Willow Flycatcher along the lower Colorado River, Year 5 - 2000. Report submitted to the U. S. Bureau of Reclamation, U. S. Fish and Wildlife Service and U. S. Bureau of Land Management. May 2002.

References

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Résumé

Dan Silver, MD

Education

B.A., History & Western Society, Univ. of California, Berkeley, 1974 (Phi Beta Kappa)
M.D., Columbia University, College of Physicians and Surgeons, 1978
Medical Internship and Residency, Cedars Sinai Medical Center, Los Angeles, 1978-1981
Board Certification, Internal Medicine, 1981

Employment

Practice of internal medicine, Los Angeles, 1981–1991

Hawthorne Community Medical Group
Prairie Medical Group
Kuhn, Crystal and Silver, M.D.s

President, Preserve Our Plateau, 1989 – 1991

Executive Director, Endangered Habitats League, 1991 – present

Accomplishments

- Founding the only regional conservation organization in Southern California and using collaboration and conflict resolution as the primary means of achieving its mission
- Forming effective partnerships with business interests and local governments, and earning the respect of all sectors
- Leading environmentalists toward “smart growth” as a way to comprehensively address conservation, land use, and transportation needs
- Reconciling environmental protection with economic development through comprehensive regional habitat plans in four counties
- Permanently protecting vital natural resources within an interconnected preserve network and working with property owners on project designs and land acquisitions toward this end
- Building consensus with business, environmental, and landowning interests on sustainable transportation and land use principles and incorporating these principles into historic general plan updates in two counties
- Negotiating land use agreements on two of the largest and most iconic properties in California, the Tejon Ranch and the Rancho Mission Viejo

- Working with the Counties of San Diego and Los Angeles on new Wind Energy Ordinances that address biological impacts and streamlines the approval process

- Helping develop and adopt Regional Advanced Mitigation Programs for transportation infrastructure in three counties

Awards

- Metropolitan Water District of Southern California, *Certificate of Appreciation,* 1991
- The Nature Conservancy, *Recognition for Santa Rosa Plateau,* 1991
- Sea and Sage Audubon Society, *Conservation Award,* 1993
- World Wildlife Fund, *Innovation Grant,* 1993
- City of Los Angeles, *Good Earthkeeping Award,* 1994
- Planning and Conservation League, *David Gaines Award,* 1995
- United States Department of the Interior, U.S. Fish and Wildlife Service, *Certificate of Appreciation,* 1998
- County of Riverside, *Recognition of Outstanding Public Service,* 2003
- American Planning Association, California Chapter, *Outstanding Distinguished Leadership: Layperson Award,* 2004
- California Legislature Assembly, *Certificate of Recognition,* 2004
- City of Glendale, *Mayor's Commendation,* 2004
- U.S. Fish and Wildlife Service, *Recovery Champion, 2016,*

Conservation, land use, and transportation planning experience

Current Co-Chair

- County of San Bernardino Vision Process Environment Element

Past Chair

- Finance Subcommittee, San Diego Multiple Species Conservation Program Working Group
- Finance Subcommittee, Riverside County Habitat Conservation Agency Advisory Committee
- San Diego Supervisorial Task Force on Transfer of Development Credits
- Resource Protection and Orderly Development Work Group, State of California

Current Member

- Measure M Environmental Oversight Committee, Orange County Transportation Authority
- Southern California Association of Governments Open Space Conservation Working Group
- California Habitat Conservation Planning Coalition
- Steering Committee, San Diego North County Multiple Species Conservation Program

Past Member

- Steering Committee, California Natural Communities Conservation Planning Program
- Working Group, San Diego Multiple Species Conservation Program
- Advisory Committee, San Diego Assoc. of Governments Multiple Habitat Conservation Program
- County of San Diego Resource Protection Ordinance and Open Space Committee
- Advisory Committee, San Diego Assoc. of Governments Open Space Element
- Working Group, Orange County Central/Coastal Natural Community Conservation Plan
- Working Group, Orange County Southern Natural Community Conservation Plan
- Advisory Committee, Riverside County Habitat Conservation Agency
- Steering Committee, San Bernardino Valley-Wide Multiple Species Program
- Advisory Committee, Santa Margarita River Watershed Management Program
- Advisory Committee, Riverside County Community and Environmental Transportation Acceptability Process
- Advisory Committee, Riverside County Multiple Species Habitat Conservation Plan
- Advisory Committee, Riverside County General Plan Update
- Steering Committee, Riverside County Integrated Project
- Technical Advisory Committee, State Route 94 Major Investment Study
- Interest Group, San Diego County General Plan "2020" Update
- Citizens Advisory Committee, Southern California Assoc. of Governments Compass Growth Vision Project
- CEQA Improvement Advisory Group, State of California
- Advisory Committee, Southern California Assoc. of Governments Open Space Element
- Steering Committee, San Diego County Multiple Species Conservation Program-East
- Advisory Committee, San Diego County Multiple Species Conservation Program-North
- State of California Fish and Game Strategic Vision Stakeholder Advisory Group
- Stakeholders Advisory Committee, Western Riverside County Regional Conservation Authority

Participant

- Southern Calif. Assoc. of Governments "Four Corners" (Orange, Los Angeles, San Bernardino, Riverside Counties) Transportation Study
- San Diego Assoc. of Governments Regional Growth Management Technical Committee
- Southern California Assoc. of Governments Regional Transportation Plan Technical Advisory Committee
- Riverside County General Plan Update
- Los Angeles County 2035 General Plan Update

Member, Board of Directors

- California Futures Network (past)
- Riverside Land Conservancy
- Tejon Ranch Conservancy

- Endangered Habitats Conservancy
- Endangered Habitats League
- Terra Peninsular

Available upon request

References
Speaking engagements and invited testimony

Phillip Brylski

Ph.D. Zoology, 1986, Museum of Vertebrate Zoology, University of California, Berkeley
Master of Forest Science, 1980, Yale University
Bachelor of Science, Forestry, 1977, Berkeley

Ecologist / Conservation biology scientist. Carries out conservation studies over last 30 years on California fauna, including focused surveys for sensitive species, CEQA/NEPA biological impact analyses, status reviews, and genetic studies.

Permits: San Bernardino kangaroo rat (SBKR), Stephens kangaroo rat (SKR), Giant kangaroo rat (GKR), Tipton kangaroo rat (TKR), Fresno kangaroo rat, Pacific pocket mouse (PPM), Mohave ground squirrel (MGS), Amargosa vole, salt marsh harvest mouse, riparian woodrat (FWS TE-148555-2). MOU for most California Mammal Species of Special Concern (small mammals only)

Small Mammals Experience

- Heteromyids and gophers: live-trapping surveys and research on nearly every species of California heteromyid (all kangaroo rats, both species of kangaroo mice, all pocket mice species), and selected gophers.

- Squirrels: live trapping and visual surveys on Mohave ground squirrel, Antelope ground squirrel, Palm Springs ground squirrel, live-trapping for chipmunk species (Sierra Nevada only).

- New World rats and mice: live trapping experience with most species of California cricetids (*Microtus*, *Neotoma, Peromyscus, Reithrodontomys, Onychomys*, and *Sigmodon*).

San Bernardino kangaroo rat (*Dipodomys merriami parvus*, SBKR) experience

SBKR live-trapping survey, Renaissance Specific Plan site in Rialto, San Bernardino County, California. 2017

SBKR survey at the proposed Cucamonga Basin Maintenance Project site in Upland, San Bernardino County, California. 2016

SBKR surveys for the Rancho Cucamonga North Eastern Sphere Annexation Area, San Bernardino County. 2015, 2016

SBKR survey for SoCalGas North-South gas line project, Reche Canyon. 2015

SBKR survey for Devils Canyon area, San Bernardino County Flood Control District. 2014

SBKR survey for Caltrans Interstate 15 Expansion Project, San Bernardino County. 2013, 2014

SBKR survey and relocation effort, State Department of Water Resources EBX II project site, Redlands. 2013

SBKR survey at a proposed SoCalGas gas repair site and access corridor in the North Fontana/Devore area of San Bernardino County. 2013

SBKR survey on the approximately 9.1 Acre Otto Property, Redlands. 2012

SBKR survey for approximately 1 mile Right of Way along Rialto Municipal airport (SCE). 2012

Survey for SBKR and LAPM on APNs 433-150-057 and 433-150-053 in the City of San Jacinto (San Jacinto Flood Control District). 2012

SBKR and LAPM survey for the San Jacinto River Stage 4 levee project area (San Jacinto Flood Control District). 2012

SBKR survey for the Pepper Avenue Road extension project, Rialto. 2012

SBKR survey for the California Department of Water Resources EBX II construction landing site, Redlands. 2012

SBKR survey for the proposed expansion of Highway 210 at City Creek, Plunge Creek, and Santa Ana River, San Bernardino County (CalTrans). 2012

SBKR survey for three Geotechnical Study Sites near Vulcan Materials Company's Muscoy Groin #2 Storm Drain Project Site, San Bernardino County (Vulcan Mining). 2012

SBKR survey along an approximately 0.75-mile proposed AT&T telephone line repair site and access corridor in the Beacon/Devore area of San Bernardino County (ATT). 2012

SBKR survey at site of a proposed transmission tower replacement project along Lytle Creek, San Bernardino County (SCE). 2012

SBKR survey on the Robertson's Ready Mix / Cemex mine expansion and mitigation sites, San Bernardino County. 2011

SBKR percent area occupied (PAO) survey of the Santa Ana River Woolly Star Preserve Area, San Bernardino County. 2007-2011

SBKR survey at the La Rivera Surface Drainage Improvement Project Site, Riverside, Riverside County, California. 2011

SBKR and LAPM survey on the Soboba Horseshoe Grande Fee to Trust project area, Riverside County. 2011

SBKR survey of the Opal Avenue Mitigation Property, San Bernardino County. 2011

SBKR survey of the Mill Creek/Garnet Street and Cone Camp Road Sites, San Bernardino County. 2011

SBKR survey on an approximately 5 Acre Site on the Wooly Star Preserve Area in the City of Redlands. 2010

SBKR live-trapping survey, Arrowhead project (SCE), San Bernardino County. 2009

SBKR survey of the SCE Alder-Declez project site, San Bernardino. 2009

SBKR Survey, Soboba Indian Reservation, Riverside County. 2009

SBKR survey at reference locations in the Woolly Star Preserve area, San Bernardino County 2007-2012

Selected Publications

Brylski, P., W.M. Miller, S. Dodd, and S. Montgomery. 2009. Addendum to the Pilot Monitoring Project for the Pacific Pocket Mouse, Orange County, California. Prepared for the Center for Natural Lands Management.

------. 2008. Pilot Monitoring Project for the Pacific Pocket Mouse CNLM Dana Point Preserve, Orange County, California. Prepared for the Center for Natural Lands Management.

Hedtke, S.M., K.R. Zamudio, C.A. Phillips, J. Losos, and P. Brylski. 2007. Conservation genetics of the endangered Coachella Valley fringe-toed lizard (*Uma inornata*). Herpetologica 63(4): 411-420.

Swei, A. P.V. Brylski, W.D. Spencer, S.C. Dodd, and J.L. Patton. 2003. Hierarchical genetic structure in fragmented populations of the Little Pocket Mouse (*Perognathus longimembris*) in Southern California. Conservation Genetics 4(4):501—514.

Brylski, P., R. Erickson, and D. Laabs. 1994. Pacific pocket mouse In Life on the edge: a guide to California's endangered natural resources: wildlife, C. G. Thelander and M. Crabtree, eds. Biosystems Books, Santa Cruz, California.

Brylski, P., L. Barkley, B. McKernan, S.J. Montgomery, R. Minnich, and M. Price. 1993. Proceedings of the Biology and Management of Rodents in Southern California Symposium. San Bernardino County Museum, Redlands, California, June 26, 1993. Presented by the Southern California Chapter of the Wildlife Society.

State/federal reports

U.S. Fish and Wildlife Service. 1998,. Pacific Pocket Mouse (*Perognathus longimembris pacificus*) Recovery Plan. Portland Oregon, 112 pp. (prepared by P. Brylski, L. Hayes and J. Avery)

Brylski, P. V., P. W. Collins, E. D. Pierson, W. E. Rainey, and T. E. Kucera. 1997. Mammal Species of Special Concern in California. Draft Final Report Prepared for the California Department of Fish and Game, Wildlife Management Division, Bird and Mammal Conservation Program, Sacramento, CA. Contract FG3146WM. 251 pp.

California Department of Fish and Game. 1990. California wildlife habitat relationships system. Volume III: Mammals. Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White, eds. California Interagency Wildlife Task Group, Sacramento, California. (prepared species accounts, range maps, and habitat relations data for selected small mammals)

Phillip Brylski, Ph.D.
Projects

Permits: San Bernardino kangaroo rat, Stephens kangaroo rat, Giant kangaroo rat, Tipton kangaroo rat, Fresno kangaroo rat, Pacific pocket mouse, Mohave ground squirrel, Amargosa vole, Mohave ground squirrel, salt marsh harvest mouse, and riparian woodrat. MOU for most California Mammal Species of Special Concern (small mammals only).

Small Mammals Experience

- Heteromyids and gophers: live-trapping surveys and research on nearly every species of California heteromyid (all kangaroo rats, both species of kangaroo mice, all pocket mice species), and selected gophers.

- Squirrels: live trapping and visual surveys on Mohave ground squirrel, Antelope ground squirrel, Palm Springs ground squirrel, live-trapping for chipmunk species (Sierra Nevada only).

- New World rats and mice: live trapping experience with most species of California cricetids (*Microtus*, *Neotoma, Peromyscus, Reithrodontomys, Onychomys*, and *Sigmodon*).

San Bernardino kangaroo rat surveys (SBKR, *Dipodomys merriami parvus*)

SBKR live-trapping survey, Renaissance Specific Plan site in Rialto, San Bernardino County, California. 2017

SBKR survey at the proposed Cucamonga Basin Maintenance Project site in Upland, San Bernardino County, California. 2016

SBKR surveys for the Rancho Cucamonga North Eastern Sphere Annexation Area, San Bernardino County. 2015, 2016

SBKR survey for SoCalGas North-South gas line project, Reche Canyon. 2015

SBKR survey for Devils Canyon area, San Bernardino County Flood Control District. 2014

SBKR survey for Caltrans Interstate 15 Expansion Project, San Bernardino County. 2013, 2014

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SBKR live-trapping survey, Arrowhead project (SCE), San Bernardino County. 2009

SBKR survey of the SCE Alder-Declez project site, San Bernardino. 2009

SBKR Survey, Soboba Indian Reservation, Riverside County. 2009

SBKR survey at reference locations in the Woolly Star Preserve area, San Bernardino County 2007-2012

Stephens' kangaroo rat (SKR, *Dipodomys stephensi*)

SKR survey for the Meridian Trunk Sewer, March Air Base, Riverside County. 2018

SKR survey for the Freeway Business Center Project, Moreno Valley, Riverside County. 2018

SKR surveys for the SDG&E TL 686 wood to steel pole replacement project, Warner Springs, San Diego County. 2017, 2018

SKR surveys for the SDG&E Cleveland National Forest Power Line Replacement Projects. 2017

SKR survey at SoCalGas project at the Moreno Compressor Station, Moreno, Riverside County. 2014

SKR survey, Fallbrook Naval Weapons Center, San Diego County. 2013

SKR and LAPM survey, Lake Perris Dam Remediation project, Riverside County. 2009, 2012

SKR and LAPM survey, Alberhill System Project (SCE), Riverside County. 2011

SKR survey for the County Parks Oak Country II Trails Project, San Diego County. 2011

SKR survey for the proposed southern route of the SDGE Sunrise Powerlink project in San Diego County. 2010

SKR survey at the Center for Natural Land Management March SKR Preserve, March Air Force Base Annex, Riverside County. 2009

SKR survey, Portero and LaBorde Canyons, Riverside County. 2008

Pacific pocket mouse (PPM, *Perognathus longimembris pacificus*)

Results of a trapping survey for the federally endangered Pacific pocket mouse (PPM, *Perognathus longimembris pacificus*) at the proposed Caltrans SR-133 Safety Improvement Project at El Toro Road in Laguna Beach, Orange County. 2016

Pacific Pocket Mouse Focused Trapping Results for the Relocation of the 41 Area Landing Zone and MILCON P-1331 Project Actions, Marine Corps Base Camp Pendleton, San Diego County. 2015

PPM survey for 2013 Marine Corps Forces Special Operations Command Expansion Project, Camp Pendleton, San Diego County. 2013.

Monitoring for PPM on the CNLM Dana Point Preserve, Orange County, California. 2012

Addendum to the Pilot Monitoring Project for the PPM, 2009 CNLM Dana Point Preserve, Orange County. 2012

Focused Surveys for the PPM and SKR for the Marine Corps Base Camp Pendleton Basewide Water Infrastructure and Stuart Mesa Bridge Replacement (BWI & SMBR) project, San Diego County, California. 2011.

PPM survey, Exchange Hospital, MCB Camp Pendleton. 2009.

PPM survey for San Mateo North Population, California State Parks. 2010

PPM survey, Combat Marksmanship Range (CMR), Marine Corps Base Camp Pendleton, California. 2010.

PPM survey, 31 Area, Marine Corps Base Camp Pendleton, California. 2010.

PPM survey, Range 501, Marine Corps Base Camp Pendleton, California. 2011.

Los Angeles pocket mouse (LAPM, *Perognathus longimembris brevinasus*)

LAPM survey, Mt. San Jacinto Community College District, San Gorgonio Pass Campus, Banning, Riverside County. 2012

LAPM Survey, Murrieta, SCE Transmission Line Right-of-Way. 2008.

LAPM survey on the Banning Truck Weigh Station, a 5-Acre Property in Banning, Riverside County. 2010.

LAPM survey on APN 459-020-067 (southern part), Riverside County. 2012.

Survey for SKR and LAPM for the Lake Perris Dam Remediation Project, Riverside County.

Giant kangaroo rat (*Dipodomys ingens*)

Live-trapping survey for the giant kangaroo rat (GKR, *Dipodomys ingens*) at the proposed Exxon-Mobil Midway meter site, Kern County, California. 2016

Mojave ground squirrel (*Xerospermophilus mohavensis*, MGS**)**

Mohave ground squirrel surveys, BigBeau solar project, Kern County. 2018

Surveys for Mojave ground squirrel and desert tortoise, Mojave-Rosamond Recycling and Sanitary Landfill, Kern County. 2018.

Mohave Ground Squirrel Habitat Assessment, Sanborn Solar Project, Kern County. 2018

Mohave Ground Squirrel Habitat Assessment and Live-Trapping Survey, Edwards Air Force Base Solar Project. 2018

Mohave Ground Squirrel Survey for the Victor Elementary School No. 20, APN 0394-031-37, Victorville, San Bernardino County. 2017

Mohave Ground Squirrel Survey for the Pathways to College Charter School, APN 0394-031-37 Hesperia, San Bernardino County. 2017

Mohave Ground Squirrel Survey for the North First Avenue - Mojave River Bridge Replacement Project, Barstow, San Bernardino County. 2017

Live-trapping survey for the California-threatened Mohave ground squirrel for the Leadership Academy School, Hesperia, San Bernardino County. 2016

Results of a trapping survey for the California-threatened Mohave ground squirrel on APN 0465-6311-3-0000 in Helendale, San Bernardino County. 2015

MGS live-trapping survey for SoCalGas North-South gas line project in Adelanto. 2015

MGS live-trapping survey for the Adelanto Solar Project. 2013

MGS habitat assessment and live-trapping survey, North First Avenue Grade Separation and Bridge Replacement Project, Barstow. 2013.

MGS habitat assessment for the California Threatened Mohave Ground Squirrel (MGS) on the Fremont Valley System New Well 1-02 Project, APN 470-251-20-8, Kern County. 2012.

MGS live-trapping survey, Amethyst Basin, Victorville, San Bernardino County (San Bernardino County Flood Control District). 2012.

MGS live-trapping survey, CalTrans High Desert Corridor project, San Bernardino County. 2011.

MGS surveys, Edwards Air Force Base, Kern County. 1994, 2009-2011, 2013.

MGS live-trapping Survey, Mohave Element Energy, Assessor's Parcel Number 427-020-45, Mojave, Kern County. 2012

MGS habitat assessment of the SCE Oasis Substation, Palmdale, Los Angeles County. 2010.

MGS live-trapping survey, Snowline Joint Unified School District Support Services Complex, APNs 3098-311-11, Phelan, San Bernardino County. 2008.

MGS live-trapping survey, Snowline Joint Unified School District, High School #2, APNs 3097-391-02 through 3097-391-10, San Bernardino County. 2008.

MGS live-trapping survey, Capital Pacific Homes 80-acre Parcel, Rosamond, Kern County. 2007.

Studies of MGS and other small mammals for baseline assessment of geothermal power development impacts. China Lake Naval Weapons Center and adjoining areas of Owens Valley. (client: China Lake Naval Weapons Center; main biological contractor: Philip Leitner). 1979.

Other Small Mammal Surveys

Small mammal surveys, Imperial Irrigation District. Carried survey for cotton rats (*Sigmodon* spp.) in support of the Imperial Irrigation District's Habitat Conservation Plan.

Surveys for Palm Springs ground squirrel and Palm Springs pocket mouse, Desert Hot Springs, Riverside County. 2009.

Burrrowing owl

Burrowing owl survey for the Falcon Ridge Substation Project, Rancho Cucamonga, Fontana, and Rialto, San Bernardino County. 2014. (protocol survey)

Burrowing owl survey, Mt. San Jacinto Community College District, San Gorgonio Pass Campus, Banning, Riverside County. 2012 (protocol survey)

Burrowing owl survey, Hesperia Crosswalk school site, San Bernardino County. 2012 (protocol survey)

Burrowing owl survey, APN 388-110-008, Menifee Wireless Facility, 29801 Scott Road, Menifee, Riverside County. 2012 (protocol survey)

Burrowing owl survey, SiteMaster Site, APN 532-180-044, Banning, Riverside County. 2013 (protocol survey)

Beaumont High School Overpass, Burrowing Owl Survey, Beaumont, San Bernardino County 2012 (protocol survey)

Habitat Assessment for Sensitive Plants; Burrowing Owl Survey, Perris Middle School and Central Kitchen, Perris (protocol survey)

Habitat Assessment for Sensitive Plants; ; Burrowing Owl Survey; MSHCP Consistency Analysis for APN 436-280-010, San Jacinto, Riverside County (protocol survey)

Desert Tortoise and burrowing owl survey (non-protocol survey) and rare plant assessment, SCE Oasis Substation Project Site, Los Angeles County (2009)

Burrowing owl surveys (non-protocol sweeps), Southern California Edison TRTP project, Los Angeles County, 2010 – 2012.

Regional burrowing survey, San Diego Association of Governments, San Diego County. 2010. (non-protocol survey)

Biological Assessments

Antelope Valley Area Plan Update EIR (program level biological assessment). 2014

Anaheim Canyon Specific Plan EIR (program level biological assessment). 2013

Perris Middle School and Central Kitchen, Habitat Assessment for MSHCP Consistency Analysis, Perris, Riverside County. 2013

MSHCP consistency analysis and habitat assessment for sensitive plants and burrowing owl, APN 436-280-010, San Jacinto, Riverside County. 2013

San Clemente General Plan EIR, Orange County (program level biological assessment). 2013

Two Bunch Palms Elementary School Solar Array, Desert Hot Springs, Riverside County. 2013

Hesperia Crosswalk Charter School, San Bernardino County. 2012

Mt. San Jacinto College San Gorgonio Pass Campus, Banning, Riverside County. 2012

Jurisdictional wetlands permitting, Palm Desert High School. 2011

Beaumont High School Expansion, Riverside County. 2010

Carlsbad High School #2, San Diego County. 2010

Irvine Business Complex EIR, Irvine, Orange County (program level biological assessment). 2009

Palm Springs Unified District Service Center. 2009

Bristol Street Widening At 17th Street NES, Santa Ana. 2009

University High School Stadium Project, Irvine, Orange County. 2008

Tonner Canyon Vegetation Management Area, Los Angeles and San Bernardino counties. 2008

Snowline Joint Unified School District, High School #2, Victorville, San Bernardino County. 2008

Vista Del Mar Elementary School, San Diego. 2008

Rowe School Site Biological Constraints Analysis, San Diego County. 2007

Snowline School District Support Services Complex Development Plan, Phelan, San Bernardino County. 2007

Construction Monitoring

Beacon Solar project, California City (MGS, desert tortoise). 2013-2016 (on-going)

SCE, TRTP construction monitor. 2010-2015

CalTrans construction monitor, Interstate-15 improvement project (SBKR). 2013

Camp Pendleton construction monitor (PPM). 2012

SanBag, Palm Avenue Grade Separation project (SBKR). 2013, 2014

San Diego Gas & Electric Sunrise Power Link Project, construction monitor for bighorn sheep. 2012, 2013

State of California
Department of Fish and Wildlife

Original on file.
Received April 17, 2019

Date: April 4, 2019

To: Melissa Miller-Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Agenda Item for the April 17, 2019 Meeting: Receipt of Restricted Species Permit Application to Possess Transgenic Zebrafish**

San Diego State University (SDSU) has applied for a Restricted Species Permit to possess transgenic zebrafish (*Danio rerio*). According to Title 14, Section 671.1(a)(8)(H), all approved applications to possess a transgenic aquatic animal shall be reviewed by the Commission at a regularly scheduled meeting. The Commission may deny the issuance of a permit if it determines that the applicant is unable to meet the regulatory requirements for the importation, transportation, possession, and confinement of transgenic aquatic animals.

The transgenic zebrafish will be used for biomedical research. Zebrafish have become a popular and commonly used organism for the study of vertebrate gene function and human genetic disease. The Department currently permits approximately 20 facilities to possess transgenic zebrafish for the purpose of biomedical research. SDSU has agreed to comply with containment and security conditions as specified in Title 14 of the California Code of Regulations. Fisheries Branch has coordinated with the regional staff responsible for this area and the Fish Health Lab. The Department recommends issuing SDSU a Restricted Species Permit to possess transgenic zebrafish.

If you have any questions or need additional information on this matter, please contact Kevin Shaffer, Chief, Fisheries Branch at (916) 327-8840.

Attachment

ec: Stafford Lehr, Deputy Director
Wildlife and Fisheries Division
Stafford.Lehr@wildlife.ca.gov

Kevin Shaffer, Chief
Fisheries Branch
Wildlife and Fisheries Division
Kevin.Shaffer@wildlife.ca.gov

Roger Bloom, Program Manager
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Roger.Bloom@wildlife.ca.gov

Mark Adkison, Ph.D.
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John O'Brien
Senior Environmental Scientist
(Supervisor)
South Coast Region (Region 5)
John.O'Brien@Wildlife.ca.gov

California Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE

RESTRICTED SPECIES PERMIT NO. 1726
2019 RESTRICTED SPECIES PERMIT RENEWAL APPLICATION
PERMITTEE TYPE:
PERMIT TYPE(S): RESEARCH - DETRIMENTAL SPECIES

CDFW Received DEC 17 2018 BY LRB

PERMITTEE'S BUSINESS NAME	CONTACT PERSON ~~RULON CLARK~~	CONTACT TITLE	BUSINESS PHONE/EXT.	EMAIL ADDRESS
SAN DIEGO STATE UNIVERSITY	Rick Gullzia	~~PROFESSOR, DEPT CHAIR~~ Director of Research Affairs	~~(619) 594-1837~~ 619-594-5938	rgullzia@sdsu.edu

MAILING ADDRESS	CITY	STATE	ZIP CODE	COUNTRY
~~DEPT OF BIOLOGY, 5500-5260~~	SAN DIEGO	CA	92182-1933	USA
CAMPANILE DR STREET ADDRESS (IF DIFFERENT THAN ABOVE)	CITY	STATE	ZIP CODE	COUNTRY

I HAVE CONTINUOUSLY RESIDED IN CALIFORNIA FOR THE LAST SIX MONTHS. YES [X] NO [ ]
Resident is defined as any person who has resided continuously in the State of California for six months or more immediately prior to the date of this application for a permit, any person on active military duty with the Armed Forces of the United States or auxiliary branch thereof, or any person enrolled in the Job Corps established pursuant to Section 2093 of Title 29 of the United States Code

PERMITTEE'S NAME (IF APPLYING AS AN INDIVIDUAL)	GO ID NUMBER	DATE OF BIRTH	DAYTIME PHONE
	~~G00274678~~		

CHECK TYPE(S) OF PERMIT

[ ] ANIMAL CARE - DETRIMENTAL SPECIES	$506.50	
[ ] ANIMAL CARE - WELFARE SPECIES	$61.80	
[ ] AQUACULTURE	$506.50	
[ ] AZA - DETRIMENTAL SPECIES	$506.50	
[ ] BREEDING	$506.50	
[ ] FISH	$506.50	
[ ] NATIVE SPECIES EXHIBITING	$506.50	
[ ] NONRESIDENT BROKER/DEALER	$1,005.25	
[ ] NONRESIDENT EXHIBITING	$1,005.25	
[ ] NONRESIDENT NUISANCE BIRD ABATEMENT	$1,005.25	
[X] RESEARCH - DETRIMENTAL SPECIES	$506.50	506.50
[ ] RESIDENT BROKER/DEALER	$506.50	
[ ] RESIDENT EXHIBITING	$506.50	
[ ] RESIDENT NUISANCE BIRD ABATEMENT	$506.50	
[ ] SHELTER	$61.80	
[ ] SINGLE EVENT BREEDING FOR EXHIBITOR	$61.80	
PERMIT(S) FEE SUBTOTAL		$ 506.50

STANDARD INSPECTION FEE IS BASED ON THE NUMBER OF ENCLOSURES
CHECK NUMBER OF ENCLOSURES AND RECORD THE CORRESPONDING STANDARD INSPECTION FEE BELOW:

1-5 Enclosures	$248.49
6-25 Enclosures	$348.50
26-50 Enclosures	$566.75
51-100 Enclosures	$889.50
101-500+ Enclosures	$3,278.00

PERMIT(S) FEE SUBTOTAL		$ 506.50
NONREFUNDABLE APPLICATION FEE	$62.32	$ 62.32
STANDARD INSPECTION FEE		$ 248.49
AQUACULTURE INSPECTION FEE Applicants for aquaculture permits shall pay this inspection fee.	$1,046.60	$
ELE/MOU NEW FEE Applicants for research permits may pay the ELE/MOU fee in lieu of the standard inspection fee	$460.75	$
ELE/MOU RENEWAL FEE Applicants for ELE/MOU inspections shall pay renewal fee	$58.45	$
GRAND TOTAL		$ 817.31

WILL ANIMALS BE IMPORTED INTO CALIFORNIA? [X] YES, COMPLETE IMPORTATION SECTION [ ] NO, EXPLAIN

IMPORTATION ONLY - COMPLETE THIS PORTION OF THE APPLICATION IF YOU ARE IMPORTING ANIMALS INTO CALIFORNIA.

List Species to be Imported	No. of Animals	Origin (State or Country)
Transgenic Zebrafish (wt1b:CFP, vitdbp:GFP strains	100 embryos	North Carolina

Person/Business Shipping Animals	Day Phone
Dr. Weibin Zhou, PhD, Duke University	(919) 684-2907

Address	City	State	Zip Code
300 N. Duke Street, Suite 47-109 - DUMC 104775	Durham	NC	27701

Name of Carrier	Point of Entry into California
Not Yet Known	Not Yet Known

Applicant's Certification: *I certify under penalty of perjury under the laws and regulations of the State of California that all information on this application is true and correct and I am not violating any city or county laws. I agree to comply with the provisions of Section 671, Title 14, of the California Code of Regulations. I understand it is unlawful to use or possess a permit which was obtained by fraud or deceit (Fish and Game Code Section 1052b). I understand that in the event that this information is found to be untrue or incorrect, the permit will be considered invalid and must be surrendered where purchased and I will be subject to criminal prosecution. I further understand that failure to comply with the terms and conditions of a permit may result in revocation of current permit and/or denial of future permits. Violation of this section is a misdemeanor, punishable by a fine of not more than $1,000.00, imprisonment in the county jail for not more than six months, or both the fine and the imprisonment. In addition, I may be subject to civil penalties as stated in Fish and Game Code*

APPLICANT'S SIGNATURE (MUST BE IN INK) Date

X Rick Gullzia 12/07/18

FOR DEPARTMENT OF FISH AND WILDLIFE USE ONLY

REVIEWED BY/DATE TRANSACTION # ISSUED BY/DATE

California Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE

RESTRICTED SPECIES PERMIT NO. 1726 Page 1

2018 INVENTORY OF ANIMALS RENEWAL

CDFW Received DEC 17 2018 BY LRB

ATTN: ~~RULON CLARK, PROFESSOR, DEPT CHAIR~~
Rick Gulizia, Director of Research Affairs
SAN DIEGO STATE UNIVERSITY
DEPT OF BIOLOGY, ~~5500~~ 5250 CAMPANILE DR
SAN DIEGO CA 92182-1933

LOCATION(S) OF ANIMALS NOTE: Animals being held at multiple locations require inspection certification by the Department that each of those facilities meet minimum applicable housing requirements as set forth in Sections 671.1(a)(8)(A-F), 671.2, 671.3 - 671.4, 671.4(e) and/or 671.7, Title 14, of the California Code of Regulations (CCR).

ADDRESS	CITY	STATE	ZIP	COUNTY
~~ANIMAL CARE/LIFE SCIENCE BLDG, ROOM 133~~ Hardy Tower, Room 224	SAN DIEGO	CA	92182-4162	SAN DIEGO

INSTRUCTIONS: Listed below are the animals you are currently authorized to possess. REVIEW AND EDIT: make any necessary changes (i.e. deaths, number of animal(s), age of animal(s), acquisitions, transfers, etc.) by crossing out and writing in changes, prior to submitting your renewal application. UNIQUE IDENTIFIERS AND METHOD (see Section 671.1(c)(3)(J), Title 14, of the CCR): Specify the number, letter or any combination thereof in the Unique ID field and use the following to denote identifying method in the ID Method field for required species: M=Microchip; T=Tattoo; or A=Alternative Method. The Department may approve an alternative method if the permittee provides written verification from a veterinarian accredited by the USDA explaining why it would be detrimental to the health of an animal to microchip or tattoo the animal and what alternative method of unique identification would be suitable. FACILITY IDENTIFICATION: Required for permittees whose permit conditions specify animal identification required other than those species specifically requiring animal identification. This identification may include but is not limited to the animals given name (i.e. Sally, Duke), intake ID, studbook ID, band number, or government or institution (i.e. AZA, USFWS) ID. AQUACULTURE AND FISH PERMITTEES: Identify the actual number in the No. field and identify either W=Weight; V=Volume; or C=Count in the Method field. IMPORTATION ONLY SECTION: Remember to complete this section of your renewal application for all animals being imported into California. ANIMAL CARE AND, NATIVE SPECIES EXHIBITING AND OTHER DESIGNATED PERMITTEES (see permit conditions): You are not authorized to obtain any new species or new animals without prior written approval from the Department.

UNIQUE ID	IDENTIFYING METHOD	COMMON NAME	SCIENTIFIC NAME	FACILITY ID	NO.	SEX	AGE YRS	AGE MOS	TBA*	NS**
A	Closed & isolated system, tank labels	Zebrafish, from the following transgenic strains: AB (wild type, not transgenic) Tg (ins:nfsb::mCherry) mitfa-/- Tg (VitDbp::GFp) Tg (wt1b::GFp)	Danio rerio	SDSU	1500	M/F	2			

I certify under penalty of perjury under the laws and regulations of the State of California that all information on this Restricted Species Permit Inventory of Animals form is true and correct. I understand that false or incomplete information may result in denial or revocation of a permit and/or criminal prosecution

APPLICANT'S SIGNATURE (MUST BE IN INK)	Date
X Rick Gulizia	12/7/18

State of California – The Natural Resources Agency -- EDMUND G. BROWN, Jr. Governor
DEPARTMENT OF FISH AND GAME CHARLTON H. BONHAM, Director
License and Revenue Branch
1740 North Market Boulevard
Sacramento, California 95834
(916) 928-5845
Fax (916) 419-7586
www.dfg.ca.gov

SAMPLE
EMERGENCY ACTION PLAN FOR
San Diego State University
Revised: November 9, 2018

a. List of the re-capture equipment available, including but not limited to darting equipment, nets, traps, and chemical immobilization drugs for animals listed on your inventory;

These fish species cannot survive in San Diego waters, and thus pose very low ecological risk. The waters along the California coast are also too cold to enable zebrafish breeding. All enclosures are contained in a larger rack system with circulating water, and therefore the risk of escape is near zero. In the rare event that a fish could escape its enclosure, it would be transported to the rack's internal water reservoir near the sump, and therefore is in secondary containment. In the case of emergency, such as a severe earthquake which is able to dislodge the secure rack system from the walls and building infrastructure, an escaped fish might possibly fall to the ground of the laboratory. This room is secured from public access, with only approved and secured individuals being permitted to enter and exit the room. The only exit from the room is a floor drain to the municipal wastewater system, on which a grate has been installed so that no fish could exit the room. Therefore, any fish falling to the floor would be out of the water and would perish. Therefore, there is VERY low risk of escape.

b. Description of humane lethal dispatch methods for various animals and a list of qualified personnel who are trained to carry out the methods;

If a fish escapes to the secondary containment chamber or the floor of the vivarium, all efforts will be made to return the fish to its proper tank using aquarium nets. However, if the fish has been out of water too long, it will be humanely euthanized to minimize discomfort and distress. Euthanasia is performed using MS-222 (tricaine) for 30+ minutes, followed by freezing in a carcass waste bag, and then disposal in biological waste containers. All laboratory personnel will be trained in these methodologies, and all protocols and personnel will be approved by the San Diego State University Institutional Animal Care and Use Committee.

c. List of medical supplies/first aid kits (both animal and human) and where they are located;

At any sign of distress or discomfort to fish, the animal will be humanely euthanized. Euthanasia is performed using MS-222 (tricaine) for 30+ minutes, followed by freezing in a carcass waste bag, and then disposal in biological waste containers. All laboratory personnel will be trained in these methodologies, and all protocols and personnel will be approved by the San Diego State University Institutional Animal Care and Use Committee.

First aid kits for laboratory personnel are located in room Hardy Tower 214, near other personal safety equipment such as an eye wash station and shower.

d. Description and number of mobile transport cages and equipment on hand to accommodate all animals listed on your inventory;

No adult fish will be allowed outside of room Hardy Tower 224 (vivarium), as they are only maintained as breeding populations on the automated system. Embryos for research will be collected into covered petri dishes, placed into a polypropylene secondary containment bin, and transported to the research laboratory, room Hardy Tower 204 (2 rooms down from the vivarium). Embryos are maintained inside of petri dishes, inside of a sealed incubator, and therefore pose no risk for escape.

e. List of emergency telephone numbers that includes 911, the local Department of Fish and Game regional office (find telephone number at www.wildlife.ca.gov/regions), and animal control agencies;

1 - 911
2 - CA Fish & Game Regional office
South Coast Regional Office: (858) 467-4201
3 - County/City Animal Control Agencies (insert here name/telephone number)
San Diego County Department of Animal Services, Emergency Line: (619) 236-2341
4 - Veterinarian - (insert here name/telephone number)
Mari Bray, mbray@lavcs.onmicrosoft.com, Phone: (858) 663-6107

f. Written plan of action for various emergencies (i.e. animal escape, animal evacuation, animal attack).

Zebrafish are not physically harmful to humans, and therefore pose to risk for attack or emergency. Because they cannot survive outside of tanks, any required evacuation can be controlled by placing tanks into polypropylene secondary containment bins and kept on a mobile cart. Zebrafish are unable to escape the facility due to various physical and physiological barriers, including drain covers, secure vivarium entrance, and the inability of the zebrafish to survive in ambient conditions (outside of water). Embryos are maintained inside of petri dishes, inside of a sealed incubator, and therefore pose no risk for escape.

Graduate and Research Affairs
Institutional Animal Care and Use Committee
San Diego State University
5500 Campanile Drive
San Diego CA 92182-8220
Tel: 619-594-0905

SAN DIEGO STATE UNIVERSITY

October 10, 2018

Professor Karilyn Sant
Public Health, San Diego State University

APF#: 18-09-011S
Title: *How Do Embryonic Exposures to Environmental Contaminants Alter Kidney and Embryonic Development?*
Protocol Category of Use: D
Subject: **IACUC Approval**

Dear Professor Sant:
The project referenced was reviewed and approved by the Institutional Animal Care and Use Committee (IACUC) in accordance with the requirements pertaining to animal subjects protections within the Public Health Service Policy and USDA Animal Welfare Regulations on **October 10, 2018.** Approval carries with it the understanding that you will contact the Committee promptly to report any unanticipated or serious adverse events, to obtain authorization to implement any proposed changes to the protocol, to document a change in your affiliation with SDSU, and/or to report study completion. Any **proposed changes to the protocol must be submitted on an amendment form, reviewed and approved by the IACUC before those changes can be implemented. Submit addition or deletion of personnel to iacuc@sdsu.edu. Personnel added to the protocol must complete all training requirements prior to working with animals.**

Approval is only valid provided:

- **All personnel have completed the necessary training requirements;**
- **The necessary restricted species permit(s) have been obtained from California Department of Fish and Wildlife;**
- **The necessary approvals are in place from the SDSU Institutional Biosafety Committee for work with transgenic animals.**

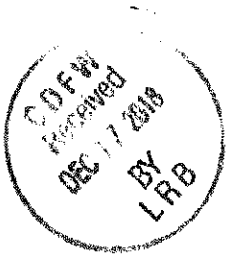
IMPORTANT: Your APF number is 18-09-011S. This number must be placed in all relevant places (i.e., fish tanks, husbandry log books, etc.) along with any other relevant information about the animal.

Protocol approval is valid for up to three years provided you submit annual continuation forms to the IACUC for review. Your 1st year annual continuation is due **October 10, 2019.** The IACUC office will send you a reminder to renew your protocol; however, **it is your responsibility to submit a completed Annual Continuation Form at least four weeks in advance of the due date.**

The IACUC office will send you the final version of your final approved protocol, it is your responsibility to maintain the current approved version of your protocol at all times for future reference and personnel training purposes. Any changes to this protocol must be reviewed and approved by the IACUC prior to initiation.

For questions related to this correspondence, please contact the IACUC office at (619) 594-0905 or e-mail iacuc@sdsu.edu.
Sincerely,

Todd W. Anderson, Ph.D.
Chair, Institutional Animal Care and Use Committee
TWA:clc
Protocol Expiration Date: October 10, 2021
Copy to: Institutional Biosafety Committee



Project Description, Kari Sant, SDSU

SDSU IACUC Animal Protocol Form #18-09-011S Approved October 10, 2018

The purpose of my research is to understand the risks associated with common drinking water contaminants during pregnancy, and how these gestational exposures may predispose children to diabetes. This study is important for characterizing human health risks associated with new and poorly understood hazards, such as perfluorinated compounds which have been detected in 99.7% of Americans. Perfluorinated compounds mostly act through a signaling pathway known as the Peroxisome proliferator-activated receptor (PPAR) signaling pathway, which has been widely implicated in kidney diseases. PPAR signaling has been explored as a pharmacological target for diseases such as diabetes and obesity, and therefore more information is needed to better understand how this affects human development. Ultimately, my goal is to help improve our understanding of the health consequences from these exposures, communicate these risks to stakeholders, and to inform technologies and policies which may reduce the associated health burdens. Zebrafish embryos are structurally and physiologically similar to human embryos during gestation, and can therefore be used in order to better understand human health risk.

STATE OF CALIFORNIA
FISH AND GAME COMMISSION
AMENDED INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION

Amend Section 354
Title 14, California Code of Regulations
Re: Archery Equipment and Crossbow Regulations

I. Date of Amended Initial Statement of Reasons: **February 12, 2019**

II. Dates and Locations of Scheduled Hearings

(a)	Notice Hearing:	Date:	December 12-13, 2018
		Location:	Oceanside, CA
(b)	Discussion Hearing:	Date:	February 6, 2019
		Location:	Sacramento, CA
(c)	Adoption Hearing:	Date:	April 17, 2019
		Location:	Santa Monica, CA

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

The California Department of Fish and Wildlife (Department) proposes two amendments to Section 354, which are related to law enforcement:

First, the provision in subsection 354(f) requires that a bow "cast a legal hunting arrow ... 130 yards", however this is unenforceable since it is impossible to demonstrate inside a courtroom. There is a need for clarification of the regulation to require that archery equipment be strong enough to project an arrow at a rate that it will be lethal to the game mammal and also be enforceable. For clarity, the Department proposes requiring a bow draw weight of at least 40 pounds and crossbow draw weight of at least 125 pounds to make it practical to demonstrate in the field and in a courtroom. Draw weight as used in archery sports is the measure of force required to draw the bow to a ready-to-fire position.

Second, the provision in subsection 354(h) states that "archers may not possess a firearm while hunting in the field during any archery season, or while hunting during a general season under the provisions of an archery only tag." The subsection also provides an exception, by reference to Fish and Game Code (FGC) 4370, which permits peace officers to carry a concealed firearm. The Department proposes an amendment allowing possession of a concealable firearm while hunting big game other than deer under the authority of an archery only tag, provided the hunter does not use that firearm in any way to take the game animal. Regarding deer hunting, Fish and Game Code section 4370(a)

provides that, except for peace officers identified in Fish and Game Code section 4370(b), “a person taking or attempting to take deer during such archery season shall neither carry, nor have under his or her immediate control, any firearm of any kind.” Thus, to comply with Fish and Game Code section 4370, the proposed regulation change to allow possession of a concealed firearm while archery hunting extends to hunting big game other than deer.

Bow Draw Weight

Ethical bow hunting requires that a bow to be strong enough to project an arrow at a rate that it will inflict the maximum damage to the game mammal in the interest of killing it quickly to minimize suffering of that animal. As currently provided in subsection 354(f), a bow that can cast an arrow at least 130 yards is an example of a bow that is ethical to use because it generates enough force to quickly kill the game animal. However, demonstrating that a bow hunter may be using a bow suspected of being less than capable of casting an arrow 130 yards is impractical for both the archer and law enforcement. Testing in the field is difficult, and demonstrating the bow’s strength in a courtroom is impractical.

The regulation change would serve to clarify the regulation for hunters and to simplify law enforcement efforts by Wildlife Officers. Research has been done by other state wildlife management agencies to determine a draw weight that generates enough force to quickly kill the game animal. The proposed amendment identifies a minimum draw weight, similar to what regulations in other western states require (see table, below).

Table: Minimum Draw Weight (lbs.)

State	Bow	Crossbow
Washington	40	125
Idaho	40	150
Nevada	40	125
Arizona	30	125

The widely accepted method of measuring a bow’s draw weight has been to use a device called a bowscale. A bowscale is very similar to a simple scale commonly used to measure the weight of suitcases. They are inexpensive and widely available for the hunter to use to assure the bow is in compliance with regulation. A wildlife officer can easily use a bowscale in the field for a compliance check or to demonstrate draw weight in a courtroom. In practical application, archers can have their equipment checked in a retail hunting store (usually without cost); bow hunters can acquire equipment that is preset at a certain bow weight (included in the purchase); or the hunter can acquire a bow scale at a cost of $10-20.

New Information Received

As a result of the public comments provided at the Fish and Game Commission's discussion hearing in Sacramento, CA on February 6, 2019 from members of the California Bowmen Hunters (the original requester of this regulatory change) and the State Archery Association, a request through public testimony was made to reduce the proposed draw weight from 40 pounds to 30 pounds.

The rationale is two-fold. Bow technology is vastly more advanced than previous bows in use when the original 40 pound minimum standard was broadly enacted by multiple states in the 1970s and 1980s. A bow manufactured within the past two to three decades with a 30 pound draw weight can cast the same arrow with the same force as an older 40 pound draw weight counterpart. It has more than enough force to cast an arrow to meet the previous minimum standard of casting an arrow 130 yards and is more than adequate to humanely and quickly kill a game mammal. The minimum bow strength of 30 pounds will prevent inadvertently excluding younger, smaller or older hunters from engaging in the activity because they are not strong enough to draw a bow back with a 40 pound draw weight.

Here is the current breakdown of draw weight regs in the U.S.:

- **19 states (including CA) have no minimum draw weight requirement.**
- **8 states have a 30-pound requirement.**
- **10 states have a 35-pound requirement.**
- **13 states have a 40-pound requirement, some of these states are currently reconsidering the requirement.**

The recommended minimum draw weight of 30 pounds for bows is sufficient to meet the ethical standard.

Concealable Firearms

Subsection 354(h), prohibits archers (bowhunters) from possession of a firearm while hunting under the authority of an archery only tag. An exception is made in Section 4370, Fish and Game Code, which authorizes possession of a concealable firearm by active or honorably retired peace officers. The proposed amendment would expand authorization to possess a concealable firearm to anyone, not just peace officers, and to comply with FGC Section 4370, would apply while hunting big game other than deer. The change would continue to prohibit possession of non-concealable firearms and use of the firearm for purposes of take.

Archery hunters are granted authority to hunt with an archery only tag prior to the general season in most places where hunting is authorized. The early season generally provides them an advantage over firearm hunters with respect to the fact there are fewer hunters, less firearms reports (noise) from areas where hunting is common, and less pressure on

the game animal - deer in particular. Because of this advantage, the legislature passed FGC 4370 to authorize archery hunting while preventing illegal take of a deer via a firearm by providing an explicit prohibition for possession of a firearm while engaged in hunting with an archery only tag. Section 354(h) contains similar language prohibiting possession of a firearm with an archery only tag.

Since the original authorization of archery only hunting and the subsequent prohibition on possession of a firearm, the primary argument against the prohibition of possession of a firearm while archery hunting was for personal safety from potentially dangerous animals. The two primary animals described as possibly posing a threat are bears and mountain lions. Going back decades, there are very few examples of incidents where bowhunters have needed to protect themselves from dangerous animals in California's wild. But recently two examples exemplified a change in that pattern.

In the summer of 2018, there were two incidents involving archery hunters who were threatened by dangerous animals. One man shot a bear with an arrow and went to retrieve it. When he found the injured bear it attacked and severely mauled him. Wildlife officers discovered evidence to suggest he managed to get a shot off with another arrow at the attacking bear and it glanced off the bear's face. The bear ultimately died from its injuries and the man spent several days in the hospital recovering from the mauling. Another archery hunter was approached by a mountain lion coming directly at him. The man reported shouting at the mountain lion as scare tactic to no avail. The bowhunter exercised extraordinary poise considering the threat coming at him and managed draw an arrow and shoot it through the lion's eye socket – killing the mountain lion. He appropriately reported the incident to the Department. That extraordinarily accurate shot is not normal. The average bowhunter may have been off by a fraction of an inch and caused a glancing blow, and an unpredictable reaction from the lion.

An additional threat to bowhunters, and all hunters, has emerged over the last twenty years. The Department has seen a significant increase in the presence of members of international drug trafficking organizations who illegally cultivate marijuana on rural public and private lands. Thousands of such sites exist on the landscape. These illicit growers are usually well armed and are treated as potentially violent by law enforcement. Wildlife officers and members of allied agencies who work in the area of illegal marijuana cultivation enforcement have been forced into officer involved shootings at least once every year for many years while conducting illicit marijuana cultivation enforcement activities. Most illicit marijuana cultivation occurs off the trails and is on locations very difficult to reach by normal hikers and outdoor enthusiasts. However, hunters go places where many others do not venture and have an increased probability of contacting these potentially dangerous people.

The Department recommends an amendment to authorize archery hunters who wish to carry a concealable firearm, except while deer hunting.

(b) Goals and Benefits of the Regulation:

Section 354(f), Title 14, CCR is unenforceable and there is no way to apply the

section in a courtroom to demonstrate a violation. As a result, the Department has no record of the citation ever being written in a database search of tens of thousands of citations written since September 2013. Amendments to require a minimum draw weight will make the regulation enforceable. It will benefit the hunting public and wildlife officers alike who would have an inexpensive, readily available means to measure draw weights of bows and crossbows to stay in compliance with the regulation. It would continue to ensure bowhunters and crossbow hunters are using equipment to maximize the chance of a humane kill.

Section 354(h), Title 14, CCR prohibits possession of a firearm while hunting with an archery only tag. With recent examples of a wildlife attack on an archery hunter and one narrowly avoided presumed attack, in addition to the ongoing threat posed by members of drug trafficking organizations, it is reasonable to amend the prohibition so that archery hunters may possess a concealable firearm while hunting big game other than deer (consistent with Fish and Game Code section 4370) so long as they do not use that firearm to take their game.

(c) Authority and Reference

Authority: Sections 200, 203, 240, and 265, Fish and Game Code.
Reference: Sections 200, 203, 203.1, 265, 2005, and 4370, Fish and Game Code, Chapter 4.5 (commencing with Section 830) of Title 3 of Part 2, and Section 25455, Penal Code.

(d) Specific Technology or Equipment Required by Regulatory Change:

The proposed amendment to subsection 354(f) does not impose any requirement to purchase any specific equipment. For law enforcement purposes, the regulation change would require the use of an inexpensive weight measuring device called a bowscale. The cost of this handheld device ranges between $10 and $20 based upon a survey of costs of spring or electronic scale devices commonly used for measuring suitcase weight and others marketed especially for bowhunters. Archery hunters usually set their bows at well above the minimum of what would be required by the proposed regulation. Usually, when a bowhunter purchases a bow for the first time, he or she has it strung with a bowstring, purchases arrows that are cut and matched with the bow and has the draw weight set. Archery hunters can have the draw weight checked for free at most stores that carry archery equipment or they can share a device.

(e) Identification of Reports or Documents Supporting Regulation Change:

The California Bowmen Hunters provided a report of all current archery hunting regulations from nine western states for comparison and as a basis for California to adopt similar regulations.

A formal regulation change petition was submitted to the Fish and Game Commission which was accepted and assigned the Tracking number 2017-001. The

petition was submitted by Sean Brady as a representative of the National Rifle Association and the California Rifle and Pistol Association.

(f) Public Discussions of Proposed Regulations Prior to Notice Publication:

Public discussion at the September 20, 2018, Wildlife Resources Committee of the Fish and Game Commission for the archery draw weight proposal generated no opposition to change the way bow draw weight is measured. Possession of a concealable firearm while archery hunting was not vetted at a public meeting.

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change: None considered.

(b) No Change Alternative:

If the amendments are not adopted the regulations will remain the same.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed amendment would not directly or indirectly impose any regulation on businesses.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates no impacts on the creation or elimination of jobs within the state and no impact on the creation of new businesses or the elimination of existing businesses because the proposed amendment would not directly or

indirectly impose any regulation on businesses. The Commission anticipates benefits to the health and welfare of California residents because the proposed amendment would enable the carrying of a firearm, while hunting big game other than deer (consistent with Fish and Game Code section 4370), in the event a person is threatened by a dangerous animal or person while archery hunting. The Commission does not anticipate impacts on worker safety. The Commission anticipates benefits to the State's environment by reducing non-lethal injuries to wildlife.

(c) Cost Impacts on a Representative Private Person or Business:

The vast majority of hunters use bows that are set to a much higher draw weight than the proposed minimum set by the proposed regulation, so it would not affect them. A small percentage of hunters would choose to purchase a scale to measure their bow's draw weight to be sure they are in compliance with the law at a cost of about $10 - $20 each.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:

The proposed regulation would save many hours of investigative costs associated with a wildlife officer's attempt to prove a seized bow had insufficient strength to cast an arrow at least 130 yards. Time would be spent seizing the bow as evidence and documenting its seizure, finding a safe place to test the bow's ability to cast an arrow 130 yards, finding the arrow and measuring its flight distance once it is tested, then possibly returning the bow to the hunter at the direction of the court. Minimal hard costs to the Department would be associated with the proposed regulation change. California's wildlife officers who regularly work archery seasons may have to purchase bow measuring devices. It is estimated that approximately a quarter of the state's wildlife officers, or about 100 would have to purchase them at a total one-time cost to the state of $1,000 - $2,000.

(e) Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State:

The Commission anticipates no negative impacts on the creation or elimination of jobs within the state because the proposed action would not directly affect businesses or the demand for labor.

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State:

The Commission does not anticipate any effects of the proposed regulation on the creation of new businesses or the elimination of existing businesses within the state because it would not affect the demand for business products or services.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State:

The Commission does not anticipate any effects of the proposed regulation on the expansion of businesses currently doing business within the state because the proposed action would not affect the demand for business products or services.

(d) Benefits of the Regulation to the Health and Welfare of California Residents:

The Commission anticipates benefits of the regulation to the health and welfare of California residents because the proposed amendment would enable the carrying of a firearm for personal protection while archery hunting while hunting big game other than deer (consistent with Fish and Game Code section 4370).

(e) Benefits of the Regulation to Worker Safety:

The Commission does not anticipate benefits to worker safety because the proposed amendment would not impact working conditions.

(f) Benefits of the Regulation to the State's Environment:

The Commission anticipates benefits to the State’s environment by reducing non-lethal injuries to wildlife.

(g) Other Benefits of the Regulation: None.

Informative Digest/Policy Statement Overview

The California Department of Fish and Wildlife (Department) proposes two amendments to Section 354, Title 14, California Code of Regulations, which are related to law enforcement.

First, the provision in subsection 354(f) requires that a bow "cast a legal hunting arrow ... 130 yards", however this is unenforceable since it is impossible to demonstrate inside a courtroom. There is a need for clarification of the regulation to require that archery equipment be strong enough to project an arrow at a rate that it will be lethal to the game mammal and also be enforceable. For clarity, the Department proposes requiring a draw weight of at least **30** ~~40~~ pounds for a bow and 125 pounds for a crossbow to make it practical to demonstrate in the field and in a courtroom. Draw weight as used in archery sports is the measure of force required to draw the bow to a ready to fire position.

Second, the provision in subsection 354(h) states that "archers may not possess a firearm while hunting in the field during any archery season, or while hunting during a general season under the provisions of an archery only tag." The subsection also provides an exception, by reference to Fish and Game Code 4370, which permits peace officers to carry a concealed firearm. The Department proposes an amendment allowing possession of a concealable firearm while hunting big game other than deer (consistent with Fish and Game Code section 4370) under the authority of an archery only tag, provided the hunter does not use that firearm in any way to take the game animal.

Non-monetary Benefits to the Public

The Commission anticipates benefits to the health and welfare of California residents through the sustainable management of mammal populations. The Commission does not anticipate non-monetary benefits to worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency and Compatibility with Existing Regulations

The Commission has reviewed its regulations in Title 14, CCR, and conducted a search of other regulations on this topic and has concluded that the proposed amendments to Section 354 are neither inconsistent nor incompatible with existing State regulations. No other State agency has the authority to promulgate hunting regulations.

Proposed Regulatory Language

Section 354, Title 14, California Code of Regulations, is amended to read as follows:

§ 354. Archery Equipment and Crossbow Regulations.

. . . [No changes to subsections (a) through (e)]

(f) ~~No bow or crossbow may be used which will not cast a legal hunting arrow, except flu-flu arrows, a horizontal distance of 130 yards.~~ It shall be unlawful to use any bow or crossbow without a draw weight of at least ~~40~~**30** pounds for a bow or 125 pounds for a cross bow.

(g) Except as described in subsection 354(j), crossbows may not be used to take game birds and game mammals during archery seasons.

(h) ~~Except as provided in subsection 353(g) of these regulations and in Section 4370 of the Fish and Game Code, archers may not possess a firearm while hunting in the field during any archery season, or while hunting during a general season under the provisions of an archery only tag.~~ Archers may not use or possess a firearm while in the field engaged in archery hunting during an archery season or while hunting during a general season under the provisions of an archery only tag except as provided in subsections (h)(1) or (h)(2).

(1) An archer may carry a firearm capable of being concealed on his or her person while engaged in the taking of big game other than deer with a bow and arrow in accordance with subdivision (h), but shall not take or attempt to take big game with the firearm.

(2) Nothing in this section shall prohibit the lawful possession of a firearm capable of being concealed on his or her person by an active peace officer listed in Chapter 4.5 (commencing with Section 830) of Title 3 of Part 2 of the Penal Code or a retired peace officer in lawful possession of an identification certificate issued pursuant to Penal Code Section 25455 authorizing the retired officer to carry a concealed firearm.

. . . [No changes to subsections (i) through (k)]

Note: Authority cited: Sections 200, ~~202,~~ 203, ~~and~~ 240, and 265, Fish and Game Code. Reference: Sections 200, ~~202,~~ 203, 203.1, 265, ~~and~~ 2005, and 4370, Fish and Game Code, Chapter 4.5 (commencing with Section 830) of Title 3 of Part 2, and Section 25455, Penal Code.

STATE OF CALIFORNIA
Gavin Newsom, Governor

Fish and Game Commission

Wildlife Heritage and Conservation
Since 1870

Melissa Miller-Henson
Acting Executive Director
P.O. Box 944209
Sacramento, CA 94244-2090
(916) 653-4899
fgc@fgc.ca.gov
www.fgc.ca.gov

February 26, 2019

TO ALL INTERESTED AND AFFECTED PARTIES

This is to provide you with a continuation of the notice of proposed regulatory actions relative to "Archery Equipment and Crossbow Regulations" in Section 354, identified in Title 14, California Code of Regulations, which appeared in the California Regulatory Notice Register on January 11, 2019.

Proposed changes to text as set forth in Notice Register 2019, No. 2-Z, remain the same, except non-substantial and substantial modifications sufficiently related to the text of the regulations as originally proposed are now shown in ~~strikeout~~ and **bold** in an amended Initial Statement of Reasons. All documents including the Amended Initial Statement of Reasons are made available on the Commission's website at http://www.fgc.ca.gov/regulations/2019/index.aspx#354.

The proposed amended text for Section 354 reflects stakeholder requests made via oral testimony made at the Commission's February 6, 2019 meeting requesting proposed 40 pound bows be changed to 30 pound bows.

Please note that additional information from the notice including dates of the public hearing related to this matter remain the same as in the original notice. Comments on the revised proposed regulations mailed, or emailed to the Commission office, must be received before 12:00 noon on April 12, 2019. All comments must be received no later than April 17, 2019, at the hearing in Santa Monica, California.

Sincerely,

Jon D. Snellstrom
Associate Government Program Analyst

Attachment

§ 354. Archery Equipment and Crossbow Regulations.

. . . [No changes to subsections (a) through (e)]

(f) ~~No bow or crossbow may be used which will not cast a legal hunting arrow, except flu-flu arrows, a horizontal distance of 130 yards.~~ It shall be unlawful to use any bow or crossbow without a draw weight of at least ~~40~~ **30** pounds for a bow or 125 pounds for a cross bow.

(g) Except as described in subsection 354(j), crossbows may not be used to take game birds and game mammals during archery seasons.

(h) ~~Except as provided in subsection 353(g) of these regulations and in Section 4370 of the Fish and Game Code, archers may not possess a firearm while hunting in the field during any archery season, or while hunting during a general season under the provisions of an archery only tag.~~ Archers may not use or possess a firearm while in the field engaged in archery hunting during an archery season or while hunting during a general season under the provisions of an archery only tag except as provided in subsections (h)(1) or (h)(2).

(1) An archer may carry a firearm capable of being concealed on his or her person while engaged in the taking of big game other than deer with a bow and arrow in accordance with subdivision (h), but shall not take or attempt to take big game with the firearm.

(2) Nothing in this section shall prohibit the lawful possession of a firearm capable of being concealed on his or her person by an active peace officer listed in Chapter 4.5 (commencing with Section 830) of Title 3 of Part 2 of the Penal Code or a retired peace officer in lawful possession of an identification certificate issued pursuant to Penal Code Section 25455 authorizing the retired officer to carry a concealed firearm.

. . . [No changes to subsections (i) through (k)]

Note: Authority cited: Sections 200, ~~202,~~ 203, ~~and~~ 240, and 265, Fish and Game Code. Reference: Sections 200, ~~202,~~ 203, 203.1, 265, ~~and~~ 2005, and 4370, Fish and Game Code, Chapter 4.5 (commencing with Section 830) of Title 3 of Part 2, and Section 25455, Penal Code.

Print Form

Notice of Exemption

Appendix E

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

County Clerk
County of: N/A

From: (Public Agency): Fish and Game Commission

(Address)

Project Title: Amend Section 354, Archery, Title 14 CCR.

Project Applicant: Fish and Game Commission

Project Location - Specific:

Statewide

Project Location - City: N/A Project Location - County: N/A

Description of Nature, Purpose and Beneficiaries of Project:
First, requiring a bow draw weight of at least 30 pounds and a crossbow draw weight of at least 125 pounds, to increase enforceability of the regulation. Second, allowing possession of a concealable firearm while archery hunting (so long as not used for take).

Name of Public Agency Approving Project: Fish and Game Commission

Name of Person or Agency Carrying Out Project: California Department of Fish and Wildlife

Exempt Status: **(check one):**

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: § 15061(b)(3), Title 14, CCR
- ☐ Statutory Exemptions. State code number:

Reasons why project is exempt:
The proposed amendments do not have the possibility of impact on the environment because the changes are not anticipated to increase hunting, do not increase take levels, and aim to facilitate the safety of hunters.

Lead Agency
Contact Person: Melissa Miller-Henson Area Code/Telephone/Extension: 916-653-4898

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? ☐ Yes ☐ No

Signature: _____ Date: _____ Title: _____

☒ Signed by Lead Agency ☐ Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR: _____

January 8, 2019

ATTACHMENT TO NOTICE OF EXEMPTION
Amendments to Section 354, Title 14, California Code of Regulations

The California Fish and Game Commission (Commission) will take final action under the Fish and Game Code and the Administrative Procedure Act (APA) with respect to the project mentioned on December 13, 2018 and February 6, 2019. In taking its final action for the purposes of the California Environmental Quality Act (CEQA, Pub. Resources Code, § 21000 *et seq.),* and on April 17, 2019 the Commission plans to adopt the regulations relying on the CEQA exemption for projects where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment. (Cal. Code Reqs., tit. 14, § 15061, subd. (b)(3).)

Regulations

To remove obsolete provisions and allow the carrying of lawful firearms to archery hunting, the Fish and Game Commission's (Commission) Wildlife Resources Committee (WRC) in 2018 recommended amending the language in Section 354 of Title 14 of the California Code of Regulations:

First, the current provision in subsection 354(f) requires that a bow "cast a legal hunting arrow ... *130 yards"*, however this is impractical for both the public and law enforcement. For clarity, the Department proposes requiring a bow draw weight of at least 30 pounds, and crossbow draw weight of at least 125 pounds, to make it practical to demonstrate in the field and in a courtroom. Draw weight as used in archery sports is the measure of force required to draw the bow to a ready-to-fire position. A common method of measurement is the use of a handheld scale.

Second, the current provision in subsection 354(h) permits peace officers to carry a concealed firearm while archery hunting. The Department proposes an amendment allowing legal possession of a concealable firearm while hunting, but not for deer, under the authority of an archery only tag, provided the hunter does not use that firearm in any way to take the game animal.

Common Sense Exemption for Projects With No Possibility of Significant Effect on the Environment

The purpose of this memo is to describe staff's analysis of use of the common sense exemption (Cal. Code Regs., tit. 14, § 15061, subd. (b)(3)) under the California Environmental Quality Act (CEQA) as it relates to this regulatory action.

In regards to the first amendment, changing the method of measuring bow strength, the provision does not have any potential to impact the environment. The change from a casting distance of 130 yards to a bow draw weight of 30 pounds (125 for crossbow) does not affect the environment, or public. The change is consistent with the ethical use of weapons to assure a lethal kill of the targeted animal.

The second amendment, permitting the legal carry of a concealed firearm during an archery season or with an archery tag (except for deer) does not have the potential to impact the environment. The change acknowledges the need for self-defense in carrying a concealed firearm; and, the firearm may not be used for the take of any animal while the hunter is under the archery only tag or archery only season. Such firearms are permitted without exception during the general season for all mammals.

Conclusion

In staff's view, there is no possibility that these regulations could have a significant effect on the environment. Therefore, the Commission's adoption of these regulations is an activity that is the proper subject of the common sense exemption under CEQA. (Cal. Code Regs., tit 14, § 16061, subd. (b)(3)).

State of California
Department of Fish and Wildlife

Original on file.
Received March 20, 2019, 3:00PM

Date: March 20, 2019

To: Melissa Miller-Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Initial Statement of Reasons to amend Section 180.6, Re: Hagfish Traps**

The Department of Fish and Wildlife (Department) requests the Fish and Game Commission (Commission) authorize publishing notice of its intent to amend Section 180.6 of Title 14, California Code of Regulations (CCR), concerning the use of traps to take hagfish. Authorization of the request to publish notice will allow for discussion and possible adoption at the June 12-13, 2019 Commission meeting.

The proposed amendment to Section 180.6, Title 14, CCR will limit the number of barrel traps used to take hagfish to 25 per vessel, and will additionally require that the buoy used to mark any hagfish trap be marked with the vessel's California commercial boat registration number.

This proposal is intended to maintain the sustainability of California's hagfish fishery, reduce interaction with other bottom fishing gear, and reduce the potential for entanglement of marine mammals in vertical trap lines. The use of the vessel's California commercial boat registration number to mark the buoy used to mark any hagfish trap will help Law Enforcement Division staff determine, at sea, how many traps a vessel is utilizing and/or possessing, and meet concerns to enforce 25 traps per vessel.

The Department asks that the Commission request that the Office of Administrative Law make the regulation effective on or before October 1, 2019.

If you have any questions regarding this item, please contact Dr. Craig Shuman, Marine Regional Manager at (916) 445-6459. The public notice for this rulemaking should identify Environmental Scientist Travis Tanaka as the Department's point of contact. Mr. Tanaka can be reached at (831) 649-2881 or Travis.Tanaka@wildlife.ca.gov.

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Deputy Director
Wildlife and Fisheries Division
Stafford.Lehr@wildlife.ca.gov

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION

Amend Section 180.6
Title 14, California Code of Regulations
Re: Hagfish Traps

I. Date of Initial Statement of Reasons: March 20, 2019

II. Dates and Locations of Scheduled Hearings

(a) Notice Hearing: Date: April 17, 2019
Location: Santa Monica, CA

(b) Discussion/Adoption Hearing: Date: June 13, 2019
Location: Redding, CA

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

In California, the Pacific Hagfish (*Eptatretus stoutii*) (hagfish) fishery is an open access commercial fishery administered by the Department of Fish and Wildlife (Department). Fishing is allowed year-round in all depths of State and federal waters, except in Marine Protected Areas. The hagfish fishery is primarily managed via restrictions on the amount and type of gear allowed. Section 9000.5 and subdivision 9001.6(b) of Fish and Game Code (FGC) define and authorize no more than a total of 500 Korean-style traps, or a total of 200, five-gallon bucket traps aboard a vessel, or in the water or combination thereof. The Fish and Game Commission (Commission) approved the use of 25 barrel traps (40-gallon capacity) as an alternative trap type under subsection (b) of Section 180.6, effective January 1, 2016 (rulemaking file number 2015-1116-01s). The 25-barrel trap limit was intended to be per vessel, and serve as a volumetric equivalent to the 200 five-gallon bucket trap limit prescribed by subdivision (b) of FGC Section 9001.6 (Tanaka 2015). Hagfish fishermen utilize barrel traps or bucket traps to take hagfish. It is unknown specifically how many fishermen use barrel traps because barrel and bucket traps were historically reported as gear code 21 for landing purposes. To inform fishery managers about trap type use in the hagfish fishery, gear codes specific to barrel and bucket traps were recently instituted on October 16, 2018.

Other than a general trap permit, pursuant to FGC sections 9000.5 and 9001, no special permits are required to commercially fish for hagfish. There are no daily, seasonal, or annual catch limits for hagfish. Further, the fishery has no reporting requirement, other than a landing receipt, and there is no minimum size limit, landing quota, or seasonal closure. There is no recreational fishery for hagfish. This open access fishery provides additional income to vessel owners and crewmembers who participate in other permitted fisheries. For those that do not have other permits or fishery opportunities, fishing hagfish serves as their sole source of income. This low profit, volume-based live fishery serves primarily as export only to South Korea, though hagfish dealers seek other markets, domestic and foreign, to sell live hagfish. Fishermen are often motivated to catch and deliver as much hagfish as possible per fishing trip to maximize profit.

The hagfish resource is considered data poor; the status or size of its biomass, and other aspects of its life history remain unknown. While individual hagfish are known to have a low fecundity rate with less than 30 eggs per spawn cycle (Barss 1993), it is unknown how many spawn cycles occur per year. Hagfish inhabit deep water, soft bottom (i.e., mud) habitat in ocean depths ranging from 30 to 2,400 feet (9 to 732 meters) (Miller and Lea 1972). In California, hagfish are usually captured in depths less than 1,800 feet (549 meters), and based on landings data, population numbers appear greater north of Point Conception. Approximately 79 percent of soft bottom habitat within fishable depths is available. However, the distribution of such available habitat is patchy along the California coastline, and fishermen often concentrate on those fishing locations known for adequate hagfish numbers to sustain their fishing effort. While there is limited knowledge about localized or broad movement of hagfish, they appear to alter their localized movement in response to food availability (decaying organisms, invertebrates, as well as baited traps). Thus, fishing has the potential to shift hagfish distribution by causing artificial movement toward an area due to baited traps (Martini 1998). Voluntary logbook data suggests that fishermen rotate trap set locations, eventually fishing the same areas after a period of rest. This information indicates that even while there may be localized depletion, hagfish will return to an unfished area after a certain amount of time (Tanaka 2015).

Existing Regulations

The existing regulation, subsection (b) of Section 180.6, provides that each permittee can utilize up to 25 barrel traps (in the water, aboard a vessel, or in combination thereof) to take hagfish, spread on up to three ground lines or strings. FGC Section 9005 requires every trap or string of traps to be marked with a buoy, and FGC subdivision 9006(b) requires the buoy identifying traps used to take hagfish to be marked with the operator's (i.e., responsible fisherman's) commercial fishing license identification number only ("L

number") with no prescribed lettering. Subdivision (b) of FGC Section 9001 requires all participants on a fishing vessel (i.e., vessel operator, crewmembers or deckhands) who operate, or assist in operating, any trap to take hagfish, or who possess or transport hagfish on any boat, barge, or vessel when any trap is aboard, to have a current general trap permit, and thus serve as "permittees." Thus, a permittee may be any crewmember, or the vessel operator (who may also be the responsible fisherman under whose L number the vessel is operating). General trap permits are purchased over the counter and there is no cap on the number of general trap permits issued per year. The current regulations allow each vessel utilizing hagfish barrel gear to utilize and possess up to 25 barrel traps per permittee.

When Section 180.6 was last amended (rulemaking file number 2016-0920-02s, effective January 1, 2017) to shift barrel traps from a 40-gallon volume to a dimension-based measurement of barrel size, subsection 180.6(b) was amended in an attempt to simplify language regarding trap use by a vessel by stating that "…no permittee may possess more than 25 barrel traps aboard a vessel or in the water or combination thereof." Due to the fact that a permittee can be the vessel operator, and/or any crewmember, the current language allows the use of 25 barrel traps per permittee, which goes against the original intent of the regulation effective January 1, 2016 to allow a maximum of 25 barrel traps per vessel (the volumetric equivalent to the 200 five-gallon bucket trap limit prescribed by subdivision (b) of FGC Section 9001.6).

There is no fishery management plan for hagfish. The Department collects dockside samples of hagfish on an *ad hoc* basis. Dockside sampling includes evaluating the catch for average weight. If time allows, randomly selected fish are taken and processed back at a Department office to obtain data on individual fish sex, length, weight, and spawning condition. At present, annual landing totals appear to be stable. In 2018, 49 fishermen made at least one landing of hagfish using either barrel or bucket traps. For vessels that used up to 25 barrel traps or 200 bucket traps, the average landing was 1,367 pounds of hagfish. One vessel was identified as using more than 25 barrel traps; this vessel averaged 14 times this amount (21,573 pounds) of hagfish per landing (it is unknown if these landings resulted from one or more days fished).

Proposed Regulation Amendment and Addition

The proposed amendment to subsection (b) of Section 180.6 re-establishes the number of allowed barrel traps (25) per vessel, regardless of the number of permittees. The words "permittee may possess" will be deleted, thus linking the 25-barrel trap limit to the vessel.

New subsection 180.6(c) is proposed to be added to require buoys used to mark any hagfish traps (barrel traps, bucket traps and Korean style traps) to be marked with the vessel's California commercial boat registration number in

addition to the fisherman's L number mandated by subdivision (b) of FGC Section 9006.

Necessity of Proposed Regulation

Due to data deficiencies in hagfish population size, status, and other aspects of its life history, it is unknown whether the fishery can sustainably withstand an increase in fishing pressure attributed to vessels using more than 25 barrel traps. The proposed amendment to subsection (b) of Section 180.6 is necessary in order to clarify the original intent of the regulation effective January 1, 2016 restricting a vessel to utilize and possess no more than 25 barrel traps per vessel. This clarification will help ensure the sustainability of the hagfish fishery, and reduce excessive take. Limiting the number of traps deployed in proximate locations to one another also reduces the potential for user conflict among fishermen accessing the same area. In addition, restricting a vessel to 25 barrel traps reduces the potential for stray trap gear on the seafloor, and limits the number of vertical buoy lines to reduce potential impact to other marine life (Tanaka 2015).

The proposed addition of subsection (c) of Section 180.6 is necessary for the Department's Law Enforcement Division (LED) wildlife officers to effectively enforce the number of traps per vessel. When only the L number marks the buoy used to mark hagfish traps, officers are unable to determine which trap string belongs to which vessel, unless the officers can observe a vessel servicing (i.e., deploying or recovering) the traps.

(b) Goals and Benefits of the Regulation:

It is the policy of the State to encourage the conservation, maintenance, and utilization of the living resources of the ocean and other waters under the jurisdiction and influence of the State for the benefit of all the citizens of the State and to promote the development of local fisheries and distant-water fisheries based in California in harmony with international law respecting fishing and the conservation of the living resources of the oceans and other waters under the jurisdiction and influence of the State. The objectives of this policy include, but are not limited to, the maintenance of sufficient populations of all species of aquatic organisms to insure their continued existence, and the growth of local commercial fisheries taking into consideration the necessity of regulating the catch within the limits of maximum sustainable yields.

The proposed regulation will help ensure sustainability of the hagfish resource, reduce potential conflicts among fishermen using similar fishing grounds, and limit the number of vertical buoy lines to reduce potential impact to other marine life.

The proposed regulation will also require the use of the vessel's California commercial boat registration number to mark the buoy used to mark any hagfish trap to assist LED staff in determining, at sea, how many traps a vessel is utilizing and/or possessing and meet concerns to enforce 25 traps per vessel.

(c) Authority and Reference Sections from Fish and Game Code for Regulation:

Note: Authority cited: Sections 8403, and 9022, Fish and Game Code. Reference: Sections 8403, 9001.6, 9001.7, 9006, and 9022, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change:

None.

(e) Identification of Reports or Documents Supporting Regulation Change:

Tanaka, T. 2015. Final Report: Evaluation of the Use of 40-gallon barrel Traps for the Take of Hagfish. California Department of Fish and Wildlife, Marine Region (North-Central Finfish Research and Management Project).

(f) Identification of Reports or Documents Providing Background Information:

Barss, WH. 1993. Pacific Hagfish, *Eptatretus stoutii*, and Black Hagfish, *E. deani*: the Oregon fishery and port sampling observation, 1988-92. Marine Fisheries Review 55(4):19-30.

Martini, FH. 1998. The ecology of hagfishes. Pages 57-77 *in* J.M. Jorgensen, J.P. Lomholt, R.E. Weber and H. Malte, editors. The biology of hagfishes. Springer-Science, London, United Kingdom.

Miller, DJ, & Lea, RN. 1972. Guide to coastal marine fishes of California. California Department of Fish and Game. Fisheries Bulletin 157.

(g) Public Discussions of Proposed Regulations Prior to Notice Publication:

No public meetings are being held prior to the notice publication. The 45-day comment period provides adequate time for review of the proposed amendments.

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change:

No alternatives were identified by or brought to the attention of Commission

staff that would have the same desired regulatory effect.

(b) No Change Alternative:

If the current regulations are retained, vessels may run multiple sets of 25 barrel traps, one each per permittee (crewmember), thus increasing overall take of hagfish beyond levels that are known to be sustainable. Annual landings are relatively stable and appear sustainable at the current level. However, if more vessels increase the number of traps used, overall take of hagfish would increase. The potential effect of the No Change Alternative on the entire hagfish population is unknown, but it is possible that significant, localized depletion would occur.

Under the No Change Alternative, fishermen will continue to mark the buoys used to mark hagfish traps with their L number as required by subdivision (b) of FGC Section 9006; however, without including the California commercial boat registration number, it would be difficult for LED to determine which traps are deployed by a given vessel.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The California hagfish fishery is primarily a live export fishery. Currently, there is increased demand for California-caught hagfish due to the consistency of catch and lower dock price compared to hagfish fisheries in other states.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission does not anticipate any impacts on the creation or elimination of jobs, the creation of new business, the elimination of existing businesses or the expansion of businesses in California. There are no anticipated benefits to the health and welfare of California residents and worker safety. However, clarifying the original intent of the regulation effective January 1, 2016 by limiting the number of barrel traps to 25 per vessel would benefit the environment by promoting sustainability of the hagfish resource, limit the amount of barrel gear on the seafloor, and limit the number of vertical buoy lines in the fishery that could potentially impact other marine life.

(c) Cost Impacts on a Representative Private Person or Business:

A vessel that may have deployed more than 25 barrel traps in the past could face a reduction in fishing income due to a reduction in the number of traps deployed per vessel. However, the regulation effective January 1, 2016 intended that only 25 barrels be used per vessel, and the majority of fishermen conform to this practice.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:

None.

(e) Nondiscretionary Costs/Savings to Local Agencies:

None.

(f) Programs Mandated on Local Agencies or School Districts:

None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code:

None.

(h) Effect on Housing Costs:

None.

VII. Economic Impact Assessment:

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State:

None. The proposed regulatory action to clarify the original intent of the regulation effective January 1, 2016 restricting a vessel to utilize and possess no more than 25 barrel traps per vessel is not anticipated to affect the creation or elimination of jobs, which are primarily influenced by the foreign market demand for hagfish.

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State:

None. The proposed regulatory action to clarify the original intent of the regulation effective January 1, 2016 is not anticipated to affect the creation of new businesses or elimination of existing businesses, which are primarily influenced by the foreign market demand for hagfish.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State:

None. The proposed regulatory action to clarify the original intent of the regulation effective January 1, 2016 is not anticipated to affect the expansion of businesses currently doing business within the state. Entry to or exit from the open access hagfish fishery is predominately driven by the hagfish export market demand and opportunity in other more profitable fisheries (such as ocean salmon or Dungeness crab). Approximately 50 percent of hagfish fishery participants (vessel owners or operators) hold permits in other fisheries and may pursue hagfish to fill gaps in between seasons. There are some vessel operators and crewmen who rely on the hagfish fishery as their only source of income. Since crew identity is not documented as part of Department landing requirements, it is unknown exactly how many crewmembers solely rely on hagfish.

(d) Benefits of the Regulation to the Health and Welfare of California Residents:

None. The proposed regulatory action is not anticipated to benefit the health and welfare of California residents.

(e) Benefits of the Regulation to Worker Safety:

None. The proposed regulatory action is not anticipated to benefit worker safety.

(f) Benefits of the Regulation to the State's Environment:

The proposed regulation is anticipated to benefit the environment by clarifying the original intent of the regulation effective January 1, 2016 of limiting the number of barrel traps to 25 per vessel, which is expected to promote the sustainability of the hagfish fishery, limit the amount of barrel gear on the

seafloor, and limit the number of vertical buoy lines in the fishery that could potentially impact other marine life.

Informative Digest/Policy Statement Overview

In California, Pacific Hagfish (*Eptatretus stoutii*) (hagfish) is an open access commercial fishery administered by the Department of Fish and Wildlife (Department). Fishing is allowed year-round in all depths of State and federal waters, except in Marine Protected Areas. The hagfish fishery is primarily managed via restrictions on the amount and type of gear allowed. The method for take is by one of three baited trap types: bucket trap, Korean trap, and more recently, barrel traps. Section 9000.5 and subdivision 9001.6(b) of Fish and Game Code (FGC) define and authorize no more than a total of 500 Korean-style traps, or a total of 200, five-gallon bucket traps aboard a vessel, or in the water or combination thereof. The Fish and Game Commission (Commission) approved the use of 25 barrel traps (40-gallon capacity) as an alternative trap type under subsection (b) of Section 180.6, Title 14, California Code of Regulations (CCR) effective January 1, 2016. The 25-barrel trap limit was intended to be per vessel, and serve as a volumetric equivalent to the 200 five-gallon bucket trap limit prescribed by subdivision (b) of FGC Section 9001.6.

There are no daily, seasonal, or annual catch limits for the hagfish fishery. Further, the fishery has no reporting requirement, other than a landing receipt, and there is no minimum size limit, landing quota, or seasonal closure. There is no recreational fishery for hagfish. Pursuant to FGC sections 9000.5 and 9001, all participants on a fishing vessel (i.e., vessel crewmembers) are required to have a current general trap permit, and thus serve as "permittees." FGC Section 9005 requires every trap or string of traps to be marked with a buoy, and FGC subdivision 9006(b) requires the buoy identifying traps used to take hagfish to be marked with the operator's (i.e., responsible fisherman's) commercial fishing license identification number only ("L number") with no prescribed lettering.

When Section 180.6, Title 14, CCR was last amended (effective January 1, 2017) to shift from a 40 gallon volume to a dimension-based measurement of barrel trap size, subsection 180.6(b) was amended in an attempt to simplify language regarding trap use by a vessel by stating that "…no permittee may possess more than 25 barrel traps aboard a vessel or in the water or combination thereof." Due to the fact that a permittee can be the vessel operator, and/or any crewmember, the current language allows the use of 25 barrel traps per permittee, which goes against the original intent of the regulation effective January 1, 2016 to allow a maximum of 25 barrel traps per vessel (the volumetric equivalent to the 200 five-gallon bucket trap limit prescribed by subdivision (b) of FGC Section 9001.6).

Proposed Regulation

The proposed amendment to subsection (b) of Section 180.6, Title 14, CCR re-establishes the number of allowed barrel traps (25) per vessel, regardless of the number of permittees aboard the vessel. In addition to the commercial fishing license identification number, hagfish fishermen will also be required to mark buoys used to mark any hagfish traps with the vessel's California commercial boat registration number.

The following is a summary of the changes proposed for Section 180.6, Title 14, CCR:

- Remove the words “permittee may possess” from subsection (b), thus linking the 25 barrel trap limit to the vessel.

- Add subsection (c) requiring the use of the vessel’s California commercial boat registration number to mark the buoy used to mark any hagfish trap (fishermen will continue to mark buoys with all fishermen L numbers operating the vessel, as required by FGC subdivision 9006(b)).

Benefits of the Proposed Regulation
Linking the maximum number of barrel traps utilized and possessed to the vessel instead of the permittee will limit the fishing capacity of vessels that utilize this gear. Since there are no other management measures that limit hagfish fishing capacity, limiting the number of barrel traps by vessel will help ensure sustainability of the hagfish resource, reduce potential conflicts between fishermen using similar fishing grounds, and limit the number of vertical buoy lines to reduce potential impact to other marine life.

By requiring the use of the vessel’s California commercial boat registration number to mark the buoy used to mark any hagfish trap, Law Enforcement Division (LED) staff will be able to determine, at sea, how many traps a vessel is utilizing and/or possessing. This requirement would apply to all trap types authorized for the take of hagfish.

Consistency and Compatibility with Existing Regulations
Section 20, Article IV, of the State Constitution specifies that the Legislature may delegate to the Fish and Game Commission such powers relating to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated to the Commission the power to regulate the commercial take of finfish using traps (FGC sections 8403 and 9022). No other State agency has the authority to promulgate commercial fishing regulations. The Commission has reviewed its own regulations and finds that the proposed regulations are neither inconsistent nor incompatible with existing State regulations. The Commission has searched the CCR for any regulations regarding the use of traps for the commercial take of hagfish and has found no such regulation; therefore the Commission has concluded that the proposed regulations are neither inconsistent nor incompatible with existing State regulations.

PROPOSED REGULATORY LANGUAGE

Section 180.6, Title 14, CCR, is amended to read:

§ 180.6. Hagfish Traps.

(a) All openings in traps used to take hagfish, excluding the entrance funnel, shall have a minimum diameter of 9/16 inch in any dimension.

(b) Hagfish may be taken in barrel traps, if attached to a ground line. No ~~permittee may possess~~ more than a total of 25 barrel traps per vessel may be possessed aboard ~~a~~ the vessel or in the water or combination thereof. Each barrel trap shall be no greater than 45 inches in total length and have an outside diameter no greater than 25 inches at its widest point. Barrels may be attached to a maximum of three ground lines. If using barrel traps, no other hagfish trap type may be used or possessed aboard the vessel. When barrel traps are used or possessed aboard a vessel, no species of finfish other than hagfish shall be taken, possessed, or sold. Popups shall not be used on buoy lines attached to barrel traps.

(c) Every hagfish trap, or string of traps, shall be marked with a buoy that identifies the operator's commercial fishing license identification number, as well as the vessel's California commercial boat registration number.

Authority cited: Sections 8403, and 9022, Fish and Game Code.
Reference: Sections 8403, 9001.6, 9001.7, 9006, and 9022, Fish and Game Code.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Marine Region
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EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Final Report: Evaluation of the Use of 40-gallon Barrel Traps for the Take of Hagfish

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California Department of Fish and Wildlife
Marine Region
North-Central Finfish Research and Management Project

May 12, 2015

Conserving California's Wildlife Since 1870

INTRODUCTION

In February 2013, the Fish and Game Commission (Commission) was petitioned by two Bodega Bay commercial fishermen requesting Experimental Gear Permits to use individually floated, 40-gallon barrels as a method of take for Pacific hagfish. Under statute, hagfish may be taken in either 5-gallon bucket traps or Korean-style hagfish traps. While legal in other states, the use of barrels to take hagfish in California is prohibited. The 40-gallon barrel is a standard readily available to the fishing industry and currently in use in other jurisdictions such as Oregon. They suggested that the use of this gear was a way to decrease potential for negative gear interactions with other commercial benthic fisheries (e.g. Dungeness crab) and to improve catch quality by reducing dead loss or damage to captured fish through crowding.

The Commission accepted the Department's recommendations and approved the Experimental Gear Permits with the conditions including that the use of the gear be observed by the Department. The Department, working with the permitted fishermen, sought to evaluate the proposed method as possible legal gear to take hagfish. At the time of the application, while there were no requirements of the fishery to have a minimum hole diameter on hagfish traps, a 1/2-in. diameter minimum was a requirement identified in the permit. The permittees were allowed to design their traps in any fashion, provided Department regulations regarding destruct devices were followed. As the study progressed, minimum hole diameter was increased to 9/16 in. to comply with a regulatory requirement which became effective January 1, 2015.

METHODS

The proposal to the Commission stated that barrel traps would minimize negative gear interactions with other fisheries, improve the quality of trapped hagfish and reduce dead loss due to crowding. To evaluate this gear, the Department required both permit holders to submit accurate logs documenting gear interactions, number of traps, soak duration, total catch per trip, and bycatch by species. Onboard observation trips (minimum of 3 days per permit) performed by Department staff were required to verify logbook information and to document any interaction with wildlife or other fisheries. Each permit holder was allowed to fish up to 40 traps (Fig. 1), with all traps having a minimum hole diameter of 1/2 in. The minimum hole diameter was increased to 9/16 in. in January 2015 and the permit holders modified their experimental barrel traps accordingly. The period of evaluation began September 2013 and ended April 2015.

Figure 1. 40-gallon barrel trap in the intended orientation as fished on the bottom

ONBOARD OBSERVATIONS

Staff observed fishing activities documenting any interactions with either marine mammals or other commercial fisheries, and species caught as bycatch. Staff evaluated average size of catch by taking a bucket sample per barrel or sampling the entire barrel. In the former case, a 5-gallon bucket was filled about halfway with fish from each barrel. The bucket was weighed and fish were counted to calculate the average count-per-pound (CPP). If the entire barrel was sampled, all fish were weighed in aggregate and counted. Randomly selected hagfish were retained for laboratory dissection to establish sex ratio, spawning status, and average length and weight per fish by sex.

FISHERMEN LOGBOOKS

Using trap logs supplied by the Department, both permitted fishermen were required to maintain accurate records of their fishing activity. Information requested included: fishing date, number of traps fished, soak duration, number of traps lost, hagfish dead loss quantity, gear interactions with other fisheries or marine mammals, incidental species, and total estimated catch.

LABORATORY DISSECTION

A random sample was retained from each on-board observation to obtain representative information regarding length, weight, sex, and spawning status for fish caught during the trip.

DEAD LOSS

In a separate but related fishery independent study to evaluate dead loss in bucket traps, in 2014 Department staff deployed 80 baited 5-gallon bucket traps (1/2 and 9/16-in. diameter holes, 40 each) in Monterey Bay for an overnight soak. Traps were baited with the same amounts used in the commercial fishery. Traps were retrieved the following day. Captured hagfish were counted, weighed, and assessed for condition. Live hagfish were released and dead hagfish were retained for laboratory dissection. The percentage of dead loss due to crowding in each bucket trap was determined.

RESULTS

ONBOARD OBSERVATIONS

1/2–in. diameter holes- Three fishing trips were observed documenting the use of 1/2-in holes in 40-gallon barrel traps in 2014. On two of the three trips, the catch per barrel was sampled by taking a random bucket sample. These samples were taken after a short soak. The entire content of selected barrels was accounted for during the trip in August because traps were pulled after a short soak and there were small catch quantities in each trap. The primary incidental catch was *Octopus spp*. One *Cancer spp* crab was also observed.

Associated data for observed trips:

Month	Year	Hole diameter(in.)	Barrels pulled	Sample unit	# samples	Mean (CPP)	Range (CPP)
February	2014	1/2	32	bucket	32	4.99	3.93-6.31
August	2014	1/2	32	barrel	14	4.41	2.35-5.89
September	2014	1/2	28	bucket	28	4.07	3.39-4.97

9/16-in. diameter holes- Three additional fishing trips were observed documenting the use of 9/16-in holes in 40-gallon barrel traps in 2015. On all three trips, traps were soaked overnight. During the trip in March, six of the 28 traps were pulled after a short soak (3.5 hr). The average weight of fish captured per barrel relative to the total number during this short soak was less than the average weight for the barrels soaked overnight, thus increasing the average mean CPP for the entire trip. The primary incidental catch was Octopus spp. No finfish or finfish remains were observed.

Associated data for observed trips:

Month	Year	Hole diameter(in.)	Barrels pulled	Sample unit	# samples	Mean (CPP)	Range (CPP)
March	2015	9/16	33	bucket	33	4.72	4.00-6.50
April	2015	9/16	33	bucket	33	4.61	3.56-6.25
April	2015	9/16	28	bucket	28	4.52	3.95-5.45

For all barrels, regardless of hole diameter, no negative gear interactions with other commercial fisheries or marine mammals were observed. No incidental finfish or finfish remains were observed.

FISHERMEN LOGBOOKS

1/2–in. diameter holes- A total of 118 fishing days for both permittees combined were reported for traps with 1/2-in holes. Average catch per barrel was 33.9 lb, with a range of 17.9 - 57.1 lb per barrel. The average number of traps used per fishing trip was 33. Traps were pulled between 1 and 4 times per fishing day with an average pull rate of 1.8. One trap was reported as lost due to a bottom snag. Reported incidental catch were small *Octopus spp*. No negative gear interactions were reported.

9/16-in. diameter holes- A total of 63 fishing days for both permittees combined were reported for traps with 9/16-in holes. Average catch per barrel was 34.5 lb, with a range of 17.9-77.8 lb per barrel. The average number of traps used per fishing trip was 31.5. Traps were pulled between 1 and 3 times per fishing day with an average pull rate of 1.8. Reported incidental catch were small Octopus spp. No negative gear interactions were reported.

Both fishermen noted a better average size of hagfish with the increased hole diameter.

LABORATORY DISSECTION

Randomly selected hagfish were retained from each observation trip. These fish were later dissected in fresh condition.

1/2-in diameter holes-

Sex	Number	Average weight (g)	Weight range (g)	Average length (mm)	Length range (mm)
Female	100	79.5	12.6-172.2	368.5	210-500
Male	102	97.5	37.1-255.9	396.4	295-527
Unknown	33	51.3	21.9-132-5	316.0	252-447

9/16-in diameter holes-

Sex	Number	Average weight (g)	Weight range (g)	Average length (mm)	Length range (mm)
Female	82	108.2	46.2-262.7	411.6	326-527
Male	108	122.1	53.9-207.4	429.3	310-556
Unknown	12	63.1	47.8-81.0	342.7	304-380

DEAD LOSS IN SEPARATE DEPARTMENT STUDY

Two strings of 40 5-gallon bucket traps (20 each of 1/2 and 9/16-in. diameter holes) were deployed.

Hole Diameter (inch)	Total Live	Total Dead	Total Weight (lbs)(Live and Dead)	CPP (Live and Dead)	# of Traps w/ Dead Loss	Average weigh per bucket (lbs)	Weight range (lbs)	Buckets with zero catch
1/2	1,484	61	449.0	3.44	5	14.0	1.0-41.0	7
9/16	1,297	7	402.5	3.24	7	11.2	0.5-23.5	4

Dead hagfish comprised 2% by count of the total catch. Of the 61 dead hagfish found in the 1/2-in traps, 56 came from one trap which was filled to capacity. Incidental catch included one sablefish (*Anoplopoma fimbria*) and *Octopus spp.* All incidental catch was released alive with no evidence of dead incidentals.

DISCUSSION

ONBOARD OBSERVATION

After observing fishing activities of both vessels over the course of six trips, staff concluded the following regarding the use of this gear. Individually floated barrel traps may be fished in high traffic areas with minimal chance of interacting negatively with gear from other fisheries. Both permitted fishermen were able to set their traps on the same grounds fished by the Dungeness crab fleet. Traps were set far enough apart such that salmon trollers could fish the bottom in the same proximity of these traps with minimal chance of snagging them.

The hagfish trap fishery (bucket or barrel) is a clean finfish trap fishery, with very little to no capture of incidental species. Two fishery-independent Department bucket trap

surveys, one performed as part of this evaluation, confirmed this. It is thought that any incidental species would be consumed by retained hagfish given enough time in the trap. The remains of octopus and one cancer crab were present. No skeletal remains of finfish were encountered.

A 5-gallon bucket trap at capacity, without bait or a bait jar can hold approximately 40 lb of hagfish. Using this metric, a 40-gallon barrel trap could theoretically hold up to 320 lb of hagfish. Log data indicate that after an overnight soak, barrel traps would average over 30 lb. The observation trip in August 2014 corroborated this data. Barrels pulled on a short soak were filled to similar capacities; however, average size of individual fish was noticeably smaller. Korean hagfish importers desire a minimum of eight-nine hagfish/kg (Tanaka and Crane 2014). Small hagfish (CPP of 10 hagfish/kg or greater) typically are undesirable by Korean importers and fishermen are encouraged to cull these from their catch prior to landing. This market-driven requirement could force fishermen to soak their traps longer, allowing more immature hagfish to escape, and providing an ecological benefit while improving the quality of their catch (Tanaka and Crane 2014).

FISHERMEN LOGBOOKS

Both fishermen documented total catch for each trip, gear interactions, incidental catch, and number of sets per trip. The information provided by both fishermen was corroborated through fishing trips observed by Department staff. If traps could not be serviced within 24 hours due to expected inclement weather, all traps were pulled and brought to shore.

Traps were typically pulled after an overnight soak or after 8-10 hr of deployment which allowed smaller hagfish to escape through the holes. At the beginning of the evaluation period, both fishermen conducted more short soaks to get the total landing weight required to meet expenses per trip. They confided that their culling efforts of small hagfish at the dock were greater due to this practice. With longer soaks, including overnight, the average size increased, thus reducing the need to cull immature hagfish at the dock. Once all the barrels were modified to accommodate the 9/16-in hole diameter requirement, dockside culling was eliminated.

Both fishermen reported no incidents of negative gear interaction with other fisheries or marine mammals. Only one trap was lost throughout the entire evaluation period. This trap was stuck on the bottom and the vertical line snapped. Since logs are not required for the hagfish trap fishery, the Department has limited logbook data, mostly submitted on a voluntary basis. This log data show that during the barrel trap evaluation period (September 2013-April 2015), the bucket trap fishery lost 141 buckets. The reasons cited for trap loss included cut ground line, lost trap string, or traps cut off by another

vessel. The Department has video stills of a lost bucket trap taken during a Department ROV survey (Fig 2).

Figure 2. Lost bucket trap documented by DFW's ROV project off the coast of San Diego. Note intact snap and attached trap lid. The attached lid could indicate failure or lack of the required destruct device.

LABORATORY DISSECTION

The random samples collected during observation trips show the direct relationship and effect that changing the minimum trap hole diameter has on average fish weight. When using the 9/16-in. diameter, average weight and length for males and females increased indicating that smaller hagfish were able to escape the trap. There was also a decrease in the number of hagfish with unknown sex. Typically, fish of unknown sex are smaller and sexually immature.

When compared with samples from the 2015 bucket trap fishery, dissected hagfish sampled from barrel traps show that barrel caught fish are slightly larger. This could be the result of the consistently long soak time employed by the permit holders.

Laboratory dissection data from Department samples (all fish combined) taken from the 2015 bucket trap fishery (Morro Bay and Eureka) and barrel trap observation trips (hole diameter for all traps is 9/16 inch):

Fishery	Length range (mm)	Length average (+/- s.d.) (mm)	Weight range (mm)	Average weight (+/- s.d.)(g)	Average CPP (+/- s.d.)
Bucket	310-500	396.8 +/- 43.3	43.4-109.2	95.7 +/- 64.5	4.66 +/-0.79
Barrel	304-556	417 +/- 49.5	46.2-262.7	113.0 +/-39.0	4.67 +/- 0.17

DEAD LOSS

In their petition to the Commission, both permittees stated that catch quality may be better in barrel traps due to reduction in crowding which sometimes occurs in bucket traps. Other hagfish fishermen also claimed to have lost catch due to crowding in buckets, especially after an extended soak time beyond 24 hr. After soaking bucket traps provided by the permittees and those constructed by the Department and examining the resulting catch, staff could not replicate the amount of dead loss experienced by both fishermen. Staff did note however that there was a higher percentage of dead loss in buckets that were filled to capacity. On the observed trips with barrel traps, no traps were filled to capacity and no dead loss observed. However, the greater trap volume and large number of holes allows for better water circulation, which may improve survivorship.

CONCLUSION

Department staff consider that allowing barrels as a legal method of take will allow the sustainable use of the Pacific hagfish resource, especially when limitations on their deployment are implemented.

An existing regulation (Title 14, §180.6) requires that all trap holes, which would include barrels, be at least 9/16-in. diameter. This requirement reduces the take of immature hagfish.

Another existing regulation (FGC §9003) requires the use of a destruct device in all traps. The larger barrel surface area, depending upon the design used by the fisherman, could allow a more effective destruct device. Bucket trap lids are typically secured with cotton and rubber strapping; however in the event the lid snaps to the bucket, it will never open. Due to the nature of the entrance funnel, the bucket trap fishery and barrel trap fishery have approximately the same type of incidental catch. During the Department's dead loss study, other researchers were able to record on camera finfish and Dungeness crabs attempting to interact with a baited bucket trap. Fish and crabs were seen approaching the funnel, but none were observed entering.

A barrel trap limit would ensure resource sustainability by lessening the theoretical impact of increasing trap size and therefore overall catch weight. The states of Washington and Oregon have trap limits of 100 and 200, respectively, for any legal type of trap (WAC 2015, OAR 2015). Fishermen in Oregon and Washington have the option as to the size of their traps; however the majority utilizes 40 to 55-gallon barrels fished on a ground line.

The Department recommends that California commercial hagfish vessels be allowed to fish 25 or fewer barrels (25 barrels equates to 200 buckets in volume) at the discretion of the operator, as an alternative to buckets or Korean traps. This study focused on the experimental use of a single line/single trap format, but multiple barrels may be fished on a ground line. Whether using one barrel with a single vertical line or several barrels on a ground line, this gear would fish the same and yield similar catch results. Barrels could be an efficient, alternative for fishermen that would reduce the number of traps and length of ground line on the seafloor.

Acknowledgments- I acknowledge the following for their help in completing this project: Department staff- K. Lesyna, N. Rodriquez, B. Bailie, J. Preffer, J. Ames; Commercial fishermen- N. Hofland, T. Maricich, and C. Thomsson.

REFERENCES

Oregon Fish and Wildlife. 2015. Hagfish fishery. Pages 26-27 *in* Oregon commercial fishing regulations-Synopsis.

Tanaka, T.H. and K. Crane. 2014. Influence of bucket trap hole diameter on retention of immature hagfish. Calif. Fish and Game 100(2):310-318.

Washington State Legislature. 2015. Hagfish fishery. Title 220:chapter 220-88E.

STATE OF CALIFORNIA — DEPARTMENT OF FINANCE

ECONOMIC AND FISCAL IMPACT STATEMENT (REGULATIONS AND ORDERS)

STD. 399 (REV. 12/2013)

ECONOMIC IMPACT STATEMENT

DEPARTMENT NAME	CONTACT PERSON	EMAIL ADDRESS	TELEPHONE NUMBER
Fish and Game Commission	Margaret.Duncan	@wildlife.ca.gov	916-653-4676

DESCRIPTIVE TITLE FROM NOTICE REGISTER OR FORM 400	NOTICE FILE NUMBER
Amend Sec. 180.6, Title 14, CCR, Hagfish Traps	Z

A. ESTIMATED PRIVATE SECTOR COST IMPACTS *Include calculations and assumptions in the rulemaking record.*

1. Check the appropriate box(es) below to indicate whether this regulation:

- [X] a. Impacts business and/or employees
- [X] b. Impacts small businesses
- [ ] c. Impacts jobs or occupations
- [ ] d. Impacts California competitiveness
- [ ] e. Imposes reporting requirements
- [ ] f. Imposes prescriptive instead of performance
- [ ] g. Impacts individuals
- [ ] h. None of the above (Explain below):

If any box in Items 1 a through g is checked, complete this Economic Impact Statement.
If box in Item 1.h. is checked, complete the Fiscal Impact Statement as appropriate.

2. The Fish and Game Commission (Agency/Department) estimates that the economic impact of this regulation (which includes the fiscal impact) is:

- [X] Below $10 million
- [ ] Between $10 and $25 million
- [ ] Between $25 and $50 million
- [ ] Over $50 million *[If the economic impact is over $50 million, agencies are required to submit a Standardized Regulatory Impact Assessment as specified in Government Code Section 11346.3(c)]*

3. Enter the total number of businesses impacted: 40-50

Describe the types of businesses (Include nonprofits): Commercial fishermen who trap Pacific Hagfish

Enter the number or percentage of total businesses impacted that are small businesses: 100%

4. Enter the number of businesses that will be created: 0 eliminated: 0

Explain: Clarification of the intent of the reg. w/no effect on fishery that is primarily influenced by foreign market demand.

5. Indicate the geographic extent of impacts:
- [ ] Statewide
- [X] Local or regional (List areas): Ocean waters from Crescent City to San Diego

6. Enter the number of jobs created: 0 and eliminated: 0

Describe the types of jobs or occupations impacted: Commercial fishermen and deckhands

7. Will the regulation affect the ability of California businesses to compete with other states by making it more costly to produce goods or services here? [ ] YES [X] NO

If YES, explain briefly:

STATE OF CALIFORNIA — DEPARTMENT OF FINANCE

ECONOMIC AND FISCAL IMPACT STATEMENT (REGULATIONS AND ORDERS)

STD. 399 (REV. 12/2013)

ECONOMIC IMPACT STATEMENT (CONTINUED)

B. ESTIMATED COSTS *Include calculations and assumptions in the rulemaking record.*

1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime? $ 0

   a. Initial costs for a small business: $ 0 Annual ongoing costs: $ 0 Years: 1

   b. Initial costs for a typical business: $ 0 Annual ongoing costs: $ 0 Years: 1

   c. Initial costs for an individual: $ 0 Annual ongoing costs: $ 0 Years: 1

   d. Describe other economic costs that may occur: This regulatory action clarifies the original intent of the regulation (effective Jan 1, 2016) that restricts a vessel to utilize and possess no more than 25 barrel traps, to ensure full compliance.

2. If multiple industries are impacted, enter the share of total costs for each industry: 100% commercial fishing

3. If the regulation imposes reporting requirements, enter the annual costs a typical business may incur to comply with these requirements. *Include the dollar costs to do programming, record keeping, reporting, and other paperwork, whether or not the paperwork must be submitted.* $ N/A

4. Will this regulation directly impact housing costs? ☐ YES ☒ NO

   If YES, enter the annual dollar cost per housing unit: $

   Number of units:

5. Are there comparable Federal regulations? ☐ YES ☒ NO

   Explain the need for State regulation given the existence or absence of Federal regulations: Hagfish is a state managed and regulated fishery.

   Enter any additional costs to businesses and/or individuals that may be due to State - Federal differences: $ N/A

C. ESTIMATED BENEFITS *Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment: The proposed regulation is anticipated to benefit the environment by clarifying the intent of the current regulation, which is expected to aid the sustainability of the hagfish fishery, limit the amount of barrel gear on the seafloor, and limit the number of vertical buoy lines in the fishery that could impair other marine life.

2. Are the benefits the result of: ☐ specific statutory requirements, or ☒ goals developed by the agency based on broad statutory authority?

   Explain: Fish and Game Code Section 1700

3. What are the total statewide benefits from this regulation over its lifetime? $ not quantifiable

4. Briefly describe any expansion of businesses currently doing business within the State of California that would result from this regulation: N/A

D. ALTERNATIVES TO THE REGULATION *Include calculations and assumptions in the rulemaking record. Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. List alternatives considered and describe them below. If no alternatives were considered, explain why not: No alternatives were identified by or brought to the attention of Commission staff that would have the same desired regulatory effect.

STATE OF CALIFORNIA — DEPARTMENT OF FINANCE

ECONOMIC AND FISCAL IMPACT STATEMENT (REGULATIONS AND ORDERS)

STD. 399 (REV. 12/2013)

ECONOMIC IMPACT STATEMENT (CONTINUED)

2. Summarize the total statewide costs and benefits from this regulation and each alternative considered:

Regulation:	Benefit: $	sustainability*	Cost: $	0
Alternative 1:	Benefit: $	N/A	Cost: $	N/A
Alternative 2:	Benefit: $	N/A	Cost: $	N/A

3. Briefly discuss any quantification issues that are relevant to a comparison of estimated costs and benefits for this regulation or alternatives: *Difficult to quantify: benefits of limiting vessel fishing capacity are increased sustainability, reduced conflicts among fishermen, and limiting hazards to other marine life from buoy lines.

4. Rulemaking law requires agencies to consider performance standards as an alternative, if a regulation mandates the use of specific technologies or equipment, or prescribes specific actions or procedures. Were performance standards considered to lower compliance costs? ☐ YES ☒ NO

Explain: Specific prescriptive regulations regarding number of traps per vessel control harvest rate most effectively.

E. MAJOR REGULATIONS *Include calculations and assumptions in the rulemaking record.*

California Environmental Protection Agency (Cal/EPA) boards, offices and departments are required to submit the following (per Health and Safety Code section 57005). Otherwise, skip to E4.

1. Will the estimated costs of this regulation to California business enterprises **exceed $10 million**? ☐ YES ☐ NO

If YES, complete E2. and E3
If NO, skip to E4

2. Briefly describe each alternative, or combination of alternatives, for which a cost-effectiveness analysis was performed:

Alternative 1: _____

Alternative 2: _____

(Attach additional pages for other alternatives)

3. For the regulation, and each alternative just described, enter the estimated total cost and overall cost-effectiveness ratio:

Regulation:	Total Cost $		Cost-effectiveness ratio: $	
Alternative 1:	Total Cost $		Cost-effectiveness ratio: $	
Alternative 2:	Total Cost $		Cost-effectiveness ratio: $	

4. Will the regulation subject to OAL review have an estimated economic impact to business enterprises and individuals located in or doing business in California exceeding $50 million in any 12-month period between the date the major regulation is estimated to be filed with the Secretary of State through12 months after the major regulation is estimated to be fully implemented?

☐ YES ☒ NO

If YES, agencies are required to submit a Standardized Regulatory Impact Assessment (SRIA) as specified in Government Code Section 11346.3(c) and to include the SRIA in the Initial Statement of Reasons.

5. Briefly describe the following:

The increase or decrease of investment in the State: _____

The incentive for innovation in products, materials or processes: _____

The benefits of the regulations, including, but not limited to, benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency: _____

STATE OF CALIFORNIA — DEPARTMENT OF FINANCE

ECONOMIC AND FISCAL IMPACT STATEMENT (REGULATIONS AND ORDERS)

STD. 399 (REV. 12/2013)

FISCAL IMPACT STATEMENT

A. FISCAL EFFECT ON LOCAL GOVERNMENT *Indicate appropriate boxes 1 through 6 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year which are reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

$ _____

☐ a. Funding provided in _____

Budget Act of _____ or Chapter _____ , Statutes of _____

☐ b. Funding will be requested in the Governor's Budget Act of _____

Fiscal Year: _____

☐ 2. Additional expenditures in the current State Fiscal Year which are NOT reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

$ _____

Check reason(s) this regulation is not reimbursable and provide the appropriate information:

☐ a. Implements the Federal mandate contained in _____

☐ b. Implements the court mandate set forth by the _____ Court.

Case of: _____ vs. _____

☐ c. Implements a mandate of the people of this State expressed in their approval of Proposition No. _____

Date of Election: _____

☐ d. Issued only in response to a specific request from affected local entity(s).

Local entity(s) affected: _____

_____

☐ e. Will be fully financed from the fees, revenue, etc. from: _____

Authorized by Section: _____ of the _____ Code;

☐ f. Provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each;

☐ g. Creates, eliminates, or changes the penalty for a new crime or infraction contained in _____

☐ 3. Annual Savings. (approximate)

$ _____

☐ 4. No additional costs or savings. This regulation makes only technical, non-substantive or clarifying changes to current law regulations.

☒ 5. No fiscal impact exists. This regulation does not affect any local entity or program.

☐ 6. Other. Explain _____

_____

FISCAL IMPACT STATEMENT (CONTINUED)

B. FISCAL EFFECT ON STATE GOVERNMENT *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

$ _____

It is anticipated that State agencies will:

☐ a. Absorb these additional costs within their existing budgets and resources.

☐ b. Increase the currently authorized budget level for the _____ Fiscal Year

☐ 2. Savings in the current State Fiscal Year. (Approximate)

$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any State agency or program.

☐ 4. Other. Explain _____

_____

C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

$ _____

☐ 2. Savings in the current State Fiscal Year. (Approximate)

$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any federally funded State agency or program.

☐ 4. Other. Explain _____

_____

FISCAL OFFICER SIGNATURE	DATE

The signature attests that the agency has completed the STD. 399 according to the instructions in SAM sections 6601-6616, and understands the impacts of the proposed rulemaking. State boards, offices, or departments not under an Agency Secretary must have the form signed by the highest ranking official in the organization.

AGENCY SECRETARY	DATE

Finance approval and signature is required when SAM sections 6601-6616 require completion of Fiscal Impact Statement in the STD. 399.

DEPARTMENT OF FINANCE PROGRAM BUDGET MANAGER	DATE

State of California
Department of Fish and Wildlife

Original on file.
Received March 20, 2019, 3:00PM

Date: March 20, 2019

To: Melissa Miller-Henson
Acting Executive Director
Fish and Game Commission

From: Craig Shuman, D. Env.
Marine Regional Manager

Subject: Hagfish Traps Regulation Amendment; California Environmental Quality Act (CEQA) Overview

In California, Pacific Hagfish (*Eptatretus stoutii*) (hagfish) is an open access commercial fishery administered by the Department of Fish and Wildlife (Department). Fishing is allowed year-round in all depths of State and federal waters, except in Marine Protected Areas. The hagfish fishery is primarily managed via restrictions on the amount and type of gear allowed. Section 9000.5 and subdivision 9001.6(b) of Fish and Game Code (FGC) define and authorize no more than a total of 500 Korean-style traps, or a total of 200, five-gallon bucket traps aboard a vessel, or in the water or combination thereof. The Fish and Game Commission (Commission) approved the use of 25 barrel traps (40-gallon capacity) as an alternative trap type under subsection (b) of Section 180.6, Title 14, California Code of Regulations (CCR), effective January 1, 2016 (rulemaking file number 2015-1116-01s). The 25-barrel trap limit was intended to be per vessel, and serve as a volumetric equivalent to the 200 five-gallon bucket trap limit prescribed by subdivision (b) of FGC Section 9001.6. This regulation was later amended (rulemaking file number 2016-0920-02s, effective January 1, 2017) to reflect a dimensional trap limit. When amended to shift from a 40-gallon volume to a dimension-based measurement of barrel size, subsection 180.6(b), Title 14, CCR was amended in an attempt to simplify language regarding trap use by a vessel by stating that "…no permittee may possess more than 25 barrel traps aboard a vessel or in the water or combination thereof." Due to the fact that a permittee can be the vessel operator, and/or any crewmember, this allows the use of 25 barrel traps per permittee, which goes against the original intent of the regulation effective January 1, 2016 to allow a maximum of 25 barrel traps per vessel (the volumetric equivalent to the 200 five-gallon bucket trap limit prescribed by subdivision (b) of FGC Section 9001.6)..

Amendment to subsection (b) of Section 180.6, Title 14, CCR will limit the number of allowable barrel traps to the vessel. This proposal is intended to promote the sustainability of California's hagfish fishery, reduce interaction with other bottom

fishing gear, and reduce the potential for entanglement of marine mammals in vertical trap lines. An additional amendment will require the use of the vessel's California commercial boat registration number to mark the buoy used to mark any hagfish trap. This will enable Law Enforcement Division (LED) staff to enforce vessel based trap limits. The purpose of this memo is to describe Department staff's analysis of use of a categorical exemption under the California Environmental Quality Act (CEQA).

Categorical Exemption to Protect the Environment

The Commission's adoption of these regulations is an action subject to CEQA. The review effort by Department staff pursuant to CEQA Guidelines section 15061 led Department staff to conclude that adoption of the regulations would fall within Class 7 and Class 8 categorical exemptions (CEQA Guidelines sections 15307 and 15308). These exemptions are related to agency actions to protect natural resources and the environment, and to promote sustainability. This regulatory amendment will limit the number of allowable barrel traps to the vessel, thus promoting sustainability of the resource, and limit the number of barrel traps on the seafloor and vertical lines in the water attached to the traps. The change in buoy marking requirements will allow LED staff to enforce vessel hagfish trap limits, further promoting sustainability of the resource. In Department staff's view, the Commission's adoption of regulations is an activity that is the proper subject of CEQA's Class 7 and Class 8 categorical exemptions.

No Exceptions to Categorical Exemptions Apply

As to the exceptions to categorical exemptions set forth in CEQA Guidelines section 15300.2, including the prospect of unusual circumstances and related effects, the Department's review was guided by the California Supreme Court's decision in *Berkeley Hillside Preservation v. City of Berkeley*. Department staff have reviewed all of the available information possessed by the Department relevant to the issue, and does not believe adoption of the amendments to the existing regulations poses any unusual circumstances that would constitute an exception to the categorical exemptions set forth above. Compared to the activities that fall within Class 7 and Class 8 generally, which include natural resource enhancement activities such as the regulatory effort here, there is nothing unusual about the adopted amendments to the existing hagfish regulations.

In addition, even if there were unusual circumstances, no potentially significant effects on either a project-specific or cumulative basis are expected. The amendments to the regulations are intended to improve the management and sustainability of California's hagfish resource and limit the potential of significant depletion.

Therefore, the Department does not believe that its reliance on Class 7 and Class 8 categorical exemptions are precluded by the exceptions set forth in CEQA Guidelines

section 15300.2.

If you have any questions regarding this item, please contact Travis Tanaka, Environmental Scientist, at (831) 649-2881 or Travis.Tanaka@wildlife.ca.gov.

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Print Form

Notice of Exemption

Appendix E

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

County Clerk
County of: _____

N/A

From: (Public Agency): CA Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244
(Address)

Project Title: Amend Section 180.6, Title 14, CCR, Re: Hagfish Traps

Project Applicant: N/A

Project Location - Specific:
Ocean waters from Crescent City to San Diego

Project Location - City: N/A Project Location - County: N/A

Description of Nature, Purpose and Beneficiaries of Project:
Amendment to subsection (b) of Section 180.6, Title 14, CCR changes barrel trap number in possession and use from the permittee to the vessel. Addition of subsection (c) will require that hagfish traps buoys be marked with the vessel's California commercial boat registration number.

Name of Public Agency Approving Project: California Fish and Game Commission

Name of Person or Agency Carrying Out Project: California Department of Fish and Wildlife

Exempt Status: **(check one):**

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: Cal Code Regs., Title 14 §§ 15307,15308
- ☐ Statutory Exemptions. State code number: _____

Reasons why project is exempt:
See attached.

Lead Agency
Contact Person: _____ Area Code/Telephone/Extension: 916-653-4899

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? ☐ Yes ☐ No

Signature: _____ Date: _____ Title: _____

☒ Signed by Lead Agency ☐ Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR: _____

ATTACHMENT TO NOTICE OF EXEMPTION
Adoption of Amendments to Section 180.6
Title 14, California Code of Regulations (CCR)
RE: Hagfish Traps

The California Fish and Game Commission (Commission) has taken final action under the Fish and Game Code (FGC) and the Administrative Procedure Act (APA) with respect to the project mentioned on June 13, 2019. In taking its final action for the purposes of the California Environmental Quality Act (CEQA, Pub. Resources Code, § 21000 *et seq*.), the Commission adopted the amendment to subsection (b) and addition of subsection (c) of Section 180.6, Title 14, CCR relying on the categorical exemptions for "Actions by Regulatory Agencies for Protection of Natural Resources" and "Actions by Regulatory Agencies for Protection of the Environment" contained in CEQA Guidelines sections 15307 and 15308. (Cal. Code Regs. tit. 14, §§ 15307, 15308.)

Categorical Exemptions to Protect Natural Resources and the Environment

In adopting the amendment to subsection (b) and addition of subsection (c) of Section 180.6, Title 14, CCR, the Commission relied, for purposes of CEQA, on Class 7 and Class 8 categorical exemptions. In general, these exemptions apply to agency actions taken to benefit natural resources and the environment. This amendment anticipates a benefit to the environment by limiting the allowable number of barrel traps to the vessel, rather than by the number of general trap permittees aboard the vessel. This amendment will limit the take of hagfish, and limit the number of traps on the seafloor with vertical lines attached to the traps that could potentially impact other marine life. The proposed addition of subsection (c) of Section 180.6, Title 14, CCR requiring the vessel's California commercial boat registration number to be marked on the buoy marking any hagfish trap will allow California Department of Fish and Wildlife (Department) law enforcement staff to monitor and enforce vessel trap limits. Therefore, the activity is one that is the proper subject of CEQA's Class 7 and Class 8 categorical exemptions.

California Fish and Game Commission

Staff Report on Staff Time Allocation and Activities

April 5, 2019

Commission staff time is a tangible and invaluable asset. Especially since the Commission's staff is so small, where and how staff members spend their time is important. This report identifies where Commission staff allocated time to general activity categories (see table; sample tasks for each general category begin on page 2) and specific activities during Feb and Mar 2019.

The general allocation table summarizes time across all staff classifications, though some classifications require a greater emphasis on certain task categories than others. For example, advisors can spend 30% or more of their time on special projects due to committee project assignments, while regulatory analysts spend up to 70% of their time on regulatory program tasks. Note with the personnel actions to refill behind the vacant executive director position, unfilled positions went down in March, while administration time increased. This is primarily due to the training of new staff.

General Allocation

Task Category	February Staff Time	March Staff Time
Regulatory Program	20%	17%
Non-Regulatory Program	2%	2%
Commission/Committee Meetings	19%	20%
Legal Matters	4%	5%
External Affairs	7%	8%
Special Projects	9%	11%
Administration	16%	28%
Leave Time	15%	9%
Unfilled Positions	10%	5%
Total Staff Time[1]	102%	106%

[1] *Total staff time is greater than 100% due to overtime*

Activities for February 2019

- Finished preparations for and conducted annual tribal planning meeting (Feb 5)
- Finished preparations for and conducted two publicly-noticed meetings (Feb 5 Tribal Committee and Feb 6 Fish and Game Commission)
- Began preparations for Marine Resources Committee meeting
- Participated in DFW regulations unit quarterly coordination meeting
- Participated in statewide fishing communities planning meeting

- Participated in MPA Statewide Leadership Team work plan sub-team meetings
- Participated in Ocean Protection Council MPA Statewide Leadership Team meeting
- Participated in DFW leadership team and Operations Committee meetings
- Conducted joint meeting with DFW regulations unit.
- Continued work on new state-mandated website template
- Participated in Ocean Science Trust-DFW-FGC fishing communities coordination meeting
- Attended legislative bill analysis training class

Activities for March 2019

- Conducted one publicly-noticed meeting (March 20 Marine Resources Committee)
- Began preparations for one publicly-noticed meeting (April Fish and Game Commission meeting)
- Participated in Marine Protection Act *Other Uses* subgroup meeting
- Attended legislative reception for California Farm Bureau Federation
- Attended annual fisheries forum
- Participated in DFW leadership team and Operations Committee meetings
- Attended Ocean Day and related events at state capitol and other locations
- Conducted orientation and welcome meeting for new commissioner Samantha Murray
- Continued work on new state-mandated website template
- Began work on Service Based Budgeting initiative

General Allocation Categories with Sample Tasks

Regulatory Program

- Coordination meetings with DFW to develop timetables and notices
- Prepare and file notices, re-notices, and initial and final statements of reasons
- Prepare administrative records
- Track and respond to public comments
- Consult, research and respond to inquiries from the Office of Administrative Law

Non-Regulatory Program

- DFW partnership, including joint development of management plans and concepts
- Process and analyze non-regulatory requests
- Develop, review and amend Commission policies
- Research and review adaptive management practices
- Review and process California Endangered Species Act petitions

Commission/Committee Meetings and Support

- Research and compile subject-specific information
- Review and develop policies

- Develop and distribute meeting agendas and materials
- Agenda and debrief meetings
- Prepare meeting summaries, audio files and voting records
- Research and secure meeting venues
- Develop and distribute after-meeting memos/letters
- Make travel arrangements for staff and commissioners
- Conduct onsite meeting management
- Process submitted meeting materials
- Provide commissioner support (expense claims, office hours, etc.)
- Process and analyze regulatory petitions

Legal Matters

- Respond to Public Records Act requests
- Process appeals and accusations
- Process requests for permit transfers
- Process kelp and state water bottom leases
- Litigation
- Prepare administrative records

External Affairs

- Engage and educate legislators, monitor legislation
- Maintain state, federal and tribal government relations
- Correspondence: Respond to public inquiries
- Website maintenance

Special Projects

- Predator Policy Workgroup
- Fishing from piers and jetties
- Coastal fishing communities
- Fisheries Bycatch Workgroup
- Streamline routine regulatory actions
- Strategic planning
- Aquaculture Best Management Practices
- Website transition project

Administration

- Staff training and professional development
- Correspondence
- Purchases and payments
- Contract management
- Personnel management
- Budget development and tracking
- Health and safety oversight
- Internal processes and procedures
- Document archival

Leave Time

- Holidays
- Sick leave
- Vacation or annual leave
- Jury duty
- Bereavement

Unfilled

- Executive Director
- Legal/Regulatory Clerk

Department of Fish & Wildlife
Legislative Report

April 2019
(as of April 8, 2019)

Staff Contacts:
Clark Blanchard, CDFW acting Deputy Director, (916) 651-7824
Julie Oltmann, CDFW Legislative Representative, (916) 653-9772

You can also find legislative information online by visiting http://leginfo.legislature.ca.gov/.

AB 44 (Friedman D) Fur products: prohibition.
Introduced: 12/3/2018
Last Amend: 4/2/2019
Status: 4/3/2019-Re-referred to Com. on APPR.
Location: 3/26/2019-A. APPR.
Summary: Would make it unlawful to sell, offer for sale, display for sale, trade, give, donate, or otherwise distribute a fur product, as defined, in the state. The bill would also make it unlawful to manufacture a fur product in the state. The bill would exempt from these prohibitions used fur products, as defined, fur products used for specified purposes, and any activity expressly authorized by federal law.

AB 137 (Cooper D) Public safety officers: investigations and interviews.
Introduced: 12/7/2018
Last Amend: 3/11/2019
Status: 3/28/2019-Read third time. Passed. Ordered to the Senate. In Senate. Read first time. To Com. on RLS. for assignment.
Location: 3/28/2019-S. RLS.
Summary: Would specify that a public safety officer under investigation is required to be informed of, to the extent the information is reasonably known to the agency, the time, date, and location of any incident at issue, and the titles of any policies, orders, rules, procedures, or directives alleged to have been violated with a general characterization of the event giving rise to the allegation. The bill would prohibit these provisions from being construed to grant a right to full discovery of reports and witness statements or a detailed description of the events that are the basis of the allegation before an officer's interrogation. The bill would specify information an agency may provide if it is investigating voluminous complaints, as defined, regarding the violation of the same rule or policy.

AB 202 (Mathis R) Endangered species: conservation: California State Safe Harbor Agreement Program Act.
Introduced: 1/14/2019
Last Amend: 2/26/2019
Status: 3/26/2019-In Senate. Read first time. To Com. on RLS. for assignment.
Location: 3/26/2019-S. RLS.
Summary: Would delete the January 1, 2020, repeal date of the California State Safe Harbor Agreement Program Act, thereby extending the operation of the act indefinitely. Because submission of false, inaccurate, or misleading information on an application for a state safe harbor

agreement under the act would be a crime, this bill would extend the application of a crime, thus imposing a state-mandated local program.

AB 231 (Mathis R) California Environmental Quality Act: exemption: recycled water.
Introduced: 1/17/2019
Status: 3/25/2019-In committee: Set, first hearing. Failed passage.
Location: 2/7/2019-A. NAT. RES.
Summary: Would exempt from CEQA a project to construct or expand a recycled water pipeline for the purpose of mitigating drought conditions for which a state of emergency was proclaimed by the Governor if the project meets specified criteria. Because a lead agency would be required to determine if a project qualifies for this exemption, this bill would impose a state-mandated local program. The bill would also exempt from CEQA the development and approval of building standards by state agencies for recycled water systems.

AB 243 (Kamlager-Dove D) Implicit bias training: peace officers.
Introduced: 1/18/2019
Last Amend: 3/26/2019
Status: 3/27/2019-Re-referred to Com. on PUB. S.
Location: 3/25/2019-A. PUB. S.
Summary: Current law requires every peace officer to participate in expanded training prescribed by the Commission on Peace Officer Standards and Training that includes and examines evidence-based patterns, practices, and protocols that make up racial and identity profiling, including implicit bias. Once basic training is completed, current law requires specified peace officers to complete a refresher course on racial and identity profiling at least every 5 years. This bill would require those peace officers currently required to take the refresher course every five years, and additional peace officers, as specified, to instead take 8 hours of refresher training on racial and identity profiling at least every 2 years.

AB 255 (Limón D) Coastal resources: oil spills: grants.
Introduced: 1/23/2019
Status: 4/4/2019-Read second time. Ordered to Consent Calendar.
Location: 4/3/2019-A. CONSENT CALENDAR
Summary: The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act authorizes the administrator for oil spill response to offer grants to a local government with jurisdiction over or directly adjacent to waters of the state to provide oil spill response equipment to be deployed by a certified local spill response manager, as provided.This bill would provide that Native American tribes and other public entities are also eligible to receive those grants.

AB 271 (Cooper D) Civil service: Personnel Classification Plan: salary equalization.
Introduced: 1/24/2019
Last Amend: 3/6/2019
Status: 4/3/2019-From committee: Do pass and re-refer to Com. on APPR. (Ayes 7. Noes 0.) (April 3). Re-referred to Com. on APPR.
Location: 4/3/2019-A. APPR.
Summary: Would require the Department of Human Resources to, by December 31, 2020, and every 2 years thereafter, evaluate all civil service classifications and prepare a detailed report on gender and ethnicity pay equity in each classification where there is an underrepresentation of women and minorities. The bill would require each state agency to submit specified information to the department about each state civil service classification within the agency.

AB 273 (Gonzalez D) Fur-bearing and nongame mammals: recreational and commercial fur trapping: prohibition.
Introduced: 1/24/2019
Last Amend: 3/5/2019
Status: 3/12/2019-From committee: Do pass and re-refer to Com. on APPR. (Ayes 9. Noes 3.) (March 12). Re-referred to Com. on APPR.
Location: 3/12/2019-A. APPR.

Summary: Would prohibit the trapping of any fur-bearing mammal or nongame mammal for purposes of recreation or commerce in fur and would prohibit the sale of the raw fur of any fur-bearing mammal or nongame mammal otherwise lawfully taken pursuant to the Fish and Game Code or regulations adopted pursuant to that code. Because a violation of these provisions would be a crime, this bill would impose a state-mandated local program. The bill would also make other conforming changes.

AB 284 (Frazier D) Junior hunting licenses: eligibility: age requirement.
Introduced: 1/28/2019
Status: 4/3/2019-In committee: Set, first hearing. Referred to APPR. suspense file.
Location: 4/3/2019-A. APPR. SUSPENSE FILE
Summary: Current law requires the Department of Fish and Wildlife to issue various types of hunting licenses, including a discounted hunting license known as a junior hunting license, upon payment of a certain fee from an eligible applicant. Current law, until July 1, 2020, expands the eligibility for a junior hunting license from persons who are under 16 years of age on July 1 of the licensing year to persons who are under 18 years of age on July 1 of the licensing year, as specified, and makes conforming changes related to that expanded eligibility. This bill would extend, this expanded eligibility, for a junior hunting license indefinitely.

AB 286 (Bonta D) Taxation: cannabis.
Introduced: 1/28/2019
Last Amend: 4/3/2019
Status: 4/4/2019-Re-referred to Com. on REV. & TAX.
Location: 4/3/2019-A. REV. & TAX
Summary: The Control, Regulate and Tax Adult Use of Marijuana Act imposes duties on the Bureau of Cannabis Control in the Department of Consumer Affairs, the Department of Food and Agriculture, and the State Department of Public Health with respect to the creation, issuance, denial, suspension and revocation of commercial cannabis licenses, and imposes an excise tax commencing January 1, 2018, on the purchase of cannabis and cannabis products at the rate of 15% of the average market price of any retail sale by a cannabis retailer. Commencing January 1, 2018, AUMA also imposes a cultivation tax upon all cultivators on all harvested cannabis that enters the commercial market, at specified rates per dry-weight ounce of cannabis flowers and leaves. This bill would reduce that excise tax rate to 11% on and after the operative date of this bill until July 1, 2022, at which time the excise tax rate would revert back to 15%.

AB 298 (Mathis R) Housing: home purchase assistance program: first responders: Legislative Analyst: study and report.
Introduced: 1/28/2019
Status: 2/15/2019-Referred to Com. on H. & C.D.
Location: 2/15/2019-A. H. & C.D.
Summary: Would require the Legislative Analyst to conduct a study, and present the findings thereof to the Legislature, to inform the creation of a low-interest loan program for first responders. The bill would require the report to be submitted on or before January 1, 2024. The bill would require the report to include a recommendation as to which state department is best suited to administer the program, an estimation of the amount of funding that would be necessary to conduct the program, and recommendations for qualifications for participation in the program.

AB 312 (Cooley D) State government: administrative regulations: review.
Introduced: 1/29/2019
Status: 4/3/2019-In committee: Set, first hearing. Referred to APPR. suspense file.
Location: 4/3/2019-A. APPR. SUSPENSE FILE
Summary: Would require each state agency to, on or before January 1, 2022, review its regulations, identify any regulations that are duplicative, overlapping, inconsistent, or out of date, revise those identified regulations, as provided, and report its findings and actions taken to the Legislature and Governor, as specified. The bill would repeal these provisions on January 1, 2023.

AB 352

(Garcia, Eduardo D) California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund: investment plan: Transformative Climate Communities Program.
Introduced: 2/4/2019
Last Amend: 3/14/2019
Status: 3/26/2019-From committee: Do pass and re-refer to Com. on APPR. (Ayes 8. Noes 0.) (March 25). Re-referred to Com. on APPR.
Location: 3/26/2019-A. APPR.
Summary: Would, beginning July 1, 2020, would require state agencies administering competitive grant programs that allocate moneys from the Greenhouse Gas Reduction Fund to give specified communities preferential points during grant application scoring for programs intended to improve air quality, to include a specified application timeline, to allow applicants from the Counties of Imperial and San Diego to include daytime population numbers in grant applications, and to prohibit grant eligibility and scoring criteria from precluding low-income communities, as defined, from applying for or being awarded a grant.

AB 392

(Weber D) Peace officers: deadly force.
Introduced: 2/6/2019
Last Amend: 3/27/2019
Status: 4/9/2019-Action From PUB. S.: Do pass.To RLS..
Location: 4/9/2019-A. RLS.
Summary: Would redefine the circumstances under which a homicide by a peace officer is deemed justifiable to include when the killing is in self-defense or the defense of another, consistent with the existing legal standard for self-defense, or when the killing is necessary to prevent the escape of a fleeing felon whose immediate apprehension is necessary to prevent death or serious injury. The bill would additionally bar the use of this defense if the peace officer acted in a criminally negligent manner that caused the death, including if the officer's criminally negligent actions created the necessity for the use of deadly force.

AB 394

(Obernolte R) California Environmental Quality Act: exemption: egress route project or activity: fire safety.
Introduced: 2/6/2019
Last Amend: 4/2/2019
Status: 4/3/2019-Re-referred to Com. on APPR.
Location: 3/25/2019-A. APPR.
Summary: Would, until January 1, 2025, exempt from CEQA egress route projects or activities undertaken by a public agency that are specifically recommended by the State Board of Forestry and Fire Protection that improve the fire safety of an existing subdivision if certain conditions are met. The bill would require the lead agency to hold a noticed public meeting to hear and respond to public comments before determining that a project or activity is exempt. The bill would require the lead agency to file a notice of exemption with the Office of Planning and Research and with the clerk of the county in which the project or activity will be located.

AB 430

(Gallagher R) Housing development: Camp Fire Housing Assistance Act of 2019.
Introduced: 2/7/2019
Last Amend: 3/19/2019
Status: 3/20/2019-Re-referred to Com. on NAT. RES.
Location: 2/15/2019-A. NAT. RES.
Summary: Current law authorizes a development proponent to submit an application for a development permit that is subject to a streamlined, ministerial approval process and not subject to a conditional use permit if the development satisfies specified objective planning standards, including that the development is a multifamily housing development that contains 2 or more residential units. This bill would authorize a development proponent to submit an application for a residential development, or mixed use development that includes residential units, in the County of Butte that is subject to a similar streamlined, ministerial approval process and not subject to a conditional use permit if the development satisfies specified objective planning standards.

AB 431 (Gallagher R) California Environmental Quality Act: exemptions: projects in Town of Paradise and Butte County.
Introduced: 2/7/2019
Last Amend: 3/19/2019
Status: 4/4/2019-In committee: Set, first hearing. Hearing canceled at the request of author.
Location: 2/15/2019-A. NAT. RES.
Summary: Would exempt from CEQA projects or activities related to the provision of sewer treatment or water service to the Town of Paradise or related to the improvement of evacuation routes in the Town of Paradise. The bill would also exempt from CEQA projects or activities undertaken by the Paradise Irrigation District related to the provision of water service.

AB 441 (Eggman D) Water: underground storage.
Introduced: 2/11/2019
Last Amend: 3/27/2019
Status: 3/28/2019-Re-referred to Com. on APPR.
Location: 3/27/2019-A. APPR.
Summary: Under current law, the right to water or to the use of water is limited to that amount of water that may be reasonably required for the beneficial use to be served. Current law provides for the reversion of water rights to which a person is entitled when the person fails to beneficially use the water for a period of 5 years. Current law declares that the storing of water underground, and related diversions for that purpose, constitute a beneficial use of water if the stored water is thereafter applied to the beneficial purposes for which the appropriation for storage was made. This bill would instead provide that any diversion of water to underground storage constitutes a diversion of water for beneficial use for which an appropriation may be made if the diverted water is put to beneficial use, as specified.

AB 448 (Garcia, Eduardo D) Water rights: stockponds.
Introduced: 2/11/2019
Last Amend: 4/3/2019
Status: 4/4/2019-Re-referred to Com. on APPR.
Location: 3/26/2019-A. APPR.
Summary: Would provide that the owner of a stockpond built prior to January 1, 2019, that does not have a capacity greater than 10 acre-feet may obtain a right to appropriate water for the principal purpose of watering livestock if that person files a claim for a water right with the State Water Resources Control Board accompanied by a fee not later than December 31, 2021, with certain exceptions. Upon the issuance of a certificate by the board for an appropriation of water obtained under the bill's provisions, the bill would require the board to provide in writing conditions to which the appropriation is subject.

AB 454 (Kalra D) Migratory birds: Migratory Bird Treaty Act.
Introduced: 2/11/2019
Status: 3/26/2019-From committee: Do pass and re-refer to Com. on APPR. (Ayes 8. Noes 3.) (March 26). Re-referred to Com. on APPR.
Location: 3/26/2019-A. APPR.
Summary: Would make unlawful the taking or possession of any migratory nongame bird designated in the federal act as of January 1, 2017, any additional migratory nongame bird that may be designated in the federal act after that date, or any part of those migratory nongame birds, except as provided by any provision of the Fish and Game Code, or any rule, regulation, or order made or adopted pursuant to the code, that is consistent with, or more protective than, rules and regulations adopted by the United States Secretary of the Interior under the federal act. Under existing law, a violation of the Fish and Game Code is a crime.

AB 467 (Boerner Horvath D) Competitions on state property: prize compensation: gender equity.
Introduced: 2/11/2019
Status: 3/4/2019-Referred to Com. on A.,E.,S.,T., & I.M.
Location: 3/4/2019-A. A.,E.,S.,T., & I.M.

Summary: Would require the Department of Parks and Recreation, the State Lands Commission and the California Coastal Commission to include in permit or lease conditions, for a competition event to be held on land under the jurisdiction of the entity, as described, and that awards prize compensation, as defined, to competitors in gendered categories, a requirement that the prize compensation be identical between the gendered categories at each participant level.

AB 469 (Petrie-Norris D) State records management: records management coordinator.
Introduced: 2/11/2019
Status: 4/4/2019-Read second time. Ordered to third reading.
Location: 4/4/2019-A. THIRD READING
Summary: The State Records Management Act requires the Secretary of State to establish and administer a records management program that will apply efficient and economical management methods to the creation, utilization, maintenance, retention, preservation, and disposal of state records. The act requires the Secretary of State, as part of those duties, to obtain from agencies the reports required for administration of the records management program. This bill would require the Secretary of State to obtain those reports from agencies on a biennial basis, and would require the Secretary of State to report statewide compliance with the act to the Department of Finance on an annual basis.

AB 489 (Stone, Mark D) Water development projects: state financial assistance.
Introduced: 2/12/2019
Status: 4/3/2019-In committee: Set, first hearing. Referred to APPR. suspense file.
Location: 4/3/2019-A. APPR. SUSPENSE FILE
Summary: For certain flood control projects authorized on or after January 1, 2002, or for which specified findings have been made on or after that date, the act requires the state to pay 50% of specified nonfederal costs. Current law authorizes the state to pay up to 70% of nonfederal costs upon the recommendation of the Department of Water Resources or the Central Valley Flood Protection Board if either entity determines that the project will advance one of several objectives. Those objectives include developing or enhancing certain recreational opportunities. This bill would, for purposes of eligibility for increasing the state share of those nonfederal costs to 70%, include in those recreational opportunities outdoor recreational areas, sports complexes, and musical venues.

AB 527 (Voepel R) Importation, possession, or sale of endangered wildlife.
Introduced: 2/13/2019
Last Amend: 4/3/2019
Status: 4/4/2019-Re-referred to Com. on W., P., & W.
Location: 2/21/2019-A. W.,P. & W.
Summary: Would delay the commencement of the prohibition on importing into the state for commercial purposes, possessing with intent to sell, or selling within the state, the dead body, or a part or product thereof, of a crocodile or alligator until January 1, 2030.

AB 559 (Arambula D) Millerton Lake State Recreation Area: acquisition of land.
Introduced: 2/13/2019
Status: 3/21/2019-In committee: Set, first hearing. Hearing canceled at the request of author.
Location: 2/25/2019-A. W.,P. & W.
Summary: Would require the Department of Parks and Recreation to effectively manage lands currently within its jurisdiction in the Millerton Lake State Recreation Area adjacent to the San Joaquin River, and would authorize the department to enter into an agreement with the conservancy to manage lands acquired by the conservancy adjacent to the state recreation area, as specified.

AB 584 (Gallagher R) Sport fishing licenses.
Introduced: 2/14/2019
Status: 2/15/2019-From printer. May be heard in committee March 17.
Location: 2/14/2019-A. PRINT

Summary: Current law requires every person 16 years of age or older who takes any fish, reptile, or amphibian for any purpose other than profit to first obtain a sport fishing license for that purpose, with specified exceptions, and to have that license on their person or in their immediate possession when engaged in carrying out any activity authorized by the license. This bill would make nonsubstantive changes to this provision.

AB 658 (Garcia, Eduardo D) Water rights: water management.
Introduced: 2/15/2019
Last Amend: 4/2/2019
Status: 4/3/2019-Re-referred to Com. on APPR.
Location: 3/26/2019-A. APPR.
Summary: Would authorize a groundwater sustainability agency or local agency to apply for, and the State Water Resources Control Board to issue, a conditional temporary permit for diversion of surface water to underground storage for beneficial use that advances the sustainability goal of a groundwater basin, as specified.

AB 782 (Berman D) California Environmental Quality Act: exemption: public agencies: land transfers.
Introduced: 2/19/2019
Last Amend: 4/2/2019
Status: 4/3/2019-Re-referred to Com. on APPR.
Location: 3/25/2019-A. APPR.
Summary: Would exempt from CEQA the acquisition, sale, or other transfer of interest in land by a public agency for certain purposes, or the granting or acceptance of funding by a public agency for those purposes, if the public agency conditions those transactions on environmental review in accordance with CEQA before making physical changes to the transferred land before making those changes.

AB 802 (Stone, Mark D) Reports to the Legislature.
Introduced: 2/20/2019
Status: 3/28/2019-Referred to Com. on A. & A.R.
Location: 3/28/2019-A. A. & A.R.
Summary: Would require state and local agencies to submit all reports to the Secretary of the Senate, the Chief Clerk of the Assembly, and the Legislative Counsel electronically, rather than submitting a printed copy, and would eliminate the requirement that state agencies separately submit the summary of the report directly to Members of the Legislature. For reports involving data collection or analysis, the bill would require a state agency to post all data used to generate the report on the agency's internet website at the time the report is posted.

AB 805 (Obernolte R) Reports submitted to legislative committees.
Introduced: 2/20/2019
Last Amend: 4/2/2019
Status: 4/3/2019-Re-referred to Com. on APPR.
Location: 3/27/2019-A. APPR.
Summary: Current law requires a report required or requested by law to be submitted by a state or local agency to the Members of either house of the Legislature, generally, to be submitted in a specified manner, including a requirement that a report submitted by a state agency be posted on the state agency's internet website.This bill would additionally require a state agency to post on its internet website any report, as defined, that the state agency submits to a committee of the Legislature.

AB 834 (Quirk D) Freshwater and Estuarine Harmful Algal Bloom Program
Introduced: 2/20/2019
Status: 3/26/2019-From committee: Do pass and re-refer to Com. on APPR. (Ayes 13. Noes 0.) (March 26). Re-referred to Com. on APPR.
Location: 3/26/2019-A. APPR.
Summary: Would require the State Water Resources Control Board to establish a Freshwater and Estuarine Harmful Algal Bloom Program to protect water quality and public health from algal

blooms. The bill would require the state board, in consultation with specified entities, among other things, to coordinate immediate and long-term algal bloom event incident response, as provided, and conduct and support algal bloom field assessment and ambient monitoring at the state, regional, watershed, and site-specific waterbody scales.

AB 855 (McCarty D) Department of Justice: law enforcement policies on the use of deadly force.
Introduced: 2/20/2019
Last Amend: 3/19/2019
Status: 3/20/2019-Re-referred to Com. on PUB. S.
Location: 3/18/2019-A. PUB. S.
Summary: Would require the Attorney General to convene a task force, as specified, to study the use of deadly force by law enforcement officers and to develop recommendations, including a model written policy, for law enforcement agencies.

AB 883 (Dahle R) Fish and wildlife: catastrophic wildfires: report.
Introduced: 2/20/2019
Status: 3/26/2019-From committee: Do pass and re-refer to Com. on APPR. (Ayes 14. Noes 0.) (March 26). Re-referred to Com. on APPR.
Location: 3/26/2019-A. APPR.
Summary: Would require the Department of Fish and Wildlife, in consultation with the Department of Forestry and Fire Protection, on or before December 31, 2020, and by December 31 each year thereafter, to study, investigate, and report to the Legislature on the impacts on wildlife and wildlife habitat resulting from any catastrophic wildfire, as defined, that occurred during that calendar year, including specified information on a catastrophic wildfire's impact on ecosystems, biodiversity, and protected species in the state.

AB 889 (Maienschein D) Animal research.
Introduced: 2/20/2019
Last Amend: 4/1/2019
Status: 4/2/2019-Re-referred to Com. on HEALTH.
Location: 3/4/2019-A. HEALTH
Summary: Current law prohibits the keeping or use of animals for diagnostic purposes, education, or research without approval by the State Department of Public Health. Current law authorizes the department to prescribe rules under which persons who wish to keep or use animals for those purposes may obtain approval from the department, and to promulgate regulations governing the use of animals for those purposes. Current law exempts certain persons from those requirements, including persons who use or keep animals for animal training and animal cosmetics, among other things. This bill would define "animal" for purposes of these provisions as any live vertebrate nonhuman animal used for diagnostic purposes, education, or research, as specified.

AB 935 (Rivas, Robert D) Oil and gas: facilities and operations: monitoring and reporting.
Introduced: 2/20/2019
Last Amend: 3/21/2019
Status: 3/25/2019-Re-referred to Com. on NAT. RES.
Location: 3/21/2019-A. NAT. RES.
Summary: Under current law, the Division of Oil, Gas, and Geothermal Resources in the Department of Conservation regulates the drilling, operation, maintenance, and abandonment of oil and gas wells in the state. Current law defines various terms for those purposes, including "production facility. This bill "Would define the term "sensitive production facility" for those purposes to mean a production facility that is located within certain areas, including, among others, an area containing a building intended for human occupancy that is located within 2,500 feet of the production facility.

AB 936 (Rivas, Robert D) Oil spills: response and contingency planning.
Introduced: 2/20/2019
Last Amend: 4/1/2019

Status: 4/8/2019-VOTE: Do pass as amended and be re-referred to the Committee on [Appropriations]
Location: 4/8/2019-A. APPR.
Summary: Would define "nonfloating oil" for purposes of the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act. The bill would require the administrator for oil spill response to complete on or before January 1, 2022, an independent scientific study to determine the best available means of addressing nonfloating oil spills and to develop a set of findings defining the elements of state-of-the-art response capability to nonfloating oil spills. The bill would require the administrator to include in the revision to the California oil spill contingency plan due on or before January 1, 2023, an evaluation of nonfloating oil taking into consideration the results of the study.

AB 1013 (Obernolte R) State agencies: grant applications.
Introduced: 2/21/2019
Last Amend: 4/8/2019
Status: 4/8/2019-Read third time and amended. Ordered to third reading.
Location: 3/28/2019-A. THIRD READING
Summary: Current law authorizes various state agencies to award grant money for various purposes.This bill would prohibit a state agency from selecting as an evaluator of a grant application a person who, within the five year period preceding receipt of that application, was a representative, member, or staff member of an organization or person that is applying to receive grant funding from that state agency.

AB 1040 (Muratsuchi D) Protection of cetaceans: unlawful activities.
Introduced: 2/21/2019
Status: 3/14/2019-In committee: Set, first hearing. Hearing canceled at the request of author.
Location: 3/7/2019-A. W.,P. & W.
Summary: Current law makes it unlawful to hold in captivity an orca, whether wild caught or captive bred, for any purpose, including for display, performance, or entertainment purposes; to breed or impregnate an orca held in captivity; to export, collect, or import the semen, other gametes, or embryos of an orca held in captivity for the purpose of artificial insemination; or to export, transport, move, or sell an orca located in the state to another state or country. Current law creates certain exceptions to these provisions, including an exception that authorizes an orca located in the state on January 1, 2017, to continue to be held in captivity for its current purpose and, after June 1, 2017, to continue to be used for educational presentations. This bill would expand these provisions to include cetaceans, which the bill would define to mean a whale, dolphin, and porpoise in the order Cetacea.

AB 1149 (Fong R) California Environmental Quality Act: exemption for transportation safety projects in the County of Kern.
Introduced: 2/21/2019
Last Amend: 3/26/2019
Status: 3/27/2019-Re-referred to Com. on NAT. RES.
Location: 3/25/2019-A. NAT. RES.
Summary: Would, until July 1, 2026, exempt a transportation safety project within the County of Kern to correct a dangerous condition on a public roadway, as defined, from CEQA, if that project is initiated following an accident resulting in death or serious physical injuries resulting from that dangerous condition, and if the project is designed to reduce or eliminate the dangerous condition and substantially lessen future risk of fatalities or serious injuries resulting from future accidents.

AB 1160 (Dahle R) Forestry: timber operations: sustained yield plans: exemptions.
Introduced: 2/21/2019
Last Amend: 3/26/2019
Status: 3/27/2019-Re-referred to Com. on NAT. RES.
Location: 3/25/2019-A. NAT. RES.
Summary: The Z'berg-Nejedly Forest Practice Act of 1973 prohibits a person from conducting timber operations, as defined, unless a timber harvesting plan prepared by a registered professional forester has been submitted to, and approved by, the Department of Forestry and Fire

Protection. The act requires the State Board of Forestry and Fire Protection to adopt district forest practice rules and regulations, as provided, and requires a sustained yield plan that is prepared and approved in accordance with these rules and regulations to be effective for a period of no more than 10 years.This bill would instead require the sustained yield plan to be effective for a period of no more than 20 years.

AB 1190 (Irwin D) Unmanned aircraft: state and local regulation: limitations.
Introduced: 2/21/2019
Status: 3/11/2019-Referred to Coms. on P. & C.P. and JUD.
Location: 3/11/2019-A. P. & C.P.
Summary: Would, among other things, prohibit a state or local agency from adopting any law or regulation that bans the operation of an unmanned aircraft system. The bill would include the operation of small unmanned aircraft systems within the definition of hazardous recreational activity for purposes of public entity liability. The bill would authorize a state or local agency to adopt regulations to enforce a requirement that a small unmanned aircraft system be properly registered under existing federal regulations.

AB 1197 (Santiago D) California Environmental Quality Act: exemption: local and regional housing projects and emergency shelters.
Introduced: 2/21/2019
Last Amend: 3/21/2019
Status: 3/25/2019-Re-referred to Com. on NAT. RES.
Location: 3/21/2019-A. NAT. RES.
Summary: The California Environmental Quality Act (CEQA) requires a lead agency, as defined, to prepare, or cause to be prepared, and certify the completion of, an environmental impact report on a project that it proposes to carry out or approve that may have a significant effect on the environment or to adopt a negative declaration if it finds that the project will not have that effect. CEQA also requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment. This bill would exclude from the term "project" local or regional housing projects that meet certain requirements, as specified, and emergency shelters funded by state programs and would thereby exempt those projects from CEQA.

AB 1237 (Aguiar-Curry D) Greenhouse Gas Reduction Fund: guidelines.
Introduced: 2/21/2019
Status: 4/8/2019-VOTE: Do pass and be re-referred to the Committee on [Appropriations] with recommendation: To Consent Calendar
Location: 4/8/2019-A. APPR.
Summary: Would require an agency that receives an appropriation from the Greenhouse Gas Reduction Fund to post on its internet website the agency's guidelines, as specified, for how moneys from the fund are allocated.

AB 1243 (Fong R) Traffic Relief and Road Improvement Act.
Introduced: 2/21/2019
Last Amend: 4/3/2019
Status: 4/4/2019-Re-referred to Com. on TRANS.
Location: 3/25/2019-A. TRANS.
Summary: Would create the Traffic Relief and Road Improvement Program to address traffic congestion and deferred maintenance on the state highway system and the local street and road system. The bill would provide for the deposit of various existing sources of revenue in the Traffic Relief and Road Improvement Account, which the bill would create in the State Transportation Fund, including revenues attributable to the sales and use tax on motor vehicles, revenues attributable to automobile and motor vehicle insurance policies from the insurer gross premiums tax, and certain miscellaneous State Highway Account revenues.

AB 1244 (Fong R) Environmental quality: judicial review: housing projects.
Introduced: 2/21/2019
Status: 3/11/2019-Referred to Coms. on NAT. RES. and H. & C.D.
Location: 3/11/2019-A. NAT. RES.
Summary: Would, in an action or proceeding seeking judicial review under the California Environmental Quality Act, prohibit a court from staying or enjoining a housing project for which an environmental impact report has been certified, unless the court makes specified findings.

AB 1254 (Kamlager-Dove D) Bobcats: take prohibition.
Introduced: 2/21/2019
Last Amend: 3/28/2019
Status: 4/1/2019-Re-referred to Com. on W., P., & W.
Location: 3/28/2019-A. W.,P. & W.
Summary: Would make it unlawful to hunt, trap, or otherwise take a bobcat, except under specified circumstances, including under a depredation permit. The bill would authorize the department to adopt regulations to implement these provisions. The bill would prohibit the take of bobcats under the above-described authorizations for the take of nongame mammals. Because a violation of these provisions would be a crime, this bill would impose a state-mandated local program.

AB 1260 (Maienschein D) Endangered wildlife.
Introduced: 2/21/2019
Status: 3/11/2019-Referred to Com. on W., P., & W.
Location: 3/11/2019-A. W.,P. & W.
Summary: Would, commencing January 1, 2022, make it a misdemeanor to import into the state for commercial purposes, to possess with intent to sell, or to sell within the state, the dead body or other part or product of an iguana, skink, caiman, shark, stingray, hippopotamus, or a Teju, Ring, or Nile lizard. By creating a new crime, the bill would impose a state-mandated local program.

AB 1387 (Wood D) Sport fishing licenses: 12 consecutive month licenses.
Introduced: 2/22/2019
Status: 4/9/2019-Action From W.,P. & W.: Do pass.To APPR..
Location: 4/9/2019-A. APPR.
Summary: Current law governs the issuance of calendar year and short-term sport fishing licenses, including the fees for those licenses. Under current law, a calendar year license expires at the end of the calendar year, regardless of when issued. This bill, instead of calendar year licenses, would require issuance of sport fishing licenses that expire 12 consecutive months after the date specified on the license. The bill would require license applicants to provide their email address and agree to be contacted regarding purchase, renewal, or reactivation.

AB 1545 (Obernolte R) Civil penalty reduction policy.
Introduced: 2/22/2019
Last Amend: 4/8/2019
Status: 4/8/2019-Read second time and amended.
Location: 4/2/2019-A. A. & A.R.
Summary: Would, with certain exceptions, require a state agency to assist a small business, as defined, in complying with all statutes and regulations administered by the state agency and in any enforcement action by the state agency. The bill would require a state agency to establish a policy, by December 31, 2020, that provides for the reduction of civil penalties for violations of regulatory or statutory requirements by a small business under appropriate circumstances. The bill would authorize the state agency to update the policy to reflect current issues and conditions affecting small businesses and the state agency.

AB 1549 (O'Donnell D) Wildlife: deer: Santa Catalina Island: report.
Introduced: 2/22/2019
Last Amend: 3/21/2019

Status: 4/9/2019-Action From W.,P. & W.: Do pass.To APPR..
Location: 4/9/2019-A. APPR.
Summary: Would require the Department of Fish and Wildlife to develop, by January 1, 2022, a report, in consultation with other relevant state agencies, local governments, federal agencies, nongovernmental organizations, landowners, and scientific entities, to inform and coordinate management decisions regarding deer on Santa Catalina Island that includes, among other things, estimates of the historic, current, and future deer population on the island and an assessment of the overall health of the deer population on the island.

AB 1612 (Quirk D) Department of Fish and Wildlife: Invasive Species Response Fund.
Introduced: 2/22/2019
Last Amend: 3/28/2019
Status: 4/1/2019-In committee: Set, first hearing. Hearing canceled at the request of author. Re-referred to Com. on W., P., & W.
Location: 3/28/2019-A. W.,P. & W.
Summary: Would establish the Invasive Species Response Fund in the State Treasury and would continuously appropriate money deposited in the fund to the Department of Fish and Wildlife to respond to nonnative vertebrate species invasions in coordination with other relevant government agencies. The bill would require any money received by the department from the federal government for the purpose of controlling and eradicating nonnative vertebrate species to be deposited in the fund.

AB 1657 (Garcia, Eduardo D) Salton Sea: Office of the Salton Sea: Salton Sea Oversight Committee.
Introduced: 2/22/2019
Status: 4/9/2019-Action From W.,P. & W.: Do pass.To APPR..
Location: 4/9/2019-A. APPR.
Summary: The Salton Sea Restoration Act requires the Secretary of the Natural Resources Agency, in consultation and coordination with the Salton Sea Authority, to lead Salton Sea restoration efforts.This bill would establish an Office of the Salton Sea within the Natural Resources Agency. The bill would require the secretary to establish a Salton Sea Oversight Committee.

AB 1788 (Bloom D) Pesticides: use of anticoagulants.
Introduced: 2/22/2019
Last Amend: 4/2/2019
Status: 4/3/2019-Re-referred to Com. on W., P., & W.
Location: 3/26/2019-A. W.,P. & W.
Summary: Current law regulates the use of pesticides and authorizes the Director of Pesticide Regulation to adopt regulations to govern the possession, sale, or use of any pesticide, as prescribed. Current law prohibits the use of any pesticide that contains one or more of specified anticoagulants in wildlife habitat areas, as defined. Existing law exempts from this prohibition the use of these pesticides for agricultural activities, as defined. Current law requires the director, and each county agricultural commissioner under the direction and supervision of the director, to enforce the provisions regulating the use of pesticides. This bill would create the California Ecosystems Protection Act of 2019 and expand this prohibition against the use of a pesticide containing specified anticoagulants in wildlife habitat areas to the entire state.

AB 1798 (Levine D) California Racial Justice Act: death penalty.
Introduced: 2/22/2019
Last Amend: 3/21/2019
Status: 3/25/2019-Re-referred to Com. on PUB. S.
Location: 3/21/2019-A. PUB. S.
Summary: Would prohibit a person from being executed pursuant to a judgment that was either sought or obtained on the basis of race if the court makes a finding that race was a significant factor in seeking or imposing the death penalty. The bill would provide that a finding that race was a significant factor would include statistical evidence or other evidence that death sentences were sought or imposed significantly more frequently upon persons of one race than upon persons of another race or that race was a significant factor in decisions to exercise preemptory challenges during jury selection.

SB 1 (Atkins D) California Environmental, Public Health, and Workers Defense Act of 2019.
Introduced: 12/3/2018
Status: 3/22/2019-Set for hearing April 9.
Location: 3/20/2019-S. N.R. & W.
Summary: Current state law regulates the discharge of air pollutants into the atmosphere. The Porter-Cologne Water Quality Control Act regulates the discharge of pollutants into the waters of the state. The California Safe Drinking Water Act establishes standards for drinking water and regulates drinking water systems. The California Endangered Species Act requires the Fish and Game Commission to establish a list of endangered species and a list of threatened species, and generally prohibits the taking of those species. This bill would require specified agencies to take prescribed actions regarding certain federal requirements and standards pertaining to air, water, and protected species, as specified.

SB 4 (McGuire D) Housing.
Introduced: 12/3/2018
Last Amend: 2/28/2019
Status: 4/4/2019-Set for hearing April 24.
Location: 4/2/2019-S. GOV. & F.
Summary: Would authorize a development proponent of a neighborhood multifamily project or eligible TOD project located on an eligible parcel to submit an application for a streamlined, ministerial approval process that is not subject to a conditional use permit. The bill would define a "neighborhood multifamily project" to mean a project to construct a multifamily unit of up to 2 residential dwelling units in a nonurban community, as defined, or up to 4 residential dwelling units in an urban community, as defined, that meets local height, setback, and lot coverage zoning requirements as they existed on July 1, 2019. The bill would define an "eligible TOD project" as a project located in an urban community, as defined, that meets specified height requirements, is located within 1/2 mile of an existing or planned transit station parcel or entrance, and meets other floor area ratio, density, parking, and zoning requirements.

SB 19 (Dodd D) Water resources: stream gages.
Introduced: 12/3/2018
Last Amend: 2/28/2019
Status: 4/8/2019-April 8 hearing: Placed on APPR. suspense file.
Location: 4/8/2019-S. APPR. SUSPENSE FILE
Summary: Would require the Department of Water Resources and the State Water Resources Control Board, upon an appropriation of funds by the Legislature, to develop a plan to deploy a network of stream gages that includes a determination of funding needs and opportunities for modernizing and reactivating existing gages and deploying new gages, as specified. The bill would require the department and the board, in consultation with the Department of Fish and Wildlife, the Department of Conservation, the Central Valley Flood Protection Board, interested stakeholders, and, to the extent they wish to consult, local agencies, to develop the plan to address significant gaps in information necessary for water management and the conservation of freshwater species.

SB 34 (Wiener D) Cannabis: donations.
Introduced: 12/3/2018
Last Amend: 4/4/2019
Status: 4/4/2019-Read second time and amended. Re-referred to Com. on APPR.
Location: 4/2/2019-S. APPR.
Summary: Current administrative law prohibits a retailer licensee from providing free cannabis goods to any person or allowing individuals who are not employed by the retailer to provide free cannabis goods to any person on the licensed premises. Current administrative law provides an exception to this prohibition for specified medicinal retailer and microbusiness licensees to provide access to medicinal cannabis patients who have difficulty accessing medicinal cannabis goods, as specified. This bill, the Dennis Peron and Brownie Mary Act, would similarly authorize those specified licensees to provide free cannabis or cannabis products to a medicinal cannabis

patient or the patient's primary caregiver if specified requirements are met, including that the cannabis or cannabis products otherwise meet specified requirements of MAUCRSA.

SB 45 (Allen D) Wildfire, Drought, and Flood Protection Bond Act of 2020.
Introduced: 12/3/2018
Last Amend: 4/4/2019
Status: 4/4/2019-Read second time and amended. Re-referred to Com. on GOV. & F.
Location: 4/3/2019-S. GOV. & F.
Summary: Would enact the Wildfire, Drought, and Flood Protection Bond Act of 2020, which, if approved by the voters, would authorize the issuance of bonds in the amount of $4,300,000,000 pursuant to the State General Obligation Bond Law to finance projects to restore fire damaged areas, reduce wildfire risk, create healthy forest and watersheds, reduce climate impacts on urban areas and vulnerable populations, protect water supply and water quality, protect rivers, lakes, and streams, reduce flood risk, protect fish and wildlife from climate impacts, improve climate resilience of agricultural lands, and protect coastal lands and resources.

SB 62 (Dodd D) Endangered species: accidental take associated with routine and ongoing agricultural activities: state safe harbor agreements.
Introduced: 1/3/2019
Last Amend: 4/3/2019
Status: 4/5/2019-Set for hearing April 22.
Location: 3/19/2019-S. APPR.
Summary: the California Endangered Species Act provides, until January 1, 2020, that the accidental take of candidate, threatened, or endangered species resulting from an act that occurs on a farm or a ranch in the course of otherwise lawful routine and ongoing agricultural activities is not prohibited by the act. This bill would extend this exception to January 1, 2024, and would limit this exception to an act by a person acting as a farmer or rancher, a bona fide employee of a farmer or rancher, or an individual otherwise contracted by a farmer or rancher.

SB 67 (McGuire D) Cannabis: temporary licenses.
Introduced: 1/8/2019
Last Amend: 3/21/2019
Status: 4/4/2019-Read third time. Urgency clause adopted. Passed. (Ayes 32. Noes 4.) Ordered to the Assembly. In Assembly. Read first time. Held at Desk.
Location: 4/4/2019-A. DESK
Summary: MAUCRSA, until January 1, 2020, authorizes a licensing authority to issue a provisional license to an applicant that holds, or held, a temporary license for the same premises and the same commercial cannabis activity, if specified conditions are met. Current law required the provisional license to be valid for 12 months and prohibits the provisional license from being renewed. This bill would, until September 15, 2019, revalidate an expired temporary license issued by the Department of Food and Agriculture, if the licensee submitted an application for an annual state license and application fees for the same premises and commercial cannabis activity for which the temporary license was issued, before the licensee's temporary license expiration date.

SB 69 (Wiener D) Ocean Resiliency Act of 2019.
Introduced: 1/9/2019
Last Amend: 4/1/2019
Status: 4/9/2019-Action From N.R. & W.: Do pass as amended.To APPR..
Location: 4/9/2019-S. APPR.
Summary: Current law requires the Fish and Game Commission to establish fish hatcheries for the purposes of stocking the waters of California with fish, and requires the Department of Fish and Wildlife to maintain and operate those hatcheries. This bill would require the department to undertake a pilot project to assess the effectiveness of parentage-based tagging, as defined, in improving the management of central valley Chinook salmon hatcheries and in rebuilding salmon runs and the California salmon fishing industry.

SB 182 (Jackson D) Local government: planning and zoning: wildfires.
Introduced: 1/29/2019
Last Amend: 3/28/2019
Status: 4/4/2019-Set for hearing April 10.
Location: 2/6/2019-S. GOV. & F.
Summary: Would require the safety element, upon the next revision of the housing element or the hazard mitigation plan, on or after January 1, 2020, whichever occurs first, to be reviewed and updated as necessary to include a comprehensive retrofit strategy, as specified. The bill would also require the planning agency to review and, if necessary, revise the safety element upon each revision of the housing element or local hazard mitigation plan, but not less than once every 8 years, to identify new information relating to retrofit updates applicable to the city or county that was not available during the previous revision of the safety element.

SB 183 (Borgeas R) Property: wild animals.
Introduced: 1/29/2019
Status: 2/6/2019-Referred to Com. on RLS.
Location: 1/29/2019-S. RLS.
Summary: Current law provides that animals that are wild by nature may be the subject of ownership while those animals are living only in specified circumstances.This bill would make nonsubstantive changes to that provision of law.

SB 195 (Nielsen R) Sierra Nevada Conservancy.
Introduced: 1/31/2019
Status: 2/13/2019-Referred to Com. on RLS.
Location: 1/31/2019-S. RLS.
Summary: Current law establishes the Sierra Nevada Conservancy and prescribes the functions and duties of the conservancy with regard to the preservation of specified lands in the Sierra Nevada Region, as defined. Current law makes specified findings and declarations relating to the importance and significance of the Sierra Nevada Region and the need to protect, conserve, restore, and enhance lands within the region.This bill would make nonsubstantive changes in those findings and declarations.

SB 198 (Bates R) California Environmental Quality Act: historical resources.
Introduced: 1/31/2019
Status: 2/13/2019-Referred to Com. on RLS.
Location: 1/31/2019-S. RLS.
Summary: CEQA provides that a project may have a significant effect on the environment if the project may cause a substantial adverse change in the significance of a historical resource. This bill would make nonsubstantive changes in the provision relating to historical resources.

SB 226 (Nielsen R) Watershed restoration: wildfires: grant program.
Introduced: 2/7/2019
Last Amend: 3/18/2019
Status: 4/9/2019-Action From N.R. & W.: Do pass.To RLS..
Location: 4/9/2019-S. RLS.
Summary: Current law authorizes the Natural Resources Agency and the California Environmental Protection Agency to jointly develop and submit to the Legislature a plan for forest and water restoration investments for the drainages that supply specified reservoirs. This bill would require the agency to develop and implement a watershed restoration grant program, as provided, for purposes of awarding grants to eligible counties, as defined, to assist them with watershed restoration on watersheds that have been affected by wildfire, as specified. The bill would require an eligible county receiving funds pursuant to the grant program to submit annually to the agency a report regarding projects funded by the grant program, as provided. The bill would make related legislative findings and declarations.

SB 230 (Caballero D) Law enforcement: use of deadly force: training: policies.
Introduced: 2/7/2019
Status: 2/21/2019-Referred to Com. on PUB. S.
Location: 2/21/2019-S. PUB. S.
Summary: Would require each law enforcement agency to maintain a policy that provides guidelines on the use of force, utilizing deescalation techniques and other alternatives to force when feasible, specific guidelines for the application of deadly force, and factors for evaluating and reviewing all use of force incidents, among other things. The bill would require each agency to make their use of force policy accessible to the public. By imposing additional duties on local agencies, this bill would create a state-mandated local program.

SB 243 (Borgeas R) San Joaquin River Conservancy.
Introduced: 2/11/2019
Status: 2/21/2019-Referred to Com. on RLS.
Location: 2/11/2019-S. RLS.
Summary: Current law establishes the San Joaquin River Conservancy and prescribes the functions and responsibilities of the conservancy with regard to the protection and conservation of public lands in the San Joaquin River Parkway, as described. Current law requires the conservancy to administer any funds appropriated to it and any revenue generated by member agencies of the conservancy for the parkway and contributed to the conservancy, and authorizes the conservancy to expend those funds for capital improvements, land acquisitions, or support of the conservancy's operations. This bill would make a nonsubstantive change in that provision requiring the conservancy to administer those funds.

SB 247 (Dodd D) Wildland fire prevention: vegetation: management.
Introduced: 2/11/2019
Last Amend: 3/14/2019
Status: 3/26/2019-Set for hearing April 10.
Location: 3/20/2019-S. E. U., & C.
Summary: Would require the Public Utilities Commission to establish a two-way balancing account for each electrical corporation for all costs incurred by the electrical corporation for vegetation management, prohibit the electrical corporation from diverting any revenue from the account to any activity other than vegetation management, and prohibit the electrical corporation from earning any profit on any revenue from the account. The bill would require the commission to ensure that an electrical corporation fully recovers all costs incurred to comply with the trim list requirements that would be adopted pursuant to the bill and all other reasonable vegetation management activity.

SB 253 (Dodd D) Cannella Environmental Farming Act of 1995: Environmental Farming Incentive Program.
Introduced: 2/11/2019
Last Amend: 3/14/2019
Status: 3/20/2019-Set for hearing April 23.
Location: 3/19/2019-S. N.R. & W.
Summary: The Cannella Environmental Farming Act of 1995 requires the Secretary of Food and Agriculture to convene the Scientific Advisory Panel on Environmental Farming, as prescribed, for the purpose of providing advice to the secretary on the implementation of the Healthy Soils Program and the State Water Efficiency and Enhancement Program and assistance to federal, state, and local government agencies on issues relating to the impact of agricultural practices on air, water, and wildlife habitat, as specified. This bill would additionally require the panel to assist government agencies to incorporate the conservation of natural resources and ecosystem services practices into agricultural programs.

SB 262 (McGuire D) Commercial fishing: landing fees: sea cucumbers.
Introduced: 2/12/2019
Last Amend: 3/18/2019

Status: 4/8/2019-From committee: Do pass. (Ayes 4. Noes 1.) (April 8).
Location: 3/26/2019-S. APPR.
Summary: Current law regulating commercial fishing imposes, or authorizes the imposition of, various license, permit, and registration fees. Current law requires specified persons to pay landing fees relating to the sale of fish quarterly to the Department of Fish and Wildlife, based on a rate schedule applicable to listed aquatic species. Existing law authorizes the department to assess a fee on persons growing aquaculture products on public lands and in public waters based on the price per pound of the products sold, not to exceed the rates provided in the rate schedule applicable to wild-caught aquatic species. This bill would make that landing fee rate schedule applicable to the 2020 calendar year, and require that the schedule be adjusted annually thereafter pursuant to that specified federal index.

SB 307 (Roth D) Water conveyance: use of facility with unused capacity.
Introduced: 2/15/2019
Status: 4/9/2019-Action From N.R. & W.: Do pass as amended.To APPR..
Location: 4/9/2019-S. APPR.
Summary: Current law prohibits the state or a regional or local public agency from denying a bona fide transferor of water from using a water conveyance facility that has unused capacity for the period of time for which that capacity is available, if fair compensation is paid for that use and other requirements are met. This bill would, notwithstanding that provision, prohibit a transferor of water from using a water conveyance facility that has unused capacity to transfer water from a groundwater basin underlying desert lands, as defined, that is in the vicinity of specified federal lands or state lands to outside of the groundwater basin unless the State Lands Commission, in consultation with the Department of Fish and Wildlife, finds that the transfer of the water will not adversely affect the natural or cultural resources of those federal and state lands.

SB 313 (Hueso D) Animals: prohibition on use in circuses.
Introduced: 2/15/2019
Last Amend: 3/28/2019
Status: 3/28/2019-From committee with author's amendments. Read second time and amended. Re-referred to Com. on N.R. & W.
Location: 2/28/2019-S. N.R. & W.
Summary: Current law regulates the taking and possession of birds, mammals, fish, reptiles, and amphibians, including the importation, transportation, possession, and live release of wild animals, as defined.This bill would prohibit a person from sponsoring, conducting, operating, or participating in a circus, as defined, that uses any animal other than a domestic dog, domestic cat, or horse.

SB 376 (Portantino D) Firearms: transfers.
Introduced: 2/20/2019
Last Amend: 3/25/2019
Status: 4/5/2019-Set for hearing April 22.
Location: 4/2/2019-S. APPR.
Summary: Current law generally prohibits the purchase or receipt of a firearm by, or sale, transfer, or loan of a firearm, to, a person who does not have a firearm safety certificate. Current law exempts from this requirement, the infrequent loan of a firearm. Existing law defines “infrequent” for purposes of this exemption to mean less than six handgun transactions per calendar year, or, for firearms other than handguns, an indefinite number of transactions that are “occasional and without regularity.” This bill would redefine “infrequent” to mean less than six firearm transactions per calendar year, regardless of the type of firearm, and no more than 50 total firearms within those transactions.

SB 395 (Archuleta D) Accidental taking and possession of wildlife: collision with a vehicle.
Introduced: 2/20/2019
Status: 3/13/2019-Set for hearing April 9.
Location: 2/28/2019-S. N.R. & W.
Summary: Would require the Department of Fish and Wildlife to adopt rules and regulations for the issuance of wildlife salvage permits through a user-friendly web portal to persons desiring to

recover, possess, use, or transport, for purposes of salvaging wild game meat for human consumption of, any deer, elk, antelope, or wild pig that has been accidentally killed as a result of a vehicle collision on a roadway within California. This bill would require that this permitting process be made available at no cost to the public.

SB 410 (Nielsen R) Hunting and fishing guides.
Introduced: 2/20/2019
Status: 2/28/2019-Referred to Com. on N.R. & W.
Location: 2/28/2019-S. N.R. & W.
Summary: Currentlaw requires a person who engages in the business of guiding or packing, or who acts as a guide for any consideration or compensation, to first obtain a guide license from the Department of Fish and Wildlife before engaging in those activities. Current law requires an application for a guide license to contain specified information and requires an applicant to submit proof of having obtained a surety bond in the amount of not less than $1,000 as a condition of receiving a license. Under current law, a guide license is valid from February 1 to January 31 of the succeeding year or, if issued after February 1, for the remainder of the license year. This bill would change the valid period of a guide license to the period of a calendar year, as provided, and would make related conforming changes.

SB 566 (Borgeas R) Fish and Game Commission.
Introduced: 2/22/2019
Status: 3/7/2019-Referred to Com. on RLS.
Location: 2/22/2019-S. RLS.
Summary: The California Constitution establishes the 5-member Fish and Game Commission, with members appointed by the Governor and approved by the Senate. Current statutory law states the intent of the Legislature to encourage the Governor and the Senate Committee on Rules to consider certain minimum qualifications in selecting, appointing, and confirming commissioners to serve on the commission. This bill would make a nonsubstantive change to this provision.

SB 621 (Glazer D) California Environmental Quality Act: court actions or proceedings: affordable housing projects.
Introduced: 2/22/2019
Last Amend: 3/28/2019
Status: 3/28/2019-From committee with author's amendments. Read second time and amended. Re-referred to Com. on EQ.
Location: 3/14/2019-S. E.Q.
Summary: Would require the Judicial Council, by July 1, 2020, to adopt a rule of court applicable to an action or proceeding brought to attack, review, set aside, void, or annul the certification of an environmental impact report for an affordable housing project, as defined, or the granting of an approval of an affordable housing project that requires the action or proceeding, including any potential appeals therefrom, to be resolved, to the extent feasible, within 270 days of the filing of the certified record of proceeding with the court. The bill would prohibit a court from staying or enjoining the construction or operation of an affordable housing project unless it makes certain findings.

SB 632 (Galgiani D) California Environmental Quality Act: exemption: Vegetation Treatment Program.
Introduced: 2/22/2019
Status: 4/8/2019-April 10 set for first hearing canceled at the request of author.
Location: 3/14/2019-S. E.Q.
Summary: Would, until a specified date, exempt from CEQA any activity or approval necessary for, or incidental to, actions that are consistent with the draft Program Environmental Impact Report for the Vegetation Treatment Program issued by the State Board of Forestry and Fire Protection in November of 2017.

SB 757 (Allen D) Fish and Game Code: name change.
Introduced: 2/22/2019
Status: 3/14/2019-Referred to Com. on RLS.

Location: 2/22/2019-S. RLS.
Summary: Current law establishes the Fish and Game Code.This bill would rename the Fish and Game Code as the Fish and Wildlife Code and would require that any reference to the Fish and Game Code in that code or any other code means the Fish and Wildlife Code.

SB 761

(Jones R) Forestry: exemptions: emergency notices: reporting.
Introduced: 2/22/2019
Status: 3/14/2019-Referred to Com. on RLS.
Location: 2/22/2019-S. RLS.
Summary: Current law authorizes a registered professional forester in an emergency to file, on behalf of a timber owner or operator, a specified emergency notice with the department that allows for the immediate commencement of timber operations. Current law requires the Department of Forestry and Fire Protection and State Board of Forestry and Fire Protection, in consultation with the Department of Fish and Wildlife and the State Water Resources Control Board, commencing December 31, 2019, and annually thereafter, to review and submit a report to the Legislature on the trends in the use of, compliance with, and effectiveness of, these exemptions and emergency notice provisions, as specified. This bill would make nonsubstantive changes in that reporting requirement.

SB 779

(Committee on Natural Resources and Water) Appropriation of water: change of point of diversion, place of use, or purpose of use.
Introduced: 2/27/2019
Status: 3/15/2019-Set for hearing April 23.
Location: 3/14/2019-S. N.R. & W.
Summary: The State Water Resources Control Board administers a water rights program pursuant to which the board grants permits and licenses to appropriate water. Current law authorizes an applicant, permittee, or licensee to change the point of diversion, place of use, or purpose of use from that specified in the application, permit, or license, upon permission of the board, as specified. Existing law after a hearing authorizes the board to grant or refuse as the facts warrant permission to change the point of diversion, place of use, or purpose of use. This bill would authorize an applicant, permittee, or licensee to change any other provision or condition from that specified in the application, permit, or license upon permission of the board.

SB 785

(Committee on Natural Resources and Water) Public resources: parklands, freshwater resources, and coastal resources.
Introduced: 3/11/2019
Status: 3/22/2019-Set for hearing April 23.
Location: 3/20/2019-S. N.R. & W.
Summary: Current law, until January 1, 2020, generally prohibits a person from possessing, importing, shipping, or transporting in the state, or from placing, planting, or causing to be placed or planted in any water within the state, dreissenid mussels, and authorizes the Director of Fish and Wildlife or the director's designee to engage in various enforcement activities with regard to dreissenid mussels. Among those activities, current law authorizes the director to conduct inspections of waters of the state and facilities located within waters of the state that may contain dreissenid mussels and, if those mussels are detected or may be present, order the closure of the affected waters or facilities to conveyances or otherwise restrict access to the affected waters or facilities, with the concurrence of the Secretary of the Natural Resources Agency. This bill would extend to January 1, 2030, the repeal date of those provisions.

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–HQ–ES–2018–0097; FXES11130900000C2–189–FF09E32000]

RIN 1018–BD60

Endangered and Threatened Wildlife and Plants; Removing the Gray Wolf (*Canis lupus*) From the List of Endangered and Threatened Wildlife

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service or USFWS), have evaluated the classification status of gray wolves (*Canis lupus*) currently listed in the contiguous United States and Mexico under the Endangered Species Act of 1973, as amended (Act). Based on our evaluation, we propose to remove the gray wolf from the List of Endangered and Threatened Wildlife. We propose this action because the best available scientific and commercial information indicates that the currently listed entities do not meet the definitions of a threatened species or endangered species under the Act due to recovery. The effect of this rulemaking action would be to remove the gray wolf from the Act's protections. This proposed rule does not have any effect on the separate listing of the Mexican wolf (*Canis lupus baileyi*) as endangered under the Act.

DATES: *Comment submission:* We will accept comments received or postmarked on or before May 14, 2019.

Public hearings: We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by April 29, 2019.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal: *http://www.regulations.gov.* In the Search box, enter Docket No. FWS–HQ–ES–2018–0097, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the Search panel on the left side of the screen under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on the blue ''Comment Now!'' box. If your comments will fit in the provided comment box, please use this feature of *http://www.regulations.gov,* as it is most compatible with our comment review procedures. If you attach your comments as a separate document, our preferred file format is Microsoft Word. If you attach multiple comments (such as form letters), our preferred format is a spreadsheet in Microsoft Excel.

(2) By hard copy: Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: Docket No. FWS–HQ–ES–2018–0097; U.S. Fish & Wildlife Service Headquarters, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments on *http://www.regulations.gov.* This generally means that we will post any personal information you provide us (see *Public Comments* below for more information).

FOR FURTHER INFORMATION CONTACT: Don Morgan, Chief, Branch of Delisting and Foreign Species, Ecological Services, U.S. Fish and Wildlife Service, Headquarters Office, MS: ES, 5275 Leesburg Pike, Falls Church, VA 22041–3803; telephone (703) 358–2444. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Purpose of the Regulatory Action

Why we need to publish a rule. Under the Act, if we determine that a species is no longer threatened or endangered throughout all or a significant portion of its range, we must publish in the **Federal Register** a proposed rule to remove the species from the Lists of Endangered and Threatened Wildlife and Plants in title 50 of the Code of Federal Regulations (50 CFR 17.11 and 17.12). We also must make a final determination on our proposal within 1 year thereafter. Removing a species from the List (''delisting'' it) can only be completed by issuing a rule.

This document proposes delisting gray wolves in the lower 48 United States and Mexico. This proposed rule assesses the best available information regarding the status of and threats to the species, and replaces our June 13, 2013, proposed rule to delist the gray wolf in the lower 48 United States and Mexico (78 FR 35664). This proposed rule does not have any effect on the separate listing of the Mexican wolf as endangered under the Act (80 FR 2487, January 16, 2015).

The basis for our action. Under the Act, we determine whether a species is an endangered or threatened species based on any one or more of five factors or the cumulative effects thereof: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence. We have determined that the gray wolf in the lower 48 United States and Mexico (except the Mexican wolf subspecies) no longer meets the definition of an endangered or threatened species under the Act.

Peer review. We will seek comments from independent specialists to ensure that our designation is based on scientifically sound data, assumptions, and analyses. We will invite these peer reviewers to comment on our listing proposal. Because we will consider all comments and information received during the comment period, our final determination may differ from this proposal.

Information Requested

Public Comments

We intend that any final action resulting from this proposal will be based on the best scientific and commercial data available and will be as accurate and as effective as possible. Therefore, we request comments or information from the public, concerned Tribal and governmental agencies, the scientific community, industry, or any other interested parties concerning this proposed rule. Comments should be as specific as possible.

As this proposal replaces our June 13, 2013, proposal to delist gray wolves in the lower 48 United States and Mexico (78 FR 35663), we ask that any comments previously submitted that are relevant to the status of wolves currently listed in the contiguous United States and Mexico, as analyzed in this rule, be resubmitted at this time. Comments must be submitted during the comment period for this proposed rule to be considered.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, will not meet the standard of best available scientific and commercial data. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is threatened or endangered must be made ''solely on the basis of the best scientific and commercial data available.''

You may submit your comments and materials by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via *http://www.regulations.gov,* your entire submission—including your personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *http://www.regulations.gov.*

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *http://www.regulations.gov* at Docket No. FWS–HQ–ES–2018–0097, or by appointment, during normal business hours at U.S. Fish and Wildlife Service Headquarters (see **FOR FURTHER INFORMATION CONTACT**).

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding scientific data and interpretations contained in this proposed rule. The purpose of peer review is to ensure that our decisions are based on scientifically sound data, assumptions, and analyses. We will invite these peer reviewers to comment during the public comment period on our proposed action; these comments will be available along with other public comments in the docket for this proposed rule.

We will consider all comments and information we receive during this comment period during our preparation of the final determination. Accordingly, the final decision may differ from this proposal.

Table of Contents

Previous Federal Actions

Gray wolves were originally listed as subspecies or as regional populations of subspecies in the contiguous United States and Mexico. Early listings were under legislative predecessors of the Act—the Endangered Species Preservation Act of 1966 and the Endangered Species Conservation Act of 1969. Later listings were under the Endangered Species Act of 1973. The **Federal Register** citations for all the rulemaking actions described in the following paragraphs are provided in table 1, below.

In 1978, we published a rule reclassifying the gray wolf as an endangered population at the taxonomic species level (*C. lupus*) throughout the contiguous United States and Mexico, except for the Minnesota gray wolf population, which was classified as threatened (table 1). At that time, we considered the gray wolves in Minnesota to be a listable entity under the Act, and we considered gray wolves in Mexico and the 48 contiguous United States other than Minnesota to be another listable entity (43 FR 9607 and 9610, respectively, March 9, 1978). The earlier subspecies listings thus were subsumed into the listings for the gray wolf in Minnesota and the gray wolf in the rest of the contiguous United States and Mexico.

The 1978 reclassification was undertaken to ''most conveniently'' address changes in our understanding of gray wolf taxonomy and protect all gray wolves in the lower 48 United States. In addition, we sought to clarify that the gray wolf was only listed south of the Canadian border.

The 1978 reclassification rule stipulated that ''biological subspecies would continue to be maintained and dealt with as separate entities'' (43 FR 9609), and offered ''the firmest assurance that [the Service] will continue to recognize valid biological subspecies for purposes of its research and conservation programs'' (43 FR 9610). Accordingly, we implemented three gray wolf recovery programs in three regions of the country—the northern Rocky Mountains, the southwestern United States, and the eastern United States—to establish and prioritize recovery criteria and actions appropriate to the unique local circumstances of the gray wolf (table 1). Recovery in two of these regions (northern Rocky Mountains and southwestern United States) required reintroduction of gray wolves in experimental populations (table 1),

while recovery in the third (eastern United States) relied on natural recolonization and population growth.

Between 2003 and 2015, we published several rules revising the 1978 contiguous United States and Mexico listings for *C. lupus* in an attempt to acknowledge taxonomy, comport with current policy and practices, and to recognize the biological recovery of gray wolves in the northern Rocky Mountains (NRM) and western Great Lakes (WGL) populations. Previous rules were challenged and subsequently invalidated or vacated by various courts based, in part, on their determinations that our distinct population segment (DPS) designations were legally flawed (table 1).

Of particular relevance to this proposed rule is our 2011 final rule, in which we recognized the expansion of the Minnesota wolf population by revising the entity to include all or portions of six surrounding States, identified the expanded population as the western Great Lakes DPS (WGL DPS), and revised the listings to remove the WGL DPS from the List due to recovery. Also in 2011, we published a final rule that implemented Section 1713 of Public Law 112–10, reinstating our 2009 delisting rule for the NRM DPS and, with the exception of Wyoming, removed gray wolves in that DPS from the List. In 2012, we finalized a rule removing gray wolves in Wyoming from the List. Subsequently, in 2013, we published a proposed rule to delist *C. lupus* in the remaining listed portions of the United States and Mexico outside of the delisted NRM and WGL DPSs, and keep Mexican wolf listed as an endangered subspecies, *C. l. baileyi* (table 1).

However, in 2014 the United States District Court for the District of Columbia vacated the final rule at 76 FR 81666 (December 28, 2011) that removed protections of the Act from the gray wolf in the western Great Lakes (table 1). The court's action was based, in part, on its conclusion that the Act does not allow the Service to use its authority to identify DPSs as ''species'' to remove the protections for part of an already listed species. The U.S. Court of Appeals disagreed, ruling in 2017 that the Service had the authority to designate a DPS from a larger listed entity and delist it in the same rule (table 1). That court nonetheless upheld the District Court's vacatur, concluding that the Service failed to reasonably analyze or consider two significant aspects of the rule: The impacts of partial delisting and historical range loss on the remainder of the listed entity.

Our 2012 decision to delist gray wolves in Wyoming was also vacated by the U.S. District Court for the District of Columbia. Because the 2013 proposal to delist the remaining listed portions of the gray wolf in the United States and Mexico relied in part on two subsequently vacated final rules, the 2011 WGL DPS rule as well as our 2012 rule delisting gray wolves in Wyoming, in 2015 we only finalized the portion of the rule listing the Mexican wolf as an endangered subspecies (table 1). In 2017, the D.C. Circuit reversed the district court's decision and reinstated the delisting of gray wolves in Wyoming. Thus, wolves are currently delisted in the entire northern Rocky Mountains area (figure 1).

As a result of the above actions, the *C. lupus* listings in 50 CFR 17.11 currently include: (1) *C. lupus* in Minnesota listed as threatened, and (2) *C. lupus* in all or portions of 44 U.S. States and Mexico, listed as endangered (figure 1). In the United States, this includes: all of Alabama, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Maryland, Maine, Michigan, Missouri, Mississippi, North Carolina, North Dakota, Nebraska, New Hampshire, New Jersey, Nevada, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Virginia, Vermont, West Virginia, and Wisconsin; and portions of Arizona, New Mexico, Oregon, Utah, and Washington (figure 1).

For additional information on these Federal actions and their associated litigation history refer to the relevant associated rules or the Previous Federal Actions sections of our recent gray wolf actions (see table 1).

TABLE 1—KEY FEDERAL REGULATORY ACTIONS UNDER THE ACT AND PREDECESSOR LEGISLATION [1] PERTAINING TO GRAY WOLF AND, WHERE APPLICABLE, OUTCOMES OF COURT CHALLENGES TO THESE ACTIONS

[E = Endangered Species, T = Threatened Species, DPS = Distinct Population Segment, NRM = Northern Rocky Mountains, WGL = Western Great Lakes]

Entity	Year of action	Type of action	Federal Register citation	Litigation history
C. l. lycaon	1967 [1]	List	32 FR 4001, March 11, 1967	
C. l. irremotus	1973 [1]	List	38 FR 14678, June 4, 1973	
C. l. lycaon	1974	List	39 FR 1171, January 4, 1974	
C. l. irremotus	1974	List	39 FR 1171, January 4, 1974	
C. l. baileyi	1976	List (E)	41 FR 17736, April 28, 1976	
C. l. monstrabilis [2]	1976	List (E)	41 FR 24064, June 14, 1976	
C. lupus in lower 48 U.S. (except Minnesota) & Mexico.	1978	Reclassify (E)	43 FR 9607, March 9, 1978 [3]	
C. lupus in Minnesota	1978	Reclassify (T)	43 FR 9607, March 9, 1978 [3]	
C. lupus	1978 (revised 1992)	Recovery Plan for Eastern Timber Wolf (eastern gray wolf).	n.a.	
C. lupus	1980 (revised 1987)	Recovery Plan for NRM Gray Wolf	n.a.	
C. lupus	1982 (revised 2017)	Recovery Plan for Mexican Gray Wolf (*C. l. baileyi*).	n.a.	
C. lupus	1994	Establish experimental population (southeastern Idaho, southern Montana, and Wyoming).	59 FR 60266, November 22, 1994	
C. lupus	1994	Establish experimental population (central Idaho & southwest Montana).	59 FR 60252, November 22, 1994	
C. lupus	1998	Establish experimental population (Arizona & New Mexico).	63 FR 1752, January 12, 1998	

TABLE 1—KEY FEDERAL REGULATORY ACTIONS UNDER THE ACT AND PREDECESSOR LEGISLATION [1] PERTAINING TO GRAY WOLF AND, WHERE APPLICABLE, OUTCOMES OF COURT CHALLENGES TO THESE ACTIONS—Continued

[E = Endangered Species, T = Threatened Species, DPS = Distinct Population Segment, NRM = Northern Rocky Mountains, WGL = Western Great Lakes]

Entity	Year of action	Type of action	Federal Register citation	Litigation history
C. lupus DPSs: ..... —Eastern DPS ..... —Western DPS ..... —Southwestern U.S. & Mexico DPS.	2003	Designate DPS & classify/reclassify as:. —Eastern DPS (T) ..... —Western DPS (T) ..... —Southwestern U.S. & Mexico DPS (E) Delist in unoccupied non-historical range.	68 FR 15804, April 1, 2003	Rule vacated (*Defenders of Wildlife* v. *Norton,* 354 F. Supp. 2d 1156 (D. Or. 2005); *National Wildlife Federation* v. *Norton,* 386 F. Supp. 2d 553 (D. Vt. 2005))
C. lupus WGL DPS	2007	Designate DPS & delist	72 FR 6052, February 8, 2007	Rule vacated (*Humane Society of the United States* v. *Kempthorne,* 579 F. Supp. 2d 7 (D.D.C. 2008))
C. lupus NRM DPS	2008	Designate DPS & delist	73 FR 10514, February 27, 2008	Rule vacated and remanded (*Defenders of Wildlife* v. *Hall,* 565 F. Supp. 2d 1160 (D. Mont. 2008))
C. lupus DPSs: ..... —WGL DPS ..... —NRM DPS	2008	Reinstatement of protections—NRM & WGL DPSs.	73 FR 75356, December 11, 2008	
C. lupus WGL DPS	2009	Designate DPS & delist	74 FR 15070, April 2, 2009	Rule vacated (*Humane Society of the United States* v. *Salazar,* 1:09–CV–1092–PLF (D.D.C. 2009))
C. lupus NRM DPS (except Wyoming).	2009	Designate DPS & delist (except in Wyoming).	74 FR 15123, April 2, 2009	Rule vacated (*Defenders of Wildlife* v. *Salazar,* 729 F. Supp. 2d 1207 (D. Mont. 2010))
C. lupus WGL DPS	2009	Reinstatement of protections—WGL.	74 FR 47483, September 16, 2009.	
C. lupus NRM DPS	2010	Reinstatement of protections—NRM DPS.	75 FR 65574, October 26, 2010 ..	
C. lupus NRM DPS	2011	Reissuance of 2009 NRM DPS delisting rule (as required by Public Law 112–10-The Department of Defense and Full-Year Continuing Appropriations Act, 2011).	76 FR 25590, May 5, 2011	
C. lupus WGL DPS	2011	Revise 1978 listing, designate DPS & delist.	76 FR 81666, December 28, 2011	Rule vacated (*Humane Society of the U.S.* v. *Jewell,* 76 F. Supp. 3d 69, 110 (D.D.C. 2014)) Vacatur upheld on appeal (*Humane Society of the U.S.* v. *Zinke,* 865 F.3d 585 (D.C. Cir. 2017))
C. lupus in Wyoming	2012	Delist in Wyoming	77 FR 55530, September 10, 2012.	Rule vacated (*Defenders of Wildlife* v. *Jewell,* 68 F. Supp. 3d 193 (D.D.C. 2014) Vacatur reversed on appeal (*Defenders of Wildlife* v. *Zinke,* 849 F.3d 1077 (D.C. Cir. 2017))
C. lupus in lower 48 U.S. (except NRM & WGL DPSs) and Mexico.	2013	Propose delist in lower 48 U.S. & list *C. l. baileyi* (E); status review of wolves in Pacific Northwest.	78 FR 35664, June 13, 2013	
C. l. baileyi	2015	List E	80 FR 2488, January 16, 2015	
C. l. baileyi	2015	Revised 1998 *C. lupus* experimental population and associated it with *C. l. baileyi* listing.	80 FR 2512, January 16, 2015	
C. lupus WGL DPS and *C. lupus* in Wyoming.	2015	Reinstatement of protections—WGL DPS & Wyoming.	80 FR 9218, February 20, 2015 ...	
C. lupus in Wyoming	2017	Reinstatement of 2012 delisting—Wyoming.	82 FR 20284, May 1, 2017	

[1] Action taken under the Endangered Species Preservation predecessor legislation (Endangered Species Act of 1966, Endangered Species Conservation Act of 1969).

[2] Later subsumed into *C. l. baileyi* due to taxonomic changes.

[3] In this rule we also identified critical habitat in Michigan and Minnesota and promulgated special regulations under section 4(d) of the Act for operating a wolf-management program in Minnesota. The special regulation was later modified (50 FR 50793, December 12, 1985).

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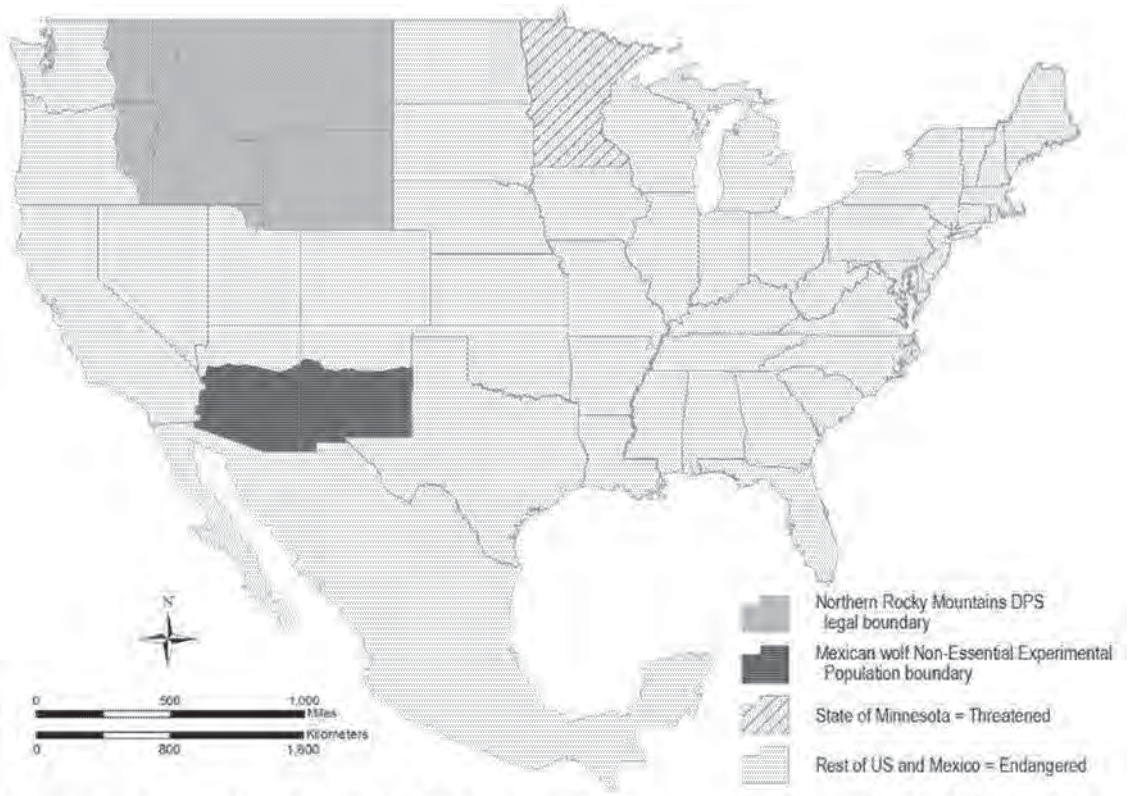

Figure 1: Current legal status of *C. lupus* under the Act. Northern Rocky Mountains DPS and Mexican wolf Non-Essential Experimental Population are not part of the listed entities. All map lines are approximations; see 50 CFR 17.11 and 17.84(k) for exact boundaries.

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General Background

The 1978 Reclassification

When the gray wolf (*C. lupus*) was reclassified in March 1978 (replacing multiple subspecies listings with two *C. lupus* population listings as described further in Previous Federal Actions), it had been extirpated from much of its historical range in the contiguous United States. Although the 1978 reclassification listed two gray wolf entities (a threatened population in Minnesota and an endangered population throughout the rest of the contiguous United States and Mexico), these listings were not predicated upon a formal DPS analysis, because the reclassification predated the November 1978 amendments to the Act, which revised the definition of ''species'' to include distinct population segments of vertebrate fish or wildlife, and our 1996 DPS Policy.

As indicated in Previous Federal Actions, the 1978 reclassification was employed as an approach of convenience to ensure the gray wolf was protected wherever it was found (as described in 47 FR 9607, March 9, 1978) in the lower 48 States and Mexico, rather than an indication of where gray wolves actually existed or where gray wolf recovery would occur. Thus, the 1978 reclassification resulted in inclusion of large areas of the contiguous United States where gray wolves were extirpated, as well as the mid-Atlantic and southeastern United States—west to central Texas and Oklahoma—an area that is generally accepted not to be within the historical range of *C. lupus* (Young and Goldman 1944, pp. 413–416, 478; Nowak 1995, p. 395, fig. 20). While this generalized approach to the listing appropriately protected dispersing wolves throughout the historical range of *C. lupus* in the United States and Mexico and facilitated recovery of the northern Rocky Mountains and western Great Lakes populations, it also erroneously included areas outside the species' historical range and was misread by some members of the public as an expression of a larger gray wolf recovery effort not required by the Act and never intended by the Service. In fact, as discussed below (see *National Wolf Strategy*), our recovery efforts have consistently focused on reestablishing wolf populations in specific areas of the country.

National Wolf Strategy

We first described our national wolf strategy in our May 5, 2011, proposed rule to revise the List for the gray wolf in the eastern United States (76 FR 26086). This strategy was intended to: (1) Lay out a cohesive and coherent approach to addressing wolf conservation needs, including protection and management, in accordance with the Act's statutory framework; (2) ensure that actions taken for one wolf population do not cause unintended consequences for other populations; and (3) be explicit about the role of historical range in the conservation of extant wolf populations. Included in this strategy is the precept that, in order to qualify for any type of listing or delisting action, wolf entities must conform to the Act's definition of ''species,'' whether as taxonomic species or subspecies or as distinct population segments.

Our May 5, 2011, proposed rule states that our strategy focuses on conservation of four extant gray wolf entities being considered for

classification actions: (1) The western Great Lakes population, (2) the northern Rocky Mountains population, (3) the southwestern population of Mexican wolves, and (4) gray wolves in the Pacific Northwest. All of our actions to date are consistent with this focus. As stated above (see Previous Federal Actions), we published final rules delisting the NRM DPS (except for Wyoming), WGL DPS, and Wyoming portion of the NRM DPS in 2011 and 2012, and published a final rule listing the Mexican wolf (*C. l. baileyi*) separately as endangered in 2015. However, as indicated in Previous Federal Actions, our 2011 final rule designating and delisting the WGL DPS was subsequently vacated.

In addition to the rules described above, we completed a status review for gray wolves in the Pacific Northwest (western Washington and western Oregon) in 2013 (table 1). We determined that these wolves are not discrete, under our DPS policy, from wolves in the NRM DPS (see 78 FR 35707–35713) and, therefore, are not a valid listable entity under the Act. Wolves in the Pacific Northwest are a mix of individuals derived from wolves in the northern Rocky Mountains and Canada (or both) and represent the expanding fronts of these populations (78 FR 35707–35713, USFWS 2018, pp. 4, 14–15, 23). Since publication of our 2013 status review, wolves have also expanded into northern California. Wolves in northern California are not discrete from those in the Pacific Northwest based on documented movement of wolves between Oregon and California (USFWS 2018, pp. 14–15). Therefore, wolves in western Washington, western Oregon, and northern California are not a valid DPS because they are not discrete from the NRM DPS.

Approach for This Proposed Rule

The Entities Addressed in This Rule

In this proposed rule, we consider the status of the gray wolf within the geographic boundaries of the two currently listed *C. lupus* entities to determine whether these wolves should remain on the List in their current status, be reclassified, or be removed from the List. These two currently listed entities are: (1) *C. lupus* in Minnesota, and (2) *C. lupus* in the lower 48 United States and Mexico outside of Minnesota, the NRM DPS (Montana, Idaho, Wyoming, eastern third of Washington and Oregon, and north-central Utah), and the area covered by the experimental population area for *C. l. baileyi* (the designated area in which the subspecies is being re-introduced; see 63 FR 1752, January 12, 1998). These two entities are currently listed as threatened and endangered, respectively.

While our past status reviews have focused on *C. lupus* DPSs and taxonomic units that align with our national wolf strategy (see table 1), this status review considers the current *C. lupus* listed entities described above. We do this:

(1) To address the Court of Appeals concerns with our 2011 final rule delisting the WGL DPS, specifically, concern pertaining to the impacts of partial delisting on the remainder of the already-listed species (see Previous Federal Actions);

(2) To avoid a rulemaking that conflicts with multiple court opinions regarding our prior attempts to designate and delist wolf DPSs (see table 1); and

(3) Because, with the exception of *C. l. baileyi,* which is listed separately as endangered wherever found (see Previous Federal Actions), the taxonomy of *C. lupus* is complex, controversial, and unresolved (USFWS 2018, pp. 1–4; also see *How We Address Taxonomic Uncertainties in this Rule,* below).

How We Address the C. lupus Entities in This Rule

The two currently listed gray wolf entities are vestiges of a 40-year-old action (the 1978 reclassification (see Background)). Our knowledge of wolf biology and taxonomy has vastly changed since then. Additionally, our previous efforts to revise the listed entities have not withstood judicial scrutiny (see Previous Federal Actions). Our policies and practices pertaining to listable entities have also changed since the 1978 reclassification. As a result, these entities do not conform with our current policies and standard practice. Specifically: (1) These two entities are not discrete from one another under our current policy on vertebrate distinct population segments (DPSs) (61 FR 4722, February 7, 1996); (2) the listing for the larger entity includes areas known to overlap with the range of the separately listed gray wolf subspecies *C. l. baileyi;* and (3) wolves currently listed in the western United States are not discrete from the recovered Northern Rocky Mountains population, which we removed from the List in 2009 (table 1).

(1) Lack of Discreteness of the Two *C. lupus* Listed Entities

Under the Act we can list a species, subspecies, or vertebrate DPS. Neither of the two entities currently on the List represents an entire species or subspecies, thus to comply with the statute, these listings must be DPSs. Our 1996 DPS policy specifies that a vertebrate population must be both discrete and significant to qualify as a DPS (61 FR 4722–4725; February 7, 1996). To qualify as ''discrete,'' a population must be ''markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors'' (61 FR 4725). However, as indicated, the populations in these two entities are no longer discrete (U.S. Fish and Wildlife Service (USFWS) 2018, pp. 22–23). Therefore, because it is clear that neither entity would qualify as a DPS under our 1996 DPS policy (61 FR 4725), we consider the conservation status of the two listed wolf entities as one combined entity in this proposed rule. We refer to the combined entity simply as ''the gray wolf entity'' throughout this proposed rule.

(2) *C. l. baileyi* listing

As indicated above (see Previous Federal Actions), in 2015 we revised the listing for gray wolf by reclassifying the subspecies *C. l. baileyi* as a separately listed entity with the status of endangered, wherever found. Although the rulemaking does not include language expressly excluding *C. l. baileyi* from the previously listed *C. lupus* entity, we indicated in our 2015 final rule listing the subspecies that the effect of the regulation was to revise the List by making a separate entry for the Mexican wolf (80 FR 2488, 2511, January 16, 2015). Therefore, because we already assessed the status of, and listed, the Mexican wolf separately, we do not consider individuals or populations of *C. l. baileyi* in this proposed rule. In geographical terms, we do not consider wolves occurring in Mexico and within the experimental population area in this proposed rule. *Canis lupus baileyi* is the only subspecies known to occur in these areas, and we have no information suggesting that other gray wolves occur in these areas.

(3) Lack of Discreteness of Western Wolves Within and Outside the Gray Wolf Entity

In the coastal States of the western United States, wolves within the gray wolf entity occur in an area comprising western Oregon, western Washington, and northern California. These wolves are part of the expanding fronts (or edges) of the recovered and delisted wolf population in the NRM DPS and wolves crossing into the United States

from British Columbia, Canada (USFWS 2018, p. 22). While wolves in the west coast States may not be discrete from the NRM DPS and wolves in British Columbia, Canada, we do not combine wolves in the west coast States with those in the NRM DPS and British Columbia, Canada, for the purpose of our analysis (as we combined the two currently listed entities) because wolves in the NRM DPS and British Columbia, Canada, are not currently listed under the Act. Therefore, we do not consider wolves occurring in either of these locations in this proposed rule except to provide context, where appropriate, in our discussions of wolves comprising the gray wolf entity.

How We Address Taxonomic Uncertainties in This Rule

The taxonomy and evolutionary history of wolves in North America are complex and controversial, particularly with respect to the taxonomic assignment of wolves in the northeastern United States and portions of the Great Lakes region (eastern wolves) (see *Taxonomy of Gray Wolves in North America*). Available information indicates ongoing scientific debate and a lack of resolution on the taxonomy of eastern wolves. Some scientists consider eastern wolves to be a distinct species, *C. lycaon;* some consider them gray wolves (*C. lupus*); and some consider them the product of hybridization between gray wolves and coyotes (USFWS 2018, p. 1). Further, none of these viewpoints is more widely accepted by the scientific community.

For the purposes of this proposed rule, we consider eastern wolves to be members of the species *C. lupus* because there is not clear support for a recognizable and independent evolved eastern wolf species. Therefore, in our assessment of the status of the gray wolf entity, we include eastern wolves and eastern wolf range that occurs within the geographical boundaries of the gray wolf entity.

We note that in our 2013 proposed rule to delist wolves in the lower 48 United States and Mexico (table 1), we accepted the conclusions of Chambers *et al.* (2012, entire) on the taxonomy of eastern wolves and recognized eastern wolves as the distinct species *C. lycaon.* However, peer reviewers of our 2013 proposed rule indicated that Chambers *et al.* was not universally accepted and our rule did not represent the best available science (National Center for Ecological Analysis and Synthesis 2014, entire). Also, new information published on the topic since publication of our 2013 rule indicates the taxonomy of eastern wolves continues to be controversial and unresolved (USFWS 2018, pp. 1–2). Finally, the uncertainty of the existence of a separate species is reflected in the fact that *C. lycaon* is not recognized by authoritative taxonomic organizations such as the American Society of Mammalogists or the International Commission on Zoological Nomenclature.

Scientists also disagree on the taxonomic assignment of wolves in the southeastern United States generally recognized as ''red wolves.'' However, we recognize the red wolf as the species *C. rufus,* and note that it is listed as endangered where found (32 FR 4001, March 11, 1967). We do not consider red wolves further in this rule, and the red wolf listing is not affected by this proposal.

Summary of Our Approach

In this proposed rule, we assess the status of gray wolves occurring within the geographic area outlined by the two currently listed gray wolf (*C. lupus*) entities combined (figure 1), but we do not include in our assessment individuals or populations of the Mexican gray wolf (*C. l. baileyi*) (wolves that occur in Mexico and the nonessential experimental population area in the southwestern United States) as these wolves are separately listed as an endangered subspecies (80 FR 2488, January 16, 2015). Further, for the purposes of this proposed rule, we consider any eastern wolves within the geographic boundaries of the two currently listed gray wolf entities to be members of the species *C. lupus.* As stated previously, this proposed rule supersedes the June 13, 2013, proposed rule to delist *C. lupus* in the remaining listed portions of the United States and Mexico outside of the delisted NRM and WGL (78 FR 35663).

Species Information

We provide detailed background information on gray wolves in the United States in a separate Gray Wolf Biological Report (see USFWS 2018, entire). This document can be found along with this proposed rule at *http://regulations.gov* in Docket No. FWS–HW–ES–2018–0097 (see *Supplemental Documents*). We summarize relevant information from this report below. For additional information, including sources of the information presented below, see USFWS (2018, entire) and references therein.

Biology and Ecology

Gray wolves are the largest wild members of the dog family and have a broad circumpolar range. They are highly territorial, social animals that live and hunt in packs. They are well adapted to traveling fast and far in search of food, and catching and eating large mammals. In North America they are primarily predators of medium to large mammals, including deer, elk, and other species.

Gray wolves are habitat generalists. They can successfully occupy a wide range of habitats and are not dependent on wilderness for their survival. An inadequate prey density and a high level of human persecution appear to be the only factors that limit habitat suitability and gray wolf distribution. Thus, virtually any area that has sufficient prey and adequate protection from persecution can be suitable habitat for gray wolves.

Wolf populations are remarkably resilient as long as food supply and regulation of human-caused mortality are adequate. In the absence of high levels of anthropogenic influences, wolf populations are generally believed to be regulated by the distribution and abundance of prey on the landscape, though density-dependent, intrinsic mechanisms (*e.g.,* social strife, territoriality, disease) may limit populations when ungulate densities are high. Where harvest occurs, high levels of reproduction and immigration can compensate for high mortality rates. Pack social structure is very adaptable—breeding members can be quickly replaced from within or outside the pack, and pups can be reared by another pack member should their parents die. Consequently, wolf populations can rapidly overcome severe disruptions, such as pervasive human-caused mortality or disease. Wolf populations can increase rapidly after severe declines if the source of mortality is reduced. Also, the species' dispersal capabilities allow a wolf population to quickly expand and colonize nearby areas, even areas separated by broad expanses of unsuitable habitat.

Taxonomy of Gray Wolves in North America

The taxonomy of the genus *Canis* in North America has a complex and contentious history, particularly with respect to two generally recognized phenotypes (morphological forms) that occur in eastern North America: The ''red wolf'' and ''eastern wolf.'' As indicated above (see *How We Address Taxonomic Uncertainties in this Rule*), we continue to recognize the red wolf as the species *C. rufus* and do not discuss the taxonomy of the species further in this rule (for more information, see our 2018 Red Wolf Species Status Assessment). We discuss the eastern wolf further below.

The ''eastern wolf'' has been the source of perhaps the most significant disagreement on North American canid taxonomy among scientists. The ''eastern wolf'' has been variously described as a species, a subspecies of gray wolf, an ecotype of gray wolf, or the product of hybridization between gray wolves and coyotes. Hybridization is widely recognized to have played, and to continue to play, an important role among ''eastern wolves,'' with varying views on the role of hybridization between ''eastern wolves'' and coyotes, ''eastern wolves'' and gray wolves, and gray wolves and coyotes. Minnesota appears to be the western edge of a hybrid zone between western gray wolves and eastern wolves—wolves in western Minnesota appear to be gray wolves both morphologically and genetically while wolves in eastern Minnesota and much of the Great Lakes area appear to be ''eastern wolf,'' introgressed with western gray wolf to varying degrees.

No controversy exists regarding the number of wolf species in western North America—all are widely recognized as gray wolves (*C. lupus*). However, the science pertaining to gray wolf subspecies designations, unique evolutionary lineages, ecotypes, and admixture of formerly isolated populations continues to develop and remains unresolved. Even so, genetic studies indicate that wolves in Washington include individuals from the northern Rocky Mountains, individuals from British Columbia, and individuals of mixed ancestry. Wolves currently occupying Oregon and California are derived from dispersers from the northern Rocky Mountains.

Range and Population Trends Prior to 1978 Reclassification

Historical Range of the Gray Wolf Entity

We view the historical range to be the range of gray wolves within the gray wolf entity at the time of European settlement. We determined that this timeframe is appropriate because it precedes the major changes in range in response to excessive human-caused mortality (USFWS 2018, pp. 7–11).

At the time of the 1978 reclassification, the historical range of the gray wolf was generally believed to include most of North America and, consequently, most of the gray wolf entity. In the lower 48 United States, they were reportedly absent from parts of California, the arid deserts and mountaintops of the western United States, and parts of the eastern United States. However, some authorities question the species' historical absence in parts of California. In addition, long-held differences of opinion exist among scientists regarding the precise boundary of the gray wolf's historical range in the eastern United States. Some believe the range of gray wolves extended as far south as southern Georgia while others believe it did not extend into the southeast at all. The southeastern and mid-Atlantic States are generally recognized as being within the historical range of the red wolf, but it is not known how much range overlap historically occurred between these two species. Because of the various scientific positions on gray wolf species and range, the historical extent of gray wolf range for much of the gray wolf entity in the eastern United States remains uncertain.

Based on our review of the best available information, we view the historical range of the gray wolf within the gray wolf entity to follow that presented in Nowak (1995) and depicted in figure 2. This includes all areas within the gray wolf entity except western California, a small portion of southwestern Arizona, and the southeastern United States (see figure 2 and USFWS 2018, pp. 7–11).

While some authorities question the absence of gray wolves in parts of California, limited preserved physical evidence of wolves in California exists. Therefore, we rely on early reports of wolves in the State that describe the species as occurring in the northern and Sierra Mountain regions of California. Further, while recognizing that the extent of overlap of *C. rufus* and *C. lupus* ranges is unknown, because the southeastern United States are generally recognized as within the range of *C. rufus,* we consider it to be generally outside the range of *C. lupus.* However, we acknowledge that the historical range of *C. lupus* is uncertain and the topic of continued debate among scientists.

Historical Abundance of the Gray Wolf Entity

Historical abundance of gray wolves within the gray wolf entity is largely unknown. Based on the reports of European settlers, gray wolves were common in much of the West. While historical (at the time of European settlement) estimates are notoriously difficult to verify, one study estimates that hundreds of thousands of wolves occurred in the western United States and Mexico. In the Great Lakes area, there were an estimated 4,000 to 8,000 in Minnesota, 3,000 to 5,000 in Wisconsin, and fewer than 6,000 in Michigan. No estimates are available for historical abundance in the Northeast.

Historical Trends in Range and Abundance for the Gray Wolf Entity

Gray wolf range and numbers throughout the gray wolf entity declined significantly during the 19th and 20th centuries as a result of killing of wolves by humans through poisoning, unregulated trapping and shooting, and government-funded wolf-extermination efforts. By the time subspecies were first listed under the Act in 1974 (table 1), the gray wolf had been eliminated from most of its historical range within the lower 48 United States, including within most of the gray wolf entity.

Distribution, and Abundance of the Gray Wolf Entity at the Time of the 1978 Reclassification

By the time gray wolf subspecies were listed under the Act in 1974 (table 1), the species occurred in only a small fraction of its historical range. Aside from a few scattered individuals, wolves occurred in only two places within the gray wolf entity (and the entire lower 48 United States). A population persisted in northeastern Minnesota, and a small, isolated group of about 40 wolves occurred on Isle Royale, Michigan. The Minnesota wolf population was the only major U.S. population in existence outside Alaska at this time and numbered about 1,000 individuals. While the Minnesota population was small compared to historical numbers and range within the lower 48 United States, it had not undergone a significant decline since about 1900. By 1978, when several gray wolf subspecies were consolidated into a single lower 48 United States/Mexico listing and a separate Minnesota listing under the Act, the gray wolf population in Minnesota had increased to an estimated 1,235 wolves in 138 packs (in the winter of 1978–79) and had an estimated range of 14,038 square miles (mi^2) (36,500 square kilometers (km^2)) (figure 2). Although it was suspected that wolves inhabited Wisconsin at this time, it was not until 1979 that wolf presence was confirmed in the State.

Current Distribution and Abundance of the Gray Wolf Entity

The vast majority of wolves within the gray wolf entity now exist as a large, stable or growing metapopulation (partially isolated set of subpopulations) of more than 4,400 individuals that is broadly distributed across the northern portions of three States in the Great Lakes area. This metapopulation is also connected, via documented dispersals, to the large and expansive population of about 12,000–14,000 wolves in eastern Canada. As a result, gray wolves in the

Great Lakes area do not function as an isolated metapopulation of 4,400 individuals across three States, but rather as part of a much larger metapopulation that spans across three States of the United States and two Provinces of Canada.

In addition to the metapopulation in the Great Lakes area, as of 2017, three breeding pairs and four packs with no documented reproduction occur within the gray wolf entity in Oregon, Washington, and California. These wolves originated from large populations of approximately 15,000 wolves in western Canada and about 1,700 wolves in the northern Rocky Mountains. Effective dispersal has been documented among California, Oregon, and Washington as well as between these States and other northern Rocky Mountains States and Canada. Thus, wolves in the Pacific coast States are an extension of the metapopulation of wolves in western Canada and the northern Rocky Mountains.

Finally, a number of lone long-distance dispersing wolves have been documented outside core populations of the Great Lakes area and western United States since the early 2000s. Confirmed records of individual wolves have been reported from North Dakota, South Dakota, Utah, Colorado, Nevada, Missouri, Indiana, Illinois, Nebraska, and Kansas. The total number of confirmed records in each of these States, since the early 2000s, ranges from one in Nevada to at least 27 in North Dakota, with the latter also having an additional 45 probable but unverified reports.

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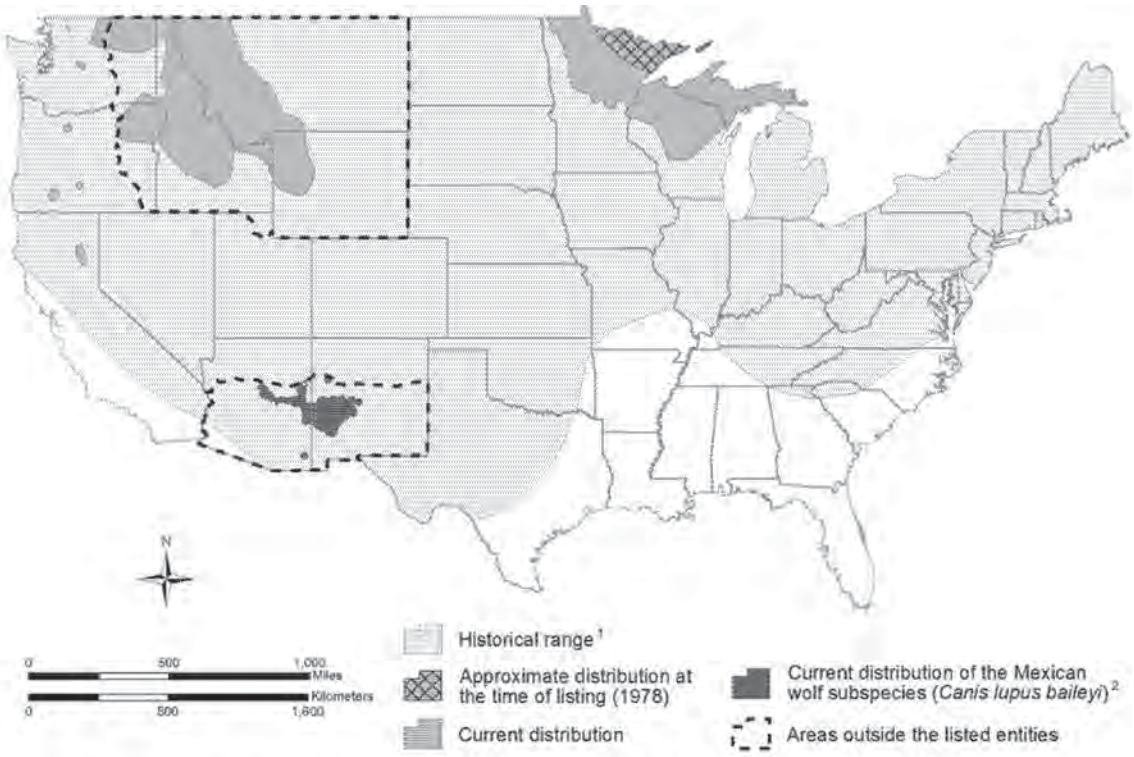

Figure 2. Historical range and current distribution of the gray wolf (*Canis lupus*) within the gray wolf entity. [1] Based on Nowak (1995)—recognizing that the exact extent of historical range is uncertain, we chose Nowak (1995) as the historical range boundary in the east to encompass the largest reasonable historical distribution in the lower 48 United States. [2] U.S. portion of range only.

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Gray Wolf Recovery Plans and Recovery Implementation

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Recovery plans are non-regulatory documents that identify site-specific management actions that may be necessary to achieve conservation and survival of the species. They also identify objective, measurable criteria (recovery criteria) which, when met, would result in a determination that the species should be removed from the List. Methods for monitoring recovery progress may also be included in recovery plans.

The Act does not describe recovery in terms of the proportion of historical range that must be occupied by a species, nor does it ever allude to restoration throughout the entire historical range as a conservation purpose. In fact, the Act itself does not contain the phrase ''historical range.'' Thus, the Act does not require us to restore the gray wolf (or any other species) to all of its historical range or any specific percentage of currently suitable habitat. For some species, expansion of their distribution or abundance may be necessary to achieve recovery, but the amount of expansion is driven by a species' biological needs affecting viability (ability to sustain

populations in the wild over time) and sustainability, not by an arbitrary percent of a species' historical range or currently suitable habitat. Many other species may be recovered in portions of their historical range or currently suitable habitat by removing or addressing the threats to their continued existence. And some species may be recovered by a combination of range expansion and threats reduction. There is no uniform definition for recovery and how recovery must be achieved.

As indicated in Previous Federal Actions, following our 1978 reclassification, we drafted recovery plans and implemented recovery programs for gray wolves in three regions of the contiguous United States (table 1). Wolves in one of these regions—*C. l. baileyi,* in the southwestern United States and Mexico—were recently listed separately as an endangered subspecies and are not considered in this rule (see Approach for this Proposed Rule). Wolves in another of these regions—the northern Rocky Mountains—have recovered and were delisted (table 1). We discuss recovery of wolves in the third region—the eastern United States—as it relates to the status of the gray wolf entity, below. We did not develop a recovery plan for wolves in the U.S. west coast States because we did not identify this area as necessary to the recovery of the species following our 1978 reclassification. We have not since developed a recovery plan for these wolves because we determined in our 2013 status review that they are biologically part of (although outside the legal boundary of) an already recovered and delisted population (see *National Wolf Strategy*).

Recovery Criteria

There are many paths to accomplish recovery of a species, and recovery may be achieved without all recovery criteria being fully met. We use recovery criteria in concert with evidence that threats have been minimized sufficiently and populations have achieved long-term viability to determine when a species can be reclassified from endangered to threatened or delisted. Recovery of a species is a dynamic process requiring adaptive management that may, or may not, fully follow the guidance provided in a recovery plan. Recovery plans, including recovery criteria, are subject to change based upon new information and are revised accordingly and when practicable. In a similar sense, implementation of planned actions is subject to changing information and availability of resources. We have taken these considerations into account in the following discussion.

The 1978 Recovery Plan (hereafter Recovery Plan) and the 1992 Revised Recovery Plan for the Eastern Timber Wolf (hereafter Revised Recovery Plan) were developed to guide recovery of the eastern timber wolf subspecies. Those recovery plans contain the same two recovery criteria, which are meant to indicate when recovery of the eastern timber wolf throughout its historical range in the eastern United States has been achieved. The first recovery criterion states that the survival of the wolf in Minnesota must be assured. We, and the Eastern Timber Wolf Recovery Team (Peterson *in litt.* 1997, 1998, 1999a, 1999b), have concluded that this recovery criterion remains valid. It addresses a need for reasonable assurances that future State, tribal, and Federal wolf management and protection will maintain a viable recovered population of wolves within the borders of Minnesota for the foreseeable future.

Although the recovery criteria identified in the Recovery Plan predate identification of the conservation biology principles of representation (conserving the adaptive genetic diversity of a taxon), resiliency (ability to withstand demographic and environmental variation), and redundancy (sufficient populations to provide a margin of safety), those principles were incorporated into the recovery criteria. The Recovery Team insisted that the remnant Minnesota wolf population be maintained and protected to achieve wolf recovery in the eastern United States. Maintenance of the Minnesota wolf population is vital in terms of representation because these wolves include both western gray wolves and wolves that are admixtures of western gray wolves and eastern wolves. In other words, they contain the genetic components of both western gray wolves and eastern wolves. The successful growth of the remnant Minnesota population has maintained and maximized the representation of that genetic diversity among wolves in the Great Lakes area.

Maintenance of the Minnesota wolf population is also vital in terms of resiliency. Although the Revised Recovery Plan did not establish a specific numerical criterion for the Minnesota wolf population, it did identify, for planning purposes only, a population goal of 1,251–1,400 animals for that Minnesota population (USFWS 1992, p. 28). A population of this size not only increases the likelihood of maintaining its genetic diversity over the long term, but also reduces the adverse impacts of unpredictable demographic and environmental events. Furthermore, the Revised Recovery Plan recommends a wolf population that is spread across about 40 percent of Minnesota (Zones 1 through 4) (USFWS 1992, p. 28), adding a geographic component to the resiliency of the Minnesota wolf population.

The second recovery criterion in the Recovery Plan states that at least one viable wolf population should be reestablished within the historical range of the eastern timber wolf outside of Minnesota and Isle Royale, Michigan (USFWS 1992, pp. 24–26). The reestablished population enhances both the resiliency and redundancy of the Great Lakes metapopulation.

The Recovery Plan provides two options for reestablishing this second population. If it is an isolated population, that is, located more than 100 miles (mi) (160 kilometers (km)) from the Minnesota wolf population, the second population should consist of at least 200 wolves for at least 5 years, based upon late-winter population estimates, to be considered viable. Late-winter estimates are made at a time when most winter mortality has already occurred and before the birth of pups, thus, the count is made at the annual low point of the population. Alternatively, if the second population is located within 100 mi (160 km) of a self-sustaining wolf population (for example, the Minnesota wolf population), it should be maintained at a minimum of 100 wolves for at least 5 years, based on late-winter population estimates, to be considered viable. A nearby second population would be considered viable at a smaller size because it would be geographically close enough to exchange wolves with the Minnesota population (that is, they would function as a metapopulation), thereby bolstering the smaller second population both genetically and numerically.

The original Recovery Plan did not specify where in the eastern United States the second population should be reestablished. Therefore, the second population could have been established anywhere within the triangular Minnesota-Maine-Florida area covered by the Recovery Plan and the Revised Recovery Plan, except on Isle Royale (Michigan) or within Minnesota. The Revised Recovery Plan identified potential gray wolf reestablishment areas in northern Wisconsin, the Upper Peninsula of Michigan, the Adirondack Forest Preserve of New York, a small area in eastern Maine, and a larger area of northwestern Maine and adjacent northern New Hampshire (USFWS

1992, pp. 56–58). Neither the 1978 nor the 1992 recovery criteria suggest that the establishment of gray wolves throughout all or most of what was thought to be its historical range in the eastern United States, or to all of the identified potential reestablishment areas, is necessary to achieve recovery under the Act.

In 1998, the Eastern Timber Wolf Recovery Team clarified the application of the recovery criterion for the second population to the wolf population that had developed in northern Wisconsin and the adjacent Upper Peninsula of Michigan. This second population is less than 100 mi (160 km) from the Minnesota wolf population. The Recovery Team recommended that the numerical recovery criterion for the Wisconsin-Michigan population be considered met when consecutive late-winter wolf surveys document that the population equals or exceeds 100 wolves (excluding Isle Royale wolves) for the 5 consecutive years between the first and last surveys (Peterson *in litt.* 1998).

Recovery Progress

Wolves in the Great Lakes area greatly exceed the recovery criteria (USFWS 1992, pp. 24–26) for (1) a secure wolf population in Minnesota, and (2) a second population outside Minnesota and Isle Royale consisting of 100 wolves for 5 successive years. Based on the eight surveys conducted since 1998, the wolf population in Minnesota has exceeded 2,000 individuals over the past 20 years, and populations in Michigan and Wisconsin have exceeded 100 individuals every year since 1996 (USFWS 2018, appendix 1). Based on the criteria set by the Eastern Wolf Recovery Team in 1992 and reaffirmed in 1997 and 1998 (Peterson *in litt.* 1997, *in litt.* 1998), this region contains sufficient wolf numbers and distribution to ensure the long-term survival of the gray wolf entity.

The maintenance and expansion of the Minnesota wolf population has allowed for the preservation of the genetic diversity that remained in the Great Lakes area when its wolves were first protected in 1974. Furthermore, the Wisconsin-Michigan wolf population far exceeds the numerical recovery criterion even for a completely isolated second population. Therefore, even in the unlikely event that this two-State population were to become totally isolated and wolf immigration from Minnesota and Ontario completely ceased, it would still remain a viable wolf population for the foreseeable future, as defined by the Revised Recovery Plan (USFWS 1992, pp. 25–26). Finally, each of the wolf populations in Wisconsin and Michigan has exceeded 200 animals for about 20 years, so if either were somehow to become isolated, they would remain viable, and each State has committed to manage its wolf population at or above viable population levels. The wolf's numeric and distributional recovery criteria in the Great Lakes area have been met.

Historical Context of Our Analysis

When reviewing the current status of a species, it is important to understand and evaluate the effects of lost historical range on the viability of the species in its current range. In fact, when we consider the status of a species in its current range, we are considering whether, without the species' lost historical range, the species is endangered or threatened. Range reduction may result in: Reduced numbers of individuals and populations; changes in available resources (such as food) and, consequently, range carrying capacity; changes in demographic characteristics (survival, reproductive rate, metapopulation structure, etc.); and changes in genetic diversity and gene flow. These in turn can increase a species' vulnerability to a wide variety of threats, such as habitat loss, restricted gene flow, or having all or most of its populations affected by a catastrophic event such as a hurricane, fire, or disease outbreak. In other words, past range reduction can reduce the redundancy, resiliency, and representation of a species in its remaining range, such that a species may meet the definition of an ''endangered species'' or ''threatened species'' under the Act. Thus, loss of historical range is not necessarily determinative of a species' status, but must be considered in the context of all factors affecting a species. In addition to considering the effects that loss of historical range has had on the current and future viability of the species, we must also consider the causes of that loss of historical range. If the causes of the loss are still continuing, then that loss is also relevant as evidence of the effects of an ongoing threat.

As indicated above, gray wolves historically occupied most of the range of the gray wolf entity (see Historical Range). The gray wolf range of the gray wolf entity began receding after the arrival of Europeans as a result of deliberate killing of wolves by humans and government funded bounty programs aimed at eradication (USFWS 2018, pp. 7–11). Further, many historical habitats were converted into agricultural land (Paquet and Carbyn 2003, p. 483), and natural food sources such as deer and elk were reduced, eliminated, or replaced with domestic livestock, which can become anthropogenic food sources for gray wolves (Young 1944 *in* Fritts *et al.* 1997, p. 8). The resulting reduction in range and population were dramatic—by the 1970s gray wolves occupied only a small fraction of their historical range (figure 2). Although the range of the gray wolf in the gray wolf entity has significantly expanded since 1978, its size and distribution remain below historical levels. Today, gray wolves within the gray wolf entity exist as a metapopulation spread across northern Minnesota, Michigan, and Wisconsin, and a small number of colonizing wolves in the west coast United States (USFWS 2018, pp. 22–23) (figure 2).

The alterations to gray wolf historical numbers and populations within the gray wolf entity increased the vulnerability of the gray wolf entity to a wide variety of threats that would not be at issue without such massive range reduction. Some of these threats were identified in the 1978 reclassification (43 FR 9607, March 9, 1978), including reduction in available food (prey) resources, and direct killing by humans. In addition to these considerations, in this proposed rule we also consider availability of suitable habitat, disease and parasites, and climate change. We analyze these potential threats to the gray wolf entity below under Summary of Factors Affecting the Species.

While range reduction may also result in changes in genetic diversity and gene flow, or cause changes in population demographics, we do not address genetic diversity or demographics of the gray wolf entity below because we are not aware of any information indicating that these are potential threats to wolves in the gray wolf entity. Wolves in the entity appear to be genetically and demographically healthy. Not only do they include wolves of differing and mixed genetic origin, but they exist as part of larger metapopulations—adverse effects resulting from genetic drift, demographic shifts, and local environmental fluctuations can be countered by influxes of individuals and their genetic diversity from other subpopulations of the metapopulation.

Summary of Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for adding species to, reclassifying species on, or removing species from the Federal List of Endangered and

Threatened Wildlife (List). We may determine a species to be an endangered species or threatened species due to one or more of the five factors described in section 4(a)(1) of the Act: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or manmade factors affecting its continued existence. Listing actions may be warranted based on any of these five factors, singly or in combination. We must consider these same five factors in reclassifications of species (changing the status from threatened to endangered or vice versa), and removing a species from the List (delisting) because it is no longer endangered or threatened (50 CFR 424.11(c), (d)). For species that are already listed as endangered or threatened, this analysis of threats is an evaluation of threats that existed at the time of listing, threats currently facing the species, and the threats that are reasonably likely to affect the species in the foreseeable future, and the impact of the removal or reduction of the Act's protections following a delisting or downlisting (*i.e.,* reclassification from endangered to threatened).

For the purposes of this proposed rule, we define the ''foreseeable future'' to be the extent to which, given the amount and substance of available data, we can anticipate events or effects, or reliably extrapolate threat trends that relate to the status of the gray wolf entity. It took a considerable length of time for public attitudes and regulations to result in a social climate that promoted and allowed for wolf recovery within the gray wolf entity. The length of time over which this shift occurred, and the ensuing stability in those attitudes, gives us confidence that this social climate will persist. Also, the Great Lakes States, which contain the vast majority of wolves within the gray wolf entity, have had a solid history of cooperating with and assisting in wolf recovery and have made a commitment, through legislative actions, to continue these activities. Washington, Oregon, and California are also committed to conserving wolves as demonstrated by development of management plans and laws and regulations that protect wolves. We are not aware of any information indicating that the commitment of the Great Lakes States and west coast States to gray wolf conservation will change and conclude that this commitment will continue. When evaluating the available information, with respect to foreseeable future, we take into account reduced confidence as we forecast further into the future. Finally, we note that there is a proposed revision to 50 CFR part 424 that creates a regulatory framework for the phrase ''foreseeable future.'' This proposal is not a departure from how we have implemented the phrase, but rather is meant to codify the framework we have been implementing. Thus, while we are not bound to the proposed revised regulations because they are not final, our interpretation of ''foreseeable future'' in this rule is consistent with them.

In considering what factors might constitute threats, we must look beyond the exposure of the species to a particular factor to evaluate whether the species may respond to the factor in a way that causes actual impacts to the species. If there is exposure to a factor and the species responds negatively, the factor may be a threat, and during the status review, we attempt to determine how significant a threat it is. The threat is significant if it drives or contributes to the risk of extinction of the species, such that the species warrants listing as endangered or threatened as those terms are defined by the Act. However, the mere identification of factors that could affect a species negatively may not be sufficient to compel a finding that the species warrants listing. The information must include evidence sufficient to suggest that the potential threat is likely to materialize and that it has the capacity (*i.e.,* it should be of sufficient magnitude and extent) to affect the species' status such that it meets the definition of an endangered species or threatened species under the Act.

Gray wolves that occur in the gray wolf entity are currently listed as endangered under the Act, except those wolves in Minnesota, which are listed as threatened. In this analysis we evaluate threat factors currently facing the gray wolf entity and those that are reasonably likely to have a negative effect on the viability of wolf populations in the gray wolf entity if the protections of the Act were not in place. Our analysis of threat factors below does not consider the potential for effects to *C. lupus* in areas where the species has been extirpated—rather, effects are considered in the context of the present population. As explained in our significant portion of the range (SPR) final policy (79 FR 37578; July 1, 2014), we take into account the effect lost historical range may have on the current and future viability of a species in the range it currently occupies, and also whether the causes of that loss are evidence of ongoing or future threats to the species. We do this through our analysis of factors affecting the species. A species' current condition reflects the effects of historical range loss and, because threat factors are evaluated in the context of the species' current condition, historical range contraction may affect the outcome of our analysis.

Based on our review of the best available scientific and commercial information, we have identified several factors that could potentially be significant threats to the gray wolf entity. We summarize our analysis of these factors, and factors identified at the time of listing, below. We considered and evaluated the best available scientific and commercial data for our analyses.

Human-Caused Mortality

Human-caused mortality was identified as the main factor causing the decline of gray wolves at the time of listing (43 FR 9611, March 9, 1978), and an active eradication program is the sole reason that wolves were extirpated from their historical range in the United States (Weaver 1978, p. i). European settlers attempted to eliminate the wolf entirely, primarily due to the threat or reality of attacks on livestock, and the U.S. Congress passed a wolf bounty that covered the Northwest Territories in 1817. Bounties on wolves subsequently became the norm for States across the species' range. For example, in Michigan, an 1838 wolf bounty became the ninth law passed by the First Michigan Legislature; this bounty remained in place until 1960. A Wisconsin bounty was instituted in 1865 and was repealed about the time wolves were extirpated from the State in 1957. Minnesota maintained a wolf bounty until 1965. As the first provisional governments in the Pacific Northwest region were formed, they too enacted wolf bounties (Hampton 1997, pp. 107–108).

Protection of the gray wolf under the Act and State endangered-species statutes prohibited the intentional killing of wolves except under very limited circumstances, such as in defense of human life, for scientific or conservation purposes, or under special regulations intended to reduce wolf depredations of livestock or other domestic animals. Aside from the reintroduction of wolves into portions of the northern Rocky Mountains, the regulation of human-caused wolf mortality is the primary reason wolf numbers have significantly increased and their range has expanded since the mid-to-late 1970s.

Two Minnesota studies provide some limited insight into the extent of human-caused wolf mortality before and after the species' listing. On the basis of bounty data from a period that predated wolf protection under the Act by 20 years, Stenlund (1955, p. 33) found an annual human-caused mortality rate of 41 percent. Fuller (1989, pp. 23–24) provided 1980–86 data from a north-central Minnesota study area and found an annual human-caused mortality rate of 29 percent, a figure that includes 2-percent mortality from legal depredation-control actions. Drawing conclusions from comparisons of these two studies, however, is difficult due to the confounding effects of habitat quality, exposure to humans, prey density, differing time periods, and vast differences in study design. Nonetheless, these figures provide clear support for the contention that human-caused mortality decreased significantly once the wolf became protected under the Act.

Humans kill wolves for a number of reasons. In locations where people, livestock, and wolves coexist, some wolves are killed to resolve conflicts with livestock and pets (Fritts *et al.* 2003, p. 310; Woodroffe *et al.* 2005, pp. 86–107, 345–347). Occasionally, wolves are killed accidentally (*e.g.,* wolves are hit by vehicles, mistaken for coyotes and shot, caught in traps set for other animals, or subject to accidental capture-related mortality during conservation or research efforts) (Bangs *et al.* 2005, p. 346). A few wolves have been killed by people who stated that they believed their physical safety was being threatened. Many wolf killings, however, are intentional, illegal, and never reported to authorities.

The number of illegal killings is difficult to estimate and impossible to accurately determine because they generally occur with few witnesses. Illegal killing was estimated to make up 70 percent of the total mortality rate in a north-central Minnesota wolf population and 24 percent in the northern Rocky Mountains population (Liberg *et al.* 2011, pp. 3–5). Liberg *et al.* (2011, pp. 3–5) suggest more than two-thirds of total poaching may go undetected, and that illegal killing may pose a threat to wolves; however, poaching has not prevented population resurgence in either the Great Lakes area or the northern Rocky Mountains, as evidenced by population growth in those areas.

Vehicle collisions contribute to wolf mortality rates throughout their range in the lower 48 United States. This type of mortality is expected to rise with increasing wolf populations and as wolves colonize areas with more human development and a denser network of roads and vehicle traffic; however, mortalities due to vehicle collisions will likely constitute a small proportion of total mortalities.

Each of the States in the current range of gray wolves in the contiguous United States conduct scientific research and monitoring of wolf populations. Even the most intensive and disruptive of these activities (anesthetizing for the purpose of radio-collaring) involves a very low rate of mortality for wolves (73 FR 10542, February 27, 2008). We expect that capture-related mortality during wolf monitoring, nonlethal control, and research activities will remain below three percent of the wolves captured, and will have an insignificant impact on population dynamics.

We are unaware of any wolves that have been removed from the wild solely for educational purposes in recent years. Wolves that are used for such purposes are typically privately held captive-reared offspring of wolves that were already in captivity for other reasons. However, States may get requests to place wolves that would otherwise be euthanized in captivity for research or educational purposes. Such requests have been and will continue to be rare, would be closely regulated by the State wildlife-management agencies through the requirement for State permits for protected species, and would not substantially increase human-caused wolf mortality rates.

Other sources of human-caused mortality include intentional and legal actions, such as lethal depredation control and killing wolves in defense of human life or property. Although most wolf-human conflicts are solved using nonlethal methods, in a few instances lethal control is warranted to control a wolf to protect human life and property. The number of wolves killed for this purpose is small. For example, from 2004 to 2014, State or Federal agents killed 26 wolves for these purposes in the State of Michigan (an average of around 0.5 percent of the population each year) (Roell *et al.* 2010, p. 9; Beyer *in litt.* 2018). In the western States, since the first pack was confirmed in Washington in 2008, one wolf has been killed by a private individual who claimed self-defense. Although the number of wolves killed in defense of human life and property may be slightly higher in areas with greater human density and may increase after delisting as authority for this action expands (see Post-delisting Management), overall this type of mortality is rare and is not expected to have a significant impact on wolf populations.

Lethal control of depredating wolves was authorized in Minnesota while wolves have been listed (under the authority of a regulation (50 CFR 17.40(d)) under section 4(d) of the Act), but such control was not authorized in Michigan or Wisconsin, except for the several years when such control was authorized under a permit from the USFWS or while wolves were delisted under previous actions. Lethal control of depredating wolves is not authorized in the listed portion of Oregon, Washington, or in California. The Minnesota wolf-depredation-control program euthanized from 20 (in 1982) to 262 (in 2015) wolves annually, and averaged between 2.2 to 7.6 percent of the wolf population annually. During the times wolves were listed and depredation control was the primary means of management in the State, the Minnesota wolf population continued to grow or remain stable while experiencing these levels of lethal control. During the times that lethal control of depredating wolves was conducted in Wisconsin and Michigan, there was no evidence of resulting adverse impacts to the maintenance of a viable wolf population in those States. In Wisconsin, a total of 256 wolves were killed for depredation control in the State, including 46 legally shot by private landowners, during the 59 months that wolves were delisted in the State. A total of 50 wolves were killed by the Michigan Department of Natural Resources (MI DNR) and the U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA–APHIS), Wildlife Services in response to depredation events during that time period. Following delisting, wolf depredation control in Wisconsin and Michigan would again occur, and be carried out according to their State management plans. We anticipate the level of mortality due to depredation control that would take place would be similar to what was observed during those times. See the Post-delisting Management section for a more detailed discussion of legal control of problem wolves (primarily for depredation control).

Regulated public harvest is another form of human-caused mortality that has occurred in the Great Lakes area during periods when wolves were delisted and will likely occur in Minnesota, Wisconsin, and Michigan if wolves are delisted again. Using an adaptive-management approach that adjusts harvest based on population estimates and trends, the initial objectives of States may be to lower wolf

populations then manage for sustainable populations, similar to how States manage all other game species. See the Post-delisting Management section for a more detailed discussion of legal harvest.

Regulation of human-caused mortality has significantly reduced the number of wolf mortalities caused by humans, and although illegal and accidental killing of wolves is likely to continue with or without the protections of the Act, at current levels those mortalities have had little impact on wolf populations. Legal human-caused mortality, primarily in the form of lethal depredation control and regulated harvest, will increase if wolves are delisted, as these are the primary human-caused mortality factors that State agencies can manipulate to achieve management objectives. However, the high reproductive potential of wolves and the innate behavior of wolves to disperse and locate social openings allows wolf populations to withstand relatively high rates of human-caused mortality.

We note that the principle of compensatory mortality was previously believed to occur in wolf populations. This means that human-caused mortality is not simply added to ''natural'' mortality, but rather replaces a portion of it. Creel and Rotella (2010) reexamined this concept with regard to wolves and found that, contrary to the previously held belief, wolf population growth declined as human-caused mortality increased (Creel and Rotella 2010, p. 3). Their study concludes that wolves can be harvested within limits, but that human-caused mortality was strongly additive in total mortality (Creel and Rotella 2010, p. 6).

The wolf population in the northern Rocky Mountains States of Idaho, Montana, and Wyoming provides a good example of the effects of increased human-caused mortality on population growth rates. From 1995 to 2008, wolf populations increased an average of 23 percent annually (range: 9 percent to 50 percent; USFWS *et al.* 2016, table 6b), while from 1999 to 2008, human-caused mortality removed an average of approximately 12 percent of the minimum estimated population each year (range: 7 percent to 16 percent; see USFWS *et al.* 2000–2009). Between 2009 and 2015, some or all of the northern Rocky Mountains States (dependent upon the Federal status of wolves) instituted fair-chase wolf hunting seasons with the objective of slowing or reversing population growth while continuing to maintain wolf populations well above federal recovery requirements in their respective States. During those years when legal harvest occurred, human-caused mortality increased to an average of 29 percent of the minimum estimated population (range: 23 percent to 36 percent; see USFWS *et al.* 2010, 2012–2016), while the annual growth rate declined to an average of approximately 1 percent annually (range: -7 percent to 4 percent; see USFWS *et al.* 2010, 2012–2016). Where harvest occurs, the species' high levels of reproduction and immigration can compensate for mortality rates of 17 percent to 48 percent (USFWS 2018, p. 6). Thus, although 2009 to 2015 is a relatively short time period from which to draw inferences, the population trends observed in the Northern Rocky Mountains suggest that the northern Rocky Mountains wolf population may be able to sustain an approximate 30 percent annual human-caused mortality rate while continuing to maintain a stable to slightly increasing population.

The States of Minnesota, Michigan, and Wisconsin have committed to continue to regulate human-caused mortality so that it does not reduce the wolf population below recovery level and have adequate laws and regulations to fulfill those commitments and ensure that the wolf population in the Great Lakes area remains above recovery levels (See Post-delisting Management). Washington, Oregon, and California are also committed to conserving wolves as demonstrated by development of management plans and laws and regulations that protect wolves. Furthermore, each post-delisting management entity (State, Tribal, and Federal) has experienced and professional wildlife staff to ensure those commitments can be accomplished.

Effects on Wolf Social Structure

Human-caused mortality of reproductive gray wolves could negatively affect gray wolf populations because wolves have a complex social system in which usually only the dominant male and female in a pack breed. Consequently, the death of one or both of the breeders may negatively affect the pack (by leading to pack dissolution) and the population as a whole (by slowing or reducing population growth). However, studies indicate these effects are context-dependent and that the availability of replacement breeders and timing of mortality can moderate the consequences of breeder loss (Borg *et al.* 2014, entire; Brainerd *et al.* 2008, entire). In populations that are at or near carrying capacity, where breeder replacement and subsequent reproduction occurs relatively quickly, population growth rate is largely unaffected by breeder loss (Borg *et al.* 2014, pp. 6–7). Large colonizing populations (> 75 wolves) have similar times to breeder replacement and subsequent reproduction as populations at or near carrying capacity, while small recolonizing populations (≤75 wolves) take about twice as long to replace breeders and subsequently reproduce (Brainerd *et al.* 2008, pp. 89, 93). Therefore, the effects of breeder loss may be greatest on small recolonizing gray wolf populations. Studies also indicate that mortality of breeding gray wolves is more likely to lead to pack dissolution and reduced reproduction when mortality occurs during the breeding season (Borg *et al.* 2014, p. 8) and when pack sizes are small (Borg *et al.* 2014, pp. 5–6; Brainerd *et al.* 2008, p. 94).

Gray wolf pack social structure is very adaptable and resilient. Breeding members can be quickly replaced from either within or outside the pack, and pups can be reared by another pack member should their parents die (USFWS 2018, p. 6). Consequently, wolf populations can rapidly overcome severe disruptions, such as pervasive human-caused mortality or disease. Although we acknowledge that breeder loss can and will occur in the future regardless of Federal status, we conclude that the effects of breeder loss on wolf populations (or the gray wolf entity) as a whole are likely to be minimal as long as adequate regulatory mechanisms are in place to ensure sufficient population size is maintained.

The Role of Public Attitudes

In our 1978 rule reclassifying wolves, we indicated that regulations prohibiting the killing of wolves, even wolves that may be attacking livestock and pets, such as the Federal regulations in place at that time in Minnesota, may work against gray wolves by creating an adverse public attitude toward the species. We acknowledge that public attitudes towards wolves vary with demographics, change over time, and can affect human behavior toward wolves, including poaching (illegal killing) of wolves (see the following studies and reviews: Kellert 1985, 1990, 1999; Nelson and Franson 1988; Kellert *et al.* 1996; Wilson 1999; Browne-Nuñez and Taylor 2002; Williams *et al.* 2002; Manfredo *et al.* 2003; Naughton-Treves *et al.* 2003; Schanning 2009; Mertig 2004; Chavez *et al.* 2005; Schanning and Vazquez 2005; Beyer *et al.* 2006; Hammill 2007; Treves *et al.* 2009; Wilson and Bruskotter 2009; Treves and Martin 2011; Treves *et al.* 2013; Madden and McQuinn 2014). However, the factors that affect people's attitudes and

behaviors toward wolves are not well understood (Treves and Bruskotter 2014, entire; Treves *et al.* 2013, p. 316 and references therein; also see Olson *et al.* 2014, entire and Chapron and Treves 2016, entire). Thus, it is unclear how delisting and the changes in wolf management subsequent to delisting, such as implementation of wolf harvests, may affect attitudes, human behavior and, ultimately, wolf mortality.

We expect that some segments of the public will be more tolerant of wolf management at the State level because it may be perceived by some as more flexible than Federal regulation, whereas other segments may continue to prefer Federal management due to a perception that it is more protective. State wildlife agencies have professional staff dedicated to disseminating accurate, science-based information about wolves and wolf management within their respective States. In addition, several States have convened advisory committees to engage stakeholders in discussing and addressing conflicts related to wolves (for example, Washington (*https://wdfw.wa.gov/about/advisory/wag/*) and Wisconsin (*https://dnr.wi.gov/topic/WildlifeHabitat/wolf/committee.html*)). As the status and management of the gray wolf evolves, continued collaboration between managers and researchers to monitor public attitudes toward wolves and their management will be necessary.

Human-Caused Mortality Summary

Despite human-caused mortalities of wolves, wolf populations have continued to increase in both numbers and range. Wolf population growth will likely slow as densities increase in suitable habitat. Wolves are less likely to persist in more unfavorable habitats due to depredation management, illegal killing, incidental mortality (for example, vehicle collision), natural mortality (disease, starvation, and intraspecific aggression), and other means. Once wolf populations become established, we should expect to see populations fluctuate around an equilibrium resulting from fluctuations in birth and mortality rates.

Minnesota, Wisconsin, and Michigan will utilize adaptive management to respond to wolf population increases or decreases to maintain populations at sustainable levels well above management objectives. State management plans in these three states that would be implemented following delisting manage for a minimum wolf population of 1,600 in Minnesota, 250 in Wisconsin (with a management goal of 350), and 200 in Michigan. These minimum population numbers are well above Federal recovery requirements defined in the Eastern Timber Wolf Recovery Plan. As wolf population numbers are currently much higher in each of these three States, we can expect to see some reduction in wolf populations in the Great Lakes areas if they are delisted as States implement lethal depredation control and begin to institute wolf hunting seasons with the objective of slowing or reversing population growth. However, the ultimate goal of these three States is to maintain wolf populations well above Federal recovery requirements in their respective States.

The 2010 State management plan for Oregon and the 2016 plan for California do not include population-management goals (Oregon Department of Fish and Wildlife (ODFW) 2010, p. 27; California Department of Fish and Wildlife (CDFW) 2016a, p. 12); however, this is likely to be addressed in the forthcoming Oregon plan revision as the draft plan revision currently suggests that 300 wolves are the ''minimum population management threshold'' for the State (ODFW 2017, p. 17). While the 2011 Washington State management plan does not include population-management goals, it includes recovery objectives intended to ensure the reestablishment of a self-sustaining population of wolves in Washington (Wiles *et al.* 2011, p. 9; also see *Post-delisting Management in the West*). In these States, wolf populations will likely be managed to ensure progress towards recovery objectives while also minimizing livestock losses caused by wolves.

Habitat and Prey Availability

Gray wolves are habitat generalists (Mech and Boitani 2003, p. 163) and once occupied or transited most of the United States, except the southeast. However, much of the historical range of gray wolves (Chambers *et al.* 2012, pp. 34–42) in the contiguous United States has been modified due to human use. While lone wolves can travel through, or temporarily live, almost anywhere (Jimenez *et al.* 2017, p. 1), large portions of gray wolf historical range is no longer suitable habitat to support wolf packs (Oakleaf *et al.* 2006, p. 559; Carroll *et al.* 2006, p. 32, Mladenoff *et al.* 1995, p. 287). Much of the area that wolves currently occupy corresponds to what is considered ''suitable'' wolf habitat in the lower 48 States as modeled by Oakleaf *et al.* (2006, entire), Carroll *et al.* (2006, entire), Mladenoff (1995, entire), and Mladenoff *et al.* (1999, entire). It is also expected that wolves will continue to recolonize areas of the Pacific Northwest where suitable habitat has been identified (Maletzke *et al.* 2015, entire; ODFW 2015, entire). We consider suitable habitat as forested terrain containing adequate wild ungulate populations (elk, white-tailed deer, and mule deer) to support a wolf population. Suitable habitat has minimal roads and human development, as human access to areas inhabited by wolves can result in wolf mortality.

Great Lakes Area: Suitable Habitat

Various researchers have investigated habitat suitability for wolves in the central and eastern portions of the United States. Most of these efforts have focused on using a combination of human density, density of agricultural lands, deer density or deer biomass, and road density, or have used road density alone to identify areas where wolf populations are likely to persist or become established (Mladenoff *et al.* 1995, pp. 284–285; 1997, pp. 23–27; 1998, pp. 1–8, 1999; pp. 39–43; Harrison and Chapin 1997, p. 3; 1998, pp. 769–770; Wydeven *et al.* 2001, pp. 110–113; Erb and Benson 2004, p. 2; Potvin *et al.* 2005, pp. 1661–1668; Mladenoff *et al.* 2009, pp. 132–135).

To a large extent, road density has been adopted as the best predictor of habitat suitability in the Midwest due to the connection between roads and human-caused wolf mortality. Several studies demonstrated that wolves generally did not maintain breeding packs in areas with a road density greater than about 0.9 to 1.1 linear mi per mi^2 (0.6 to 0.7 km per km^2) (Thiel 1985, pp. 404–406; Jensen *et al.* 1986, pp. 364–366; Mech *et al.* 1988, pp. 85–87; Fuller *et al.* 1992, pp. 48–51). Work by Mladenoff and associates indicated that colonizing wolves in Wisconsin preferred areas where road densities were less than 0.7 mi per mi^2 (0.45 km per km^2) (Mladenoff *et al.* 1995, p. 289). However, research in the Upper Peninsula of Michigan indicates that, in some areas with low road densities, low deer density appears to limit wolf occupancy (Potvin *et al.* 2005, pp. 1667–1668) and may prevent recolonization of portions of the Upper Peninsula. In Minnesota, a combination of road density and human density is used by Minnesota Department of Resources (MN DNR) to model suitable habitat. Areas with a human density up to 20 people per mi^2 (8 people per km^2) are suitable if they also have a road density less than 0.8 mi per mi^2 (0.5 km per km^2). Areas with a human density of less than 10 people per mi^2 (4 people per km^2) are suitable if they have road

densities up to 1.1 mi per mi² (0.7 km per km²) (Erb and Benson 2004, table 1).

Road density is a useful parameter because it is easily measured and mapped, and because it correlates directly and indirectly with various forms of other human-caused wolf mortality factors. A rural area with more roads generally has a greater human density, more vehicular traffic, greater access by hunters and trappers, more farms and residences, and more domestic animals. As a result, there is a greater likelihood that wolves in such an area will encounter humans, domestic animals, and various human activities. These encounters may result in wolves being hit by motor vehicles, being controlled by government agents after becoming involved in depredations on domestic animals, being shot intentionally by unauthorized individuals, being trapped or shot accidentally, or contracting diseases from domestic dogs (Mech *et al.* 1988, pp. 86–87; Mech and Goyal 1993, p. 332; Mladenoff *et al.* 1995, pp. 282, 291). Based on mortality data from radio-collared Wisconsin wolves from 1979 to 1999, natural causes of death predominate (57 percent of mortalities) in areas with road densities below 1.35 mi per mi² (0.84 km per km²), but human-related factors produced 71 percent of the wolf deaths in areas with higher road densities (Wydeven *et al.* 2001, pp. 112–113).

Some researchers have used a road density of 1 mi per mi² (0.6 km per km²) of land area as an upper threshold for suitable wolf habitat. However, the common practice in more recent studies is to use road density to predict probabilities of persistent wolf pack presence in an area. Areas with road densities less than 0.7 mi per mi² (0.45 km per km²) are estimated to have a greater than 50 percent probability of wolf pack colonization and persistent presence, and areas where road density exceeded 1 mi per mi² (0.6 km per km²) have less than a 10 percent probability of occupancy (Mladenoff *et al.* 1995. pp. 288–289; Mladenoff and Sickley 1998, p. 5; Mladenoff *et al.* 1999, pp. 40–41). Wisconsin researchers view areas with greater than 50 percent probability as ''primary wolf habitat,'' areas with 10 to 50 percent probability as ''secondary wolf habitat,'' and areas with less than 10 percent probability as unsuitable habitat (Wisconsin Department of Natural Resources (WI DNR) 1999, pp. 47–48).

The territories of packs that do occur in areas of high road density, and hence with low expected probabilities of occupancy, are generally near broad areas of more suitable habitat that are likely serving as a source of wolves, thereby assisting in maintaining wolf presence in the higher road density areas and, therefore, less-suitable areas (Mech 1989, pp. 387–388; Wydeven *et al.* 2001, p. 112). The predictive ability of this model was questioned (Mech 2006a, 2006b) and responded to (Mladenoff *et al.* 2006), and an updated analysis of Wisconsin pack locations and habitat was completed (Mladenoff *et al.* 2009). This model maintains that road density is still an important indicator of suitable wolf habitat; however, lack of agricultural land is also a strong predictor of habitat that wolves occupy.

It appears that essentially all suitable habitat in Minnesota is now occupied, range expansion has slowed or possibly ceased, and the wolf population within the State has stabilized (Erb and Benson 2004, p. 7; Erb and Don Carlos 2009, pp. 57, 60). This suitable habitat closely matches the areas designated as Wolf Management Zones 1 through 4 in the Revised Recovery Plan (USFWS 1992, p. 72), which are identical in area to Minnesota Wolf Management Zone A (MN DNR 2001, appendix III).

Recent surveys for Wisconsin wolves and wolf packs show that wolves have now recolonized the areas predicted by habitat models to have low, moderate, and high probability of occupancy (primary and secondary wolf habitat). The late-winter 2017–18 Wisconsin wolf survey identified packs occurring throughout the central Wisconsin forest area (Wolf Management Zone 2) and across the northern forest zone (Zone 1), with highest pack densities in the northwest and north-central forest (WI DNR 2018, entire).

Michigan wolf surveys in winter 2017–18 continue to show wolf pairs or packs (defined by Michigan DNR as two or more wolves traveling together) in every Upper Peninsula county (Huntzinger *et al.* 2005, p. 6; MI DNR 2018, entire).

Habitat suitability studies in the Upper Midwest indicate that the only large areas of suitable or potentially suitable habitat areas that are currently unoccupied by wolves are located in the northern Lower Peninsula of Michigan (Mladenoff *et al.* 1997, p. 23; Mladenoff *et al.* 1999, p. 39; Potvin 2003, pp. 44–45; Gehring and Potter 2005, p. 1239). One published Michigan study (Gehring and Potter 2005, p. 1239) estimates that these areas could host 46 to 89 wolves; a graduate thesis estimates that 110–480 wolves could exist in the northern Lower Peninsula (Potvin 2003, p. 39). The northern Lower Peninsula is separated from the Upper Peninsula by the Straits of Mackinac, whose 4-mile (6.4-km) width freezes during mid- and late-winter in some years. In recent years there have been several documented occurrences of wolves in the northern Lower Peninsula, but there has been no indication of persistence beyond several months. Prior to those occurrences, the last recorded wolf in the Lower Peninsula was in 1910.

These northern Lower Peninsula patches of potentially suitable habitat contain a great deal of private land, are small in comparison to the occupied habitat on the Upper Peninsula and in Minnesota and Wisconsin, and are intermixed with agricultural and higher-road-density areas (Gehring and Potter 2005, p. 1240). Therefore, continuing wolf immigration from the Upper Peninsula may be necessary to maintain a future northern Lower Peninsula population. The Gehring and Potter study (2005, p. 1239) predicted 850 mi² (2,198 km²) of suitable habitat (areas with greater than a 50 percent probability of wolf occupancy) in the northern Lower Peninsula. Potvin (2003, p. 21), using deer density in addition to road density, believes there are about 3,090 mi² (8,000 km²) of suitable habitat in the northern Lower Peninsula. Gehring and Potter (2005, p. 1239) exclude from their calculations those northern Lower Peninsula low-road-density patches that are less than 19 mi² (50 km²), while Potvin (2003, pp. 10–15) does not limit habitat patch size in his calculations. Both of these area estimates are well below the minimum area described in the Revised Recovery Plan, which states that 10,000 mi² (25,600 km²) of contiguous suitable habitat is needed for a viable isolated gray wolf population, and half that area (5,000 mi² or 12,800 km²) is needed to maintain a viable wolf population that is subject to wolf immigration from a nearby population (USFWS 1992, pp. 25–26).

Based on the above-described studies and the guidance of the 1992 Revised Recovery Plan, the Service has concluded that suitable habitat for wolves in the western Great Lakes area can be determined by considering four factors: road density, human density, prey base, and area. An adequate prey base is an absolute requirement, but in much of the western Great Lakes area the white-tailed deer density is well above adequate levels, causing the other factors to become the determinants of suitable habitat. Prey base is primarily of concern in the Upper Peninsula where severe winter conditions cause deer to move away from some lakeshore areas, making otherwise suitable areas locally and seasonally unsuitable. Road density and human density frequently

are highly correlated; therefore, road density is often used as a predictor of habitat suitability. However, areas with higher road density may still be suitable if the human density is very low, so a consideration of both factors is sometimes useful (Erb and Benson 2004, p. 2). Finally, although the territory of individual wolf packs can be relatively small, packs are not likely to establish territories in areas of small, isolated patches of suitable habitat.

Great Lakes Area: Prey Availability

Deer (prey) decline, due to succession of habitat and severe winter weather, was identified as a threat at the time of listing. Wolf density is heavily dependent on prey availability (for example, expressed as ungulate biomass, Fuller *et al.* 2003, pp. 170–171), and prey availability is high in the Great Lakes area. Conservation of primary wolf prey in the Great Lakes area, white-tailed deer and moose, is a high priority for State conservation agencies. As MN DNR points out in its wolf-management plan (MN DNR 2001, p. 25), it manages ungulates to ensure a harvestable surplus for hunters, nonconsumptive users, and to minimize conflicts with humans. To ensure a harvestable surplus for hunters, MN DNR must account for all sources of natural mortality, including loss to wolves, and adjust hunter harvest levels when necessary. For example, after severe winters in the 1990's, MN DNR modified hunter harvest levels to allow for the recovery of the local deer population (MN DNR 2001, p. 25). In addition to regulating the human harvest of deer and moose, MN DNR also plans to continue to monitor and improve habitat for these species.

Land management activities carried out by other public agencies and by private land owners in Minnesota's wolf range, including timber harvest and prescribed fire, incidentally and significantly improves habitat for deer, the primary prey for wolves in the State. Approximately one-half of the Minnesota deer harvest is in the Forest Zone, which encompasses most of the occupied wolf range in the State (Cornicelli 2008, pp. 208–209). There is no indication that harvest of deer and moose or management of their habitat will significantly depress abundance of these species in Minnesota's primary wolf range.

In Wisconsin, the statewide post-hunt white-tailed deer population estimate for 2017 was approximately 1,377,100 deer (Stenglein 2017, p. 1). In the Northern Forest Zone of the State, the post-hunt population estimate has ranged from approximately 250,000 deer to more than 400,000 deer since 2002. The 2017 post-hunt deer population estimate in that zone was nearly as high as it was in 2002. Three consecutive mild winters and limited antlerless harvest may explain the population growth in the northern deer herd in 2017. The Central Forest Zone post-hunt population estimates have been largely stable since 2009 at 60,000–80,000 deer on average. The Central Farmland Zone deer population has increased since 2008, and the 2017 post-hunt deer population estimate was similar to the estimate in 2016. For a third year in a row, the 2017 post-hunt deer population estimate in the Southern Farmland Zone exceeded 250,000 deer (Stenglein 2017, pp. 2, 7).

Because of severe winter conditions (persistent, deep snow) in the Upper Peninsula, deer populations can fluctuate dramatically from year to year. In 2016, the MI DNR finalized a new deer-management plan to address ecological, social, and regulatory shifts. An objective of this plan is to manage deer at the appropriate scale, considering impacts of deer on the landscape and on other species, in addition to population size (MI DNR 2016, p. 16). Additionally, the Michigan wolf-management plan addresses maintaining a sustainable population of wolf prey (MI DNR 2015, pp. 29–31). Short of a major, and unlikely, shift in deer-management and harvest strategies, there will be no shortage of prey for Wisconsin and Michigan wolves for the foreseeable future.

West Coast States: Suitable Habitat

In Washington, wolves are expected to persist in habitats with similar characteristics to those identified by Oakleaf *et al.* (2006) (Wiles *et al.* 2011, p. 50) and as described above. Several modeling studies have estimated potentially suitable wolf habitat in Washington with most predicting suitable habitat in northeastern Washington, the Blue Mountains, the Cascade Mountains, and the Olympic Peninsula. Total area estimates in these studies range from approximately 16,900 mi^2 (43,770 km^2) to 41,500 mi^2 (107,485 km^2) (Wiles *et al.* 2011, pp. 51, 53; Maletzke *et al.* 2015). The Cascade Mountains and Olympic Peninsula are both located within the boundary of the gray wolf listed entities. Current wolf-pack habitat use in Washington based on the mean home ranges of 11 packs with known territories is approximately 359 mi^2 (930 km^2), ranging from an estimated 121 mi^2 (314 km^2) to 1,164 mi^2 (3,015 km^2) (Washington Department of Fish and Wildlife (WDFW) *et al.* 2017, p. WA–6). (While 22 packs are known to occur in Washington, sufficient data is not available to estimate home ranges of the other 11.)

The Oregon Department of Fish and Wildlife (ODFW) developed a map of ''potential wolf range'' as part of its recent status review of wolves in Oregon (ODFW 2015, entire). The model used predictors of wolf habitat including land-cover type, elk range, human population density, road density, and land types altered by humans; they chose to exclude land ownership because wolves will use forested cover on both public and private lands (ODFW 2015, p. 2). Approximately 41,256 mi^2 (106,853 km^2) were identified as potential wolf range in Oregon. The resulting map coincides well with the current distribution of wolves in Oregon. The ODFW estimates that wolves occupy 31.6 percent of the potential wolf range in the east management zone (the majority of wolves here are under State management) and 2.7 percent of potential wolf range in the western management zone (all wolves here are under Federal management) (ODFW 2015, p. 9).

Habitat models developed for the northern Rocky Mountains (*e.g.,* Oakleaf *et al.* 2006; Larson and Ripple 2006; Carroll *et al.* 2006) may have limited applicability to California due to differences in geography, distribution of habitat types, distribution and abundance of prey, potential restrictions for movement, and human habitation (CDFW 2016b, pp. 154, 156). Despite these challenges, CDFW used these models to suggest that wolves are most likely to occupy three general areas: (1) The Klamath Mountains and portions of the northern California Coast Ranges; (2) the southern Cascades, the Modoc Plateau, and Warner Mountains; and (3) the Sierra Nevada Mountain Range (CDFW 2016b, p. 20). These areas were identified as having a higher potential for wolf occupancy based on prey abundance, amount of public land ownership, and forest cover, whereas other areas were less suitable due to human influences (CDFW 2016b, p. 156). As wolves continue to expand into California, models may be refined to better estimate habitat suitability and the potential for wolf occupancy.

West Coast States: Prey Availability

The Washington Department of Fish and Wildlife recently conducted a Wildlife Program 2015–2017 Ungulate Assessment to identify ungulate populations that are below management objectives or may be negatively affected by predators (WDFW 2016, entire). The

assessment covers white-tailed deer, mule deer, black-tailed deer, Rocky Mountain elk, Roosevelt elk, bighorn sheep, and moose (WDFW 2016, p. 12). Washington defines an at-risk ungulate population as one that falls 25 percent below its population objective for two consecutive years and/or one in which the harvest decreases by 25 percent below the 10-year-average harvest rate for two consecutive years (WDFW 2016, p. 13). Based on available information, the 2016 report concludes that no ungulate populations in Washington were considered to be at-risk (WDFW 2016, p. 13).

In Oregon, 20 percent of Roosevelt elk populations are below management objectives; however, the populations are generally stable within the listed gray wolf entity in western Oregon (ODFW 2017, p. 60). Rocky Mountain elk are above management objectives in 63 percent of populations and are considered to be stable or increasing across the State (ODFW 2017, p. 60). Mule deer and black-tailed deer populations peaked in the mid-1900s and have since declined, likely due to human development, changes in land use, predation, and disease (ODFW 2017, p. 61). White-tailed deer populations, including Columbia white-tailed deer, are small, but are increasing in distribution and abundance (ODFW 2017, p. 64). Deer are a secondary prey item when elk are present; areas that lack elk are only likely to support a low density of wolves (ODFW 2017, p. 56).

In California, declines of historical ungulate populations were the result of overexploitation by humans dating back to the 19th century (CDFW 2016b, p. 147). However, elk distribution and abundance have increased due to implementation of harvest regulations, reintroduction efforts, and natural expansion (CDFW 2016b, p. 147). Mule deer also experienced overexploitation, but were also more likely subject to fluctuations in habitat suitability as a result of logging, burning, and grazing. Across the West, including California, mule deer populations have been declining since the late 1960s due to multiple factors including loss of habitat, drought, predation, and competition with livestock, but, as noted above, deer are a secondary prey when elk are present (CDFW 2016b, p. 147).

Habitat and Prey Availability Summary

Sufficient suitable habitat exists for the gray wolf entity to continue to support wolves into the future. Wolf populations should remain strong in these areas with management activities that focus on wolf population reduction as needed to maintain populations of wild ungulates and reduce conflicts with livestock. Traditional land-use practices throughout the vast majority of the species' current range in the United States do not appear to be affecting the viability of wolves. We do not anticipate overall habitat changes in wolf range for the gray wolf entity will occur at a magnitude that would affect wolves in the entity rangewide because wolf populations are broadly distributed across the current range in the Great Lakes area (where most wolves occur in the entity) and are able to withstand high levels of mortality due to their high reproductive rate and vagility (the ability of an organism to move about freely and migrate) (Fuller *et al.* 2003, p. 163; Boitani 2003, pp. 328–330). Further, much of the areas occupied by the gray wolf entity occurs on public land where wolf conservation is a priority and conservation plans have been adopted to ensure continued wolf persistence (see Federal Lands discussion under Post-delisting Management) (73 FR 10514, p. 10538, February 27, 2008).

An important factor in maintaining wolf populations is the native ungulate population. Primary wild ungulate prey within the range of gray wolves in the gray wolf entity include deer and elk. Each State within wolf-occupied range for the gray wolf entity manages its wild ungulate populations to maintain sustainable populations for harvest by hunters. States employ an adaptive-management approach that adjusts hunter harvest in response to changes in big-game population numbers and trends when necessary, and predation is one of many factors considered when setting seasons. We know of no future condition that would cause a decline in ungulate populations significant enough to affect the status of gray wolves in the gray wolf entity.

Disease and Parasites

Although disease and parasites were not identified as a threat at the time of listing, a wide range of diseases and parasites have been reported for the gray wolf, and several of them have had temporary impacts during the recovery of the species in the 48 contiguous United States (Brand *et al.* 1995, p. 419; WI DNR 1999, p. 61, Kreeger 2003, pp. 202–214). Although some diseases may be destructive to individuals, most of them seldom have long-term, population-level effects (Fuller *et al.* 2003, pp. 176–178; Kreeger 2003, pp. 202–214). All States that presently have wolf populations also have some sort of disease-monitoring program that may include direct observation of wolves to assess potential disease indicators or biological sample collection with subsequent analysis at a laboratory. Although Washington has not submitted biological samples for analysis, samples have been collected and laboratory analysis is planned for the future (Roussin 2018, pers. comm.).

Canine parvovirus (CPV) infects wolves, domestic dogs (*Canis familiaris*), foxes (*Vulpes vulpes*), coyotes, skunks (*Mephitis mephitis*), and raccoons (*Procyon lotor*). Canine parvovirus has been detected in nearly every wolf population in North America including Alaska (Bailey *et al.* 1995, p. 441; Brand *et al.* 1995, p. 421; Kreeger 2003, pp. 210–211; Johnson *et al.* 1994; ODFW 2014, p. 7), and exposure in wolves is thought to be almost universal. Nearly 100 percent of the wolves handled in Montana (Atkinson 2006), Yellowstone National Park (Smith and Almberg 2007, p. 18), Minnesota (Mech and Goyal 1993, p. 331), and Oregon (ODFW 2017, p. 8) had blood antibodies indicating nonlethal exposure to CPV. Clinical CPV is characterized by severe hemorrhagic diarrhea and vomiting, which leads to dehydration, electrolyte imbalances, debility, and shock and may eventually lead to death.

Mech *et al.* (2008, p. 824) concluded that CPV reduced pup survival, subsequent dispersal, and the overall rate of population growth in Minnesota (a population near carrying capacity in suitable habitat). After the CPV became endemic in the population (around 1979), the population developed immunity and was able to withstand severe effects from the disease (Mech and Goyal 1993, pp. 331–332). These observed effects are consistent with results from studies in smaller, isolated populations in Wisconsin and on Isle Royale, Michigan (Wydeven *et al.* 1995, entire; Peterson *et al.* 1998, entire), but indicate that CPV also had only a temporary effect in a larger population.

Canine distemper virus (CDV) is an acute disease of carnivores that has been known in Europe since the sixteenth century and infects canids worldwide (Kreeger 2003, p. 209). This disease generally infects pups when they are only a few months old, so mortality in wild wolf populations might be difficult to detect (Brand *et al.* 1995, pp. 420–421). Mortality from CDV among wild wolves has been documented only in two littermate pups in Manitoba (Carbyn 1982, pp. 111–112), in two Alaskan yearling wolves (Peterson *et al.* 1984, p. 31), and in two Wisconsin wolves (an adult in 1985 and a pup in 2002 (Thomas *in litt.* 2006; Wydeven and Wiedenhoeft 2003, p. 20)). Carbyn

(1982, pp. 113–116) concluded that CDV was partially responsible for a 50-percent decline in the wolf population in Riding Mountain National Park (Manitoba, Canada) in the mid-1970s. Serological evidence indicates that exposure to CDV is high among some wolf populations—29 percent in northern Wisconsin and 79 percent in central Wisconsin from 2002 to 2003 (Wydeven and Wiedenhoeft 2003, pp. 23–24, table 7) and 2004 (Wydeven and Wiedenhoeft 2004, pp. 23–24, table 7), and similar levels in Yellowstone National Park (Smith and Almberg 2007, p. 18). Exposure to CDV was first documented in Oregon in 2016 (n=3; ODFW 2017, p. 8), but no mortalities or clinical signs of the disease were observed. The continued strong recruitment in Wisconsin and elsewhere in North American wolf populations, however, indicates that distemper is not likely a significant cause of mortality (Brand *et al.* 1995, p. 421).

Lyme disease, caused by a spirochete bacterium, is spread primarily by deer ticks (*Ixodes dammini*). Host species include humans, horses (*Equus caballus*), dogs, white-tailed deer, mule deer, elk, white-footed mice (*Peromyscus leucopus*), eastern chipmunks (*Tamias striatus*), coyotes, and wolves. Clinical symptoms have not been reported in wolves, but infected dogs can experience debilitating conditions, and abortion and fetal mortality have been reported in infected humans and horses. It is possible that individual wolves may be debilitated by Lyme disease, perhaps contributing to their mortality; however, Lyme disease is not believed to be a significant factor affecting wolf populations (Kreeger 2003, p. 212).

Mange has been detected in wolves throughout North America (Brand *et al.* 1995, pp. 427–428; Kreeger 2003, pp. 207–208). Mange mites (*Sarcoptes scabeii*) infest the skin of the host, causing irritation due to feeding and burrowing activities. This causes intense itching that results in scratching and hair loss. Mortality may occur due to exposure, primarily in cold weather, emaciation, or secondary infections (Kreeger 2003, pp. 207–208). Mange mites are spread from an infected individual through direct contact with others or through the use of common areas. In a long-term Alberta wolf study, higher wolf densities were correlated with increased incidence of mange, and pup survival decreased as the incidence of mange increased (Brand *et al.* 1995, pp. 427–428). Mange has been shown to temporarily affect wolf population growth-rates in some areas (Kreeger 2003, p. 208), but not others (Wydeven *et al.* 2009b, pp. 96–97). In Montana and Wyoming, proportions of packs with mange fluctuated between 3 and 24 percent annually from 2003 to 2008 (Jimenez *et al.* 2010; Atkinson 2006, p. 5; Smith and Almberg 2007, p. 19). In packs with the most severe infestations, pup survival appeared low, and some adults died (Jimenez *et al.* 2010); however, evidence suggests infestations do not normally become chronic because wolves often naturally overcome them.

Dog-biting lice (*Trichodectes canis*) commonly feed on domestic dogs, but can infest coyotes and wolves (Schwartz *et al.* 1983, p. 372; Mech *et al.* 1985, p. 404). The lice can attain severe infestation levels, particularly in pups. The worst infestations can result in severe scratching, irritated and raw skin, substantial hair loss particularly in the groin, and poor condition. While no wolf mortality has been confirmed, death from exposure and/or secondary infection following self-inflicted trauma caused by inflammation and itching may be possible. Dog-biting lice were confirmed on two wolves in Montana in 2005, on a wolf in southcentral Idaho in early 2006 (Service *et al.* 2006, p. 15; Atkinson 2006, p. 5; Jimenez *et al.* 2010), and in 4 percent of Minnesota wolves in 2003 through 2005 (Paul *in litt.* 2005), but their infestations were not severe. Dog-biting lice infestations are not expected to have a significant impact even at a local scale.

Other diseases and parasites, including rabies, canine heartworm, blastomycosis, bacterial myocarditis, granulomatous pneumonia, brucellosis, leptospirosis, bovine tuberculosis, hookworm, coccidiosis, and canine hepatitis have been documented in wild wolves, but their impacts on future wild wolf populations are not likely to be significant (Brand *et al.* 1995, pp. 419–429; Hassett *in litt.* 2003; Johnson 1995, pp. 431, 436–438; Mech and Kurtz 1999, pp. 305–306; Thomas *in litt.* 1998, Thomas *in litt.* 2006, WI DNR 1999, p. 61; Kreeger 2003, pp. 202–214). Continuing wolf range expansion, however, likely will provide new avenues for exposure to several of these diseases, especially canine heartworm, raccoon rabies, and bovine tuberculosis (Thomas *in litt.* 2000; Thomas *in litt.* 2006), further emphasizing the importance of disease-monitoring programs.

Effects of Climate Change

Effects of climate change were not identified as threats at the time of listing. While it is possible that climate change could affect gray wolves to some extent, such as through impacts to prey species (Hendricks *et al.* 2018, unpaginated), we are not aware of any information indicating that climate change is causing negative effects to the viability of gray wolf populations in the gray wolf entity, or that it is likely to do so in the future. Throughout their circumpolar distribution, gray wolves persist in a variety of ecosystems with temperatures ranging from −70 °F to 120 °F (−57 °C to 49 °C) (Mech and Boitani 2003, p. xv). Gray wolves are highly adaptable animals that inhabit a range of ecotypes and are efficient at exploiting food resources available to them. Due to this plasticity, we do not consider gray wolves to be vulnerable to climate change. For a full discussion of potential impacts of climate change on wolves, see the final delisting rule for the gray wolf in Wyoming (77 FR 55597–55598, September 10, 2012).

Cumulative Effects

When threats occur together, one may exacerbate the effects of another, causing effects not accounted for when threats are analyzed individually. Many of the threats to the gray wolf entity and gray wolf habitat discussed above are interrelated and could be synergistic, and thus may cumulatively affect the gray wolf entity beyond the extent of each individual threat. For example, a decline in available wild prey could cause wolves to prey on more livestock resulting in a potential increase in human-caused mortality. Although the types, magnitude, or extent of cumulative impacts are difficult to predict, we are not aware of any information demonstrating that cumulative effects are occurring at a level sufficient to negatively affect gray wolf populations within the gray wolf entity. We are not aware of any combination of factors that have not already been, or would not be, addressed through ongoing management measures that are expected to continue post-delisting and into the future, as described above. The best scientific and commercial data available indicate that the vast majority of these wolves occur as a widespread, large, and resilient metapopulation and that threat factors are not currently resulting, nor are they anticipated to cumulatively result, in reductions in gray wolf numbers or habitat.

Post-Delisting Management

State Management

Post-Delisting Management in Minnesota, Wisconsin, and Michigan

During the 2000 legislative session, the Minnesota Legislature passed wolf-management provisions addressing wolf

protection, taking of wolves, and directing Minnesota Department of Natural Resources to prepare a wolf-management plan. The MN DNR revised a 1999 draft wolf-management plan to reflect the legislative action of 2000, and completed the Minnesota Wolf Management Plan in early 2001 (MN DNR 2001, entire).

The Wisconsin Natural Resources Board approved the Wisconsin Wolf Management Plan in October 1999. In 2004 and 2005 the Wisconsin Wolf Science Advisory Committee and the Wisconsin Wolf Stakeholders group reviewed the 1999 Plan, and the Science Advisory Committee subsequently developed updates and recommended modifications to the 1999 Plan. The updates were completed and received final Natural Resources Board approval on November 28, 2006 (WI DNR 2006a, entire).

In late 1997, the Michigan Wolf Recovery and Management Plan was completed and received the necessary State approvals. That plan focused on recovery of a small wolf population, rather than long-term management of a large wolf population and the conflicts that result as a consequence of successful wolf restoration. To address changes associated with the 2007 Federal delisting of wolves in Michigan, the MI DNR revised its original wolf plan and created the 2008 Michigan Wolf Management Plan. The 2008 plan addressed the biological, social, and regulatory situation of wolf management in Michigan at that time. Since then, the context of wolf management in Michigan has continued to change, and the MI DNR again updated its wolf-management plan in 2015 (MI DNR 2015, entire). The 2015 updates reflect the biological and social issues associated with the increased population size and distribution of wolves in the State, although the four principle goals of the 2008 plan remain the same. The complete text of the Wisconsin, Michigan, and Minnesota wolf-management plans can be found on our website (see **FOR FURTHER INFORMATION CONTACT**).

The Minnesota Wolf Management Plan—The Minnesota Plan is based, in part, on the recommendations of a State wolf-management roundtable (MN DNR 2001, appendix V) and on a State wolf-management law enacted in 2000 (MN DNR 2001, appendix I). This law and the Minnesota Game and Fish Laws constitute the basis of the State's authority to manage wolves. The Plan's stated goal is ''to ensure the long-term survival of wolves in Minnesota while addressing wolf—human conflicts that inevitably result when wolves and people live in the same vicinity'' (MN DNR 2001, p. 2). It establishes a minimum goal of 1,600 wolves in the State. Key components of the plan are population monitoring and management, management of wolf depredation of domestic animals, management of wolf prey, enforcement of laws regulating take of wolves, public education, and increased staffing to accomplish these actions. Following Federal delisting, MN DNR's management of wolves would differ from their current management while wolves were listed as threatened under the Act. Most of these differences deal with two aspects of wolf management: The control of wolves that attack or threaten domestic animals and the implementation of a regulated wolf harvest season.

The Minnesota Plan divides the State into two wolf-management zones—Zones A and B (see map in MN DNR 2001, appendix 3). Zone A corresponds to Federal Wolf Management Zones 1 through 4 (approximately 30,000 mi^2 (77,700 km^2) in northeastern Minnesota) in the Service's Recovery Plan for the Eastern Timber Wolf, whereas Zone B constitutes Zone 5 in that recovery plan (the rest of the State (approximately 57,000 mi^2 (147,600 km^2) (MN DNR 2001, pp. 19–20 and appendix III; USFWS 1992, p. 72). Within Zone A, wolves would receive strong protection by the State, unless they were involved in attacks on domestic animals. The rules governing the take of wolves to protect domestic animals in Zone B would be less protective of wolves than in Zone A (see *Post-delisting Depredation Control in Minnesota* below).

The Minnesota Department of Natural Resources plans to allow wolf numbers and distribution to naturally expand, with no maximum population goal, and if any winter population estimate is below 1,600 wolves, it would take actions to ''assure recovery'' to 1,600 wolves (MN DNR 2001 p. 19). The MN DNR plans to continue to monitor wolves in Minnesota to determine whether such intervention is necessary. After the WGL DPS was delisted in 2011, the MN DNR increased the frequency of population surveys from every 5 years to annually in 2013. Although the agency is evaluating wolf-monitoring methods and optimal frequencies, short-term plans are to continue annual population-size estimates. In addition to these statewide population surveys, MN DNR annually reviews data on depredation-incident frequency and locations provided by Wildlife Services and winter track-survey indices (see Erb 2008) to help ascertain annual trends in wolf population or range (MN DNR 2001, pp. 18–19).

Minnesota (MN DNR 2001, pp. 21–24, 27–28) plans to reduce or control illegal mortality of wolves through education, increased enforcement of the State's wolf laws and regulations, discouraging new road access in some areas, and maintaining a depredation-control program that includes compensation for livestock losses. The MN DNR plans to use a variety of methods to encourage and support education of the public about the effects of wolves on livestock, wild ungulate populations, and human activities and the history and ecology of wolves in the State (MN DNR 2001, pp. 29–30). These are all measures that have been in effect for years in Minnesota, although increased enforcement of State laws against take of wolves would replace enforcement of the Act's take prohibitions. Financial compensation for livestock losses has increased to the full market value of the animal, replacing previous caps of $400 and $750 per animal (MN DNR 2001, p. 24). We do not expect the State's efforts to result in the reduction of illegal take of wolves from existing levels, but these measures would be crucial in ensuring that illegal mortality does not significantly increase after Federal delisting.

Under Minnesota law, the illegal killing of a wolf is a gross misdemeanor and is punishable by a maximum fine of $3,000 and imprisonment for up to 1 year. The restitution value of an illegally killed wolf is $2,000 (MN DNR 2001, p. 29). The MN DNR has designated three conservation officers who are stationed in the State's wolf range as the lead officers for implementing the wolf-management plan (MN DNR 2001, pp. 29, 32; Stark *in litt.* 2018).

Depredation Control in Minnesota—Although federally protected as a threatened species in Minnesota, wolves that have attacked domestic animals have been killed by designated government employees under the authority of a regulation (50 CFR 17.40(d)) under section 4(d) of the Act. However, no control of depredating wolves was allowed in Federal Wolf Management Zone 1, comprising about 4,500 mi^2 (7,200 km^2) in extreme northeastern Minnesota (USFWS 1992, p. 72). In Federal Wolf Management Zones 2 through 5, employees or agents of the Service (including USDA–APHIS–Wildlife Services) have taken wolves in response to depredations of domestic animals within one-half mile (0.8 km) of the depredation site. Young-of-the-year (young produced in one reproductive year) captured on or before

August 1 must be released. The regulations that allow for this take (50 CFR 17.40(d)(2)(i)(C)) do not specify a maximum duration for depredation control, but Wildlife Services personnel have followed internal guidelines under which they trap for no more than 10–15 days, except at sites with repeated or chronic depredation, where they may trap for up to 30 days (Paul 2004, pers. comm.).

During the period 1980–2017, the Federal Minnesota wolf-depredation-control program euthanized from 20 (in 1982) to 262 (in 2015) wolves annually. The annual averages and the percentage of the statewide wolf population for 5-year periods are presented in table 2.

TABLE 2—AVERAGE ANNUAL NUMBER OF WOLVES EUTHANIZED UNDER MINNESOTA WOLF DEPREDATION CONTROL AND THE PERCENTAGE OF THE STATEWIDE WOLF POPULATION FOR 5-YEAR PERIODS FROM 1980–2017

[Final time period represents 3, rather than 5 years) (Erb 2008; USDA–Wildlife Services 2010, p. 3; USDA–Wildlife Services 2011, p. 3; USDA–Wildlife Services 2017, p. 3]

	1980–1984	1985–1989	1990–1994	1995–1999	2000–2004	2005–2009	2010–2014	2015–2017
Average annual # wolves euthanized	30	49	115	152	128	157	194	195
Average annual % of wolf population	2.2	3.0	6.0	6.7	4.2	5.4	7.6	7.3

Since 1980, the lowest annual percentage of Minnesota wolves killed under this program was 1.5 percent in 1982; the highest percentage was 9.4 in both 1997 and 2015 (Paul 2004, pp. 2–7; Paul 2006, p. 1; USDA–Wildlife Services 2017, p. 3). The periods during which the depredation-control program was taking its highest percentages of wolves was during the 1990s and the 2010s. During the 1990s, when wolves euthanized for depredation control averaged around 6 percent of the wolf population, Minnesota wolf numbers continued to grow at an average annual rate of nearly 4 percent (Paul 2004, pp. 2–7). Wolf populations in the State fluctuated during the 2010s, when wolves euthanized for depredation control averaged around 7 percent of the wolf population. While wolf populations in the State did decline while wolves were delisted from 2011–2014, other management techniques in addition to depredation control were also implemented during that time (*e.g.,* regulated harvest), and that management was expected to reduce wolf numbers while maintaining a minimum population level. The level of wolf removal for depredation control that has occurred has not interfered with wolf recovery in Minnesota.

Under a Minnesota statute, the Minnesota Department of Agriculture (MDA) compensates livestock owners for full market value of livestock that wolves have killed or severely injured. An authorized investigator must confirm that wolves were responsible for the depredation. The Minnesota statute also requires MDA to periodically update its Best Management Practices to incorporate new practices that it finds would reduce wolf depredation (Minnesota Statutes 2018, Section 3.737, subdivision 5).

Post-delisting Depredation Control in Minnesota—If wolves in Minnesota are delisted, depredation control would be authorized under Minnesota State law and conducted in conformance with the Minnesota Wolf Management Plan (MN DNR 2001). The Minnesota Plan divides the State into Wolf Management Zones A and B, as discussed above. The statewide survey conducted during the winter of 2003–04 estimated that there were approximately 2,570 wolves in Zone A and 450 in Zone B (Erb *in litt.* 2005). As discussed in Recovery Criteria above, the Federal planning goal is 1,251–1,400 wolves for Zones 1–4 and there is no minimum population goal for Zone 5 (USFWS 1992, p. 28).

In Zone A, wolf depredation control would be limited to situations of (1) immediate threat and (2) following verified loss of domestic animals. In this zone, if the DNR verifies that a wolf destroyed any livestock, domestic animal, or pet, and if the owner requests wolf control be implemented, trained and certified predator controllers may take wolves (specific number to be determined on a case-by-case basis) within a 1-mile (1.6-km) radius of the depredation site (depredation-control area) for up to 60 days. In contrast, in Zone B, predator controllers may take wolves (specific number to be determined on a case-by-case basis) for up to 214 days after MN DNR opens a depredation-control area, depending on the time of year. Under State law, the DNR may open a control area in Zone B anytime within 5 years of a verified depredation loss upon request of the landowner, thereby providing more of a preventative approach than is allowed in Zone A, in order to head off repeat depredation incidents (MN DNR 2001, p. 22).

Depredation control would be allowed throughout Zone A, which includes an area (Federal Wolf Management Zone 1) where such control has not been permitted under the Act's protection. Depredation by wolves in Zone 1, however, has been limited to 2 to 4 reported incidents per year, mostly of wolves killing dogs. In 2009, there was one probable and one verified depredation of a dog near Ely, Minnesota, and in 2010 Wildlife Services confirmed three dogs killed by wolves in Zone 1 (USDA–Wildlife Services 2009, p. 3; USDA–Wildlife Services 2010, p. 3). There are few livestock in Zone 1; therefore, the number of verified future depredation incidents in that Zone is expected to be low, resulting in a correspondingly low number of depredating wolves being killed there after delisting.

State law and the Minnesota Plan would also allow for private wolf depredation control throughout the State. Persons could shoot or destroy a wolf that poses ''an immediate threat'' to their livestock, guard animals, or domestic animals on lands that they own, lease, or occupy. Immediate threat is defined as ''in the act of stalking, attacking, or killing.'' This does not include trapping because traps cannot be placed in a manner such that they trap only wolves in the act of stalking, attacking, or killing. Owners of domestic pets could also kill wolves posing an immediate threat to pets under their supervision on lands that they do not own or lease, although such actions are subject to local ordinances, trespass law, and other applicable restrictions. To protect their domestic animals in Zone B, individuals do not have to wait for an immediate threat or a depredation incident in order to take wolves. At any time in Zone B, persons who own, lease, or manage lands may shoot wolves on those lands to protect livestock, domestic animals, or pets. They may

also employ a predator controller to trap a wolf on their land or within 1 mile (1.6 km) of their land (with permission of the landowner) to protect their livestock, domestic animals, or pets (MN DNR 2001, pp. 23–24). The MN DNR will investigate any private taking of wolves in Zone A (MN DNR 2001, p. 23). The Minnesota Plan would also allow persons to harass wolves anywhere in the State within 500 yards of ''people, buildings, dogs, livestock, or other domestic pets or animals.'' Harassment may not include physical injury to a wolf.

As discussed above, landowners or lessees would be allowed to respond to situations of immediate threat by shooting wolves in the act of stalking, attacking, or killing livestock or other domestic animals in Zone A. We conclude that this action is not likely to result in the killing of many additional wolves, as opportunities to shoot wolves ''in the act'' would likely be few and difficult to successfully accomplish, a conclusion shared by a highly experienced wolf-depredation agent (Paul *in litt.* 2006, p. 5). It is also possible that illegal killing of wolves in Minnesota will decrease, because the expanded options for legal control of problem wolves may lead to an increase in public tolerance for wolves (Paul *in litt.* 2006, p. 5).

State law and the Minnesota Plan would provide broad authority to landowners and land managers to shoot wolves at any time to protect their livestock, pets, or other domestic animals on land owned, leased, or managed by the individual in Zone B (as described above). Such takings can occur in the absence of wolf attacks on the domestic animals. Thus, the estimated 450 wolves in Zone B could be subject to substantial reduction in numbers. At the extreme, wolves could be eliminated from Zone B, but this is highly unlikely—the Minnesota Plan states that ''Although depredation procedures will likely result in a larger number of wolves killed, as compared to previous ESA management, they will not result in the elimination of wolves from Zone B.'' (MN DNR 2001, pp. 22–23). While wolves were under State management in 2007–08 and in 2011–14, landowners in Zone B shot six and eight wolves under this authority, respectively. Fourteen additional wolves were trapped and euthanized in Zone B by State-certified predator controllers, 1 in 2009 and 13 in 2013 (Stark *in litt.* 2009; Stark *in litt.* 2018).

The limitation of this broad take authority to Zone B is fully consistent with the advice in the Recovery Plan for the Eastern Timber Wolf that wolves should be restored to the rest of Minnesota but not to Zone B (Federal Zone 5) because that area ''is not suitable for wolves'' (USFWS 1992, p. 20). The Recovery Plan for the Eastern Timber Wolf envisioned that the Minnesota numerical planning goal would be achieved solely in Zone A (Federal Zones 1–4) (USFWS 1992, p. 28), and that has occurred. Wolves outside of Zone A are not necessary to the establishment and long-term viability of a self-sustaining wolf population in the State, and, therefore, there is no need to establish or maintain a wolf population in Zone B. Accordingly, there is no need to maintain significant protection for wolves in Zone B in order to maintain a Minnesota wolf population that continues to satisfy the Federal recovery criteria after Federal delisting.

This expansion of depredation-control activities would not threaten the continued survival of wolves in the State or the long-term viability of the wolf population in Zone A, the large part of wolf range in Minnesota. Significant changes in wolf depredation control under State management will primarily be restricted to Zone B, which is outside of the area necessary for wolf recovery (USFWS 1992, pp. 20, 28). Furthermore, wolves may still persist in Zone B despite the likely increased take there. The Eastern Timber Wolf Recovery Team concluded that the changes in wolf management in the State's Zone A would be ''minor'' and would not likely result in ''significant change in overall wolf numbers in Zone A.'' They found that, despite an expansion of the individual depredation-control areas and an extension of the control period to 60 days, depredation control would remain ''very localized'' in Zone A. The requirement that such depredation-control activities be conducted only in response to verified wolf depredation in Zone A played a key role in the team's evaluation (Peterson *in litt.* 2001). While wolves were under State management in 2007 and 2008, the number of wolves killed for depredation control (133 wolves in 2007 and 143 wolves in 2008) remained consistent with those killed under the special regulation under section 4(d) of the Act while wolves were federally listed (105, in 2004; 134, in 2005; and 122, in 2006). The number of wolves killed for depredation control while wolves were under State management for the second time (2011–2014) was slightly higher (203 wolves in 2011, 262 in 2012, 114 in 2013, and 197 in 2014) than during 2007 and 2008, but was still consistent with those killed under section 4(d) in the surrounding years (192 wolves in 2010 and 213 in 2015).

Minnesota would continue to monitor wolf populations throughout the State and would also monitor all depredation-control activities in Zone A (MN DNR 2001, p. 18). These and other activities contained in their plan would be essential in meeting their population goal of a minimum statewide winter population of 1,600 wolves, well above the planning goal of 1,251 to 1,400 wolves that the Revised Recovery Plan identifies as sufficient to ensure the wolf's continued survival in Minnesota (USFWS 1992, p. 28).

Post-delisting Regulated Harvest in Minnesota—Minnesota Department of Natural Resources will consider wolf population-management measures, including public hunting and trapping seasons and other methods, if wolves are federally delisted. In 2011, the Minnesota Legislature authorized the MN DNR to implement a wolf season following the Federal delisting and classified wolves as small game in State statute (Minnesota Statutes 2018 97B.645 Subd. 9). Following Federal delisting, the 2012 Legislature established wolf hunting and trapping licenses, clarified the authority for the MN DNR to implement a wolf season, and required the start of the season to be no later than the start of firearms deer season each year. Three regulated harvest seasons (in 2012, 2013, and 2014) were subsequently implemented in the State while wolves were federally delisted. The harvest was divided into three segments: An early hunting season that coincided with the firearms deer season, a late hunting season, and a concurrent late trapping season. In 2012, the MN DNR established a total target harvest of 400 wolves (the close of the harvest season is to be initiated when that target is met) (Stark and Erb 2013, pp. 1–2). During that first regulated season, 413 wolves were harvested. Based on the results of the 2012 harvest season, the MN DNR revised the target to 220 wolves for 2013; that year 238 wolves were harvested. The 2014 target harvest was 250 wolves and 272 were harvested.

The Minnesota management plan requires that population-management measures be implemented in such a way to maintain a statewide late-winter wolf population of at least 1,600 animals (MN DNR 2001, pp. 19–20), well above the planning goal of 1,251 to 1,400 wolves for the State in the Revised Recovery Plan (USFWS 1992, p. 28); therefore, implementing such management measures under that

requirement would ensure the wolf's continued survival in Minnesota.

The Wisconsin Wolf Management Plan—Both the Wisconsin and Michigan Wolf Management Plans are designed to manage and ensure the existence of wolf populations in the States as if they are isolated populations and are not dependent upon immigration of wolves from an adjacent State or Canada, while still maintaining connections to those other populations. We support this approach as it provides strong assurances that the wolf in both States will remain a viable component of the wolves in the Great Lakes area and the larger gray wolf entity.

The Wisconsin Plan allows for differing levels of protection and management within four separate management zones (see WI DNR 2006a, figure 8). The Northern Forest Zone (Zone 1) and the Central Forest Zone (Zone 2) now contain most of the State's wolf population, with approximately 6 percent of the Wisconsin wolves in Zones 3 and 4 (Wydeven and Wiedenhoeft 2009, table 1). Zones 1 and 2 contain all the larger unfragmented areas of suitable habitat, so we anticipate that most of the State's wolf packs will continue to inhabit those parts of Wisconsin. At the time the 1999 Wisconsin Plan was completed, it recommended immediate reclassification from State-endangered to State-threatened status, because Wisconsin's wolf population had already exceeded its reclassification criterion of 80 wolves for 3 years; thus, State reclassification occurred that same year.

The Wisconsin Plan contains a minimum population goal of 350 wolves outside of Native American reservations, and specifies that the species should be delisted by the State once the population reaches 250 animals outside of reservations. The species was proposed for State delisting in late 2003, and the State delisting process was completed in 2004. Upon State delisting, the species was classified as a ''protected nongame species,'' a designation that continues State prohibitions on sport hunting and trapping of the species (Wydeven and Jurewicz 2005, p. 1; WI DNR 2006b, p. 71). The Wisconsin Plan includes criteria for when State re-listing to threatened (a decline to fewer than 250 wolves for 3 years) or endangered status (a decline to fewer than 80 wolves for 1 year) should be considered. The Wisconsin Plan will be reviewed annually by the Wisconsin Wolf Advisory Committee and will be reviewed by the public every 5 years. Recently the WI DNR began work on updating the State's wolf-management plan, which may include increasing the State management goal (Wydeven and Wiedenhoeft 2009, p. 3).

The Wisconsin Plan was updated during 2004–06 to reflect current wolf numbers, additional knowledge, and issues that have arisen since its 1999 completion. This update is in the form of text changes, revisions to two appendices, and the addition of a new appendix to the 1999 plan, rather than a major revision to the plan. Several components of the plan that are key to our delisting evaluation are unchanged. The State wolf-management goal of 350 animals and the boundaries of the four wolf-management zones remain the same as in the 1999 Plan. The updated 2006 Plan continues access management on public lands and the protection of active den sites. Protection of pack-rendezvous sites, however, is no longer considered to be needed in areas where wolves have become well established, due to the transient nature of these sites and the larger wolf population. The updated Plan states that rendezvous sites may need protection in areas where wolf colonization is still under way or where pup survival is extremely poor, such as in northeastern Wisconsin (WI DNR 2006a, p. 17). The guidelines for the wolf depredation-control program (see *Post-delisting Depredation Control in Wisconsin*) did not undergo significant alteration during the update process. The only substantive change to depredation-control practices is to expand the area of depredation-control trapping in Zones 1 and 2 to 1 mi (1.6 km) outward from the depredation site, replacing the previous 0.5-mi (0.8-km) radius trapping zone (WI DNR 2006a, pp. 3–4).

An important component of the Wisconsin Plan is the annual monitoring of wolf populations by radio collars and winter track surveys in order to provide comparable annual data to assess population size and growth for at least 5 years after Federal delisting. This monitoring would include health monitoring of captured wolves and necropsies of dead wolves that are found. Wolf scat would be collected and analyzed to monitor for canine viruses and parasites. Health monitoring would be part of the capture protocol for all studies that involve the live-capture of Wisconsin wolves (WI DNR 2006a, p. 14). The 2006 update to the Wisconsin Wolf Management Plan did not change the WI DNR's commitment to annual wolf population monitoring, and ensures accurate and comparable data (WI DNR 1999, pp. 19–20).

Cooperative habitat management would be promoted with public and private landowners to maintain existing road densities in Zones 1 and 2, protect wolf dispersal corridors, and manage forests for deer and beaver (WI DNR 1999, pp. 4, 22–23; 2006a, pp. 15–17). Furthermore, in Zone 1, a year-round prohibition on tree harvest within 330 feet (100 m) of den sites and seasonal restrictions to reduce disturbance within one-half mile (0.8 km) of dens would be WI DNR policy on public lands and would be encouraged on private lands (WI DNR 1999, p. 23; 2006a, p. 17).

The 1999 Wisconsin Plan contains, and the 2006 update retains, other components that would provide protection to assist in maintenance of a viable wolf population in the State following delisting: (1) Continue the protection of the species as a ''protected wild animal'' with penalties similar to those for unlawfully killing large game species (fines of $1,000–$2,000, loss of hunting privileges for 3–5 years, and a possible 6-month jail sentence), (2) maintain closure zones where coyotes cannot be shot during deer-hunting season in Zone 1, (3) legally protect wolf dens under the Wisconsin Administrative Code, (4) require State permits to possess a wolf or wolf-dog hybrid, and (5) establish a restitution value to be levied in addition to fines and other penalties for wolves that are illegally killed (WI DNR 1999, pp. 21, 27–28, 30–31; 2006a, pp. 3–4).

The 2006 update of the Wisconsin Plan continues to emphasize the need for public education efforts that focus on living with a recovered wolf population, ways to manage wolves and wolf–human conflicts, and the ecosystem role of wolves. The Plan continues the State reimbursement for depredation losses (including dogs and missing calves), citizen stakeholder involvement in the wolf-management program, and coordination with the Tribes in wolf management and investigation of illegal killings (WI DNR 1999, pp. 24, 28–29; 2006a, pp. 22–23).

Depredation Control in Wisconsin—Lethal depredation control has not been authorized in Wisconsin (due to the listed status of wolves there as endangered) except for several years when such control was authorized under a permit from the USFWS or while wolves were delisted under previous actions. The rapidly expanding Wisconsin wolf population has resulted in an increased need for depredation control, however. From 1979 through 1989, there were only five cases (an average of 0.4 per year) of verified wolf depredations in Wisconsin, but the number of incidents has steadily increased over the subsequent decades.

During the 1990s there were an average of approximately 4 incidents per year, increasing to an average of approximately 38 per year during the 2000s and to an average of approximately 69 per year since 2010 (WI DNR data files and summary of wolf survey and depredation reports).

A significant portion of depredation incidents in Wisconsin involve attacks on dogs. In most cases, these have been hunting dogs that were being used for, or being trained for, hunting bears, bobcats, coyotes, and snowshoe hare (Ruid *et al.* 2009, pp. 285–286). It is believed that the dogs entered the territory of a wolf pack and may have been close to a den, rendezvous site, or feeding location, thus triggering an attack by wolves defending their territory or pups. The frequency of attacks on hunting dogs has increased as the State's wolf population has grown. Of the 206 dogs killed by wolves during the 25 years from 1986–2010, more than 80 percent occurred during the period from 2001–10, with an average of 17 dogs killed annually during that 10-year period (WI DNR files). Data on depredations from 2013 to 2017 show a continued increase in wolf attacks on dogs, with an average of 23 dogs killed annually (with a high of 41 dogs in 2016). While the WI DNR compensates dog owners for mortalities and injuries to their dogs, the DNR takes no action against the depredating pack unless the attack was on a dog that was leashed, confined, or under the owner's control on the owner's land. Instead, the DNR issues press releases to warn bear hunters and bear-dog trainers of the areas where wolf packs have been attacking bear dogs (WI DNR 2008, p. 5) and provides maps and advice to hunters on the WI DNR website (see *https://dnr.wi.gov/topic/WildlifeHabitat/wolf/dogdeps.html*). In 2010, wolf attacks on dogs occurred 14 times near homes, which was the highest level seen of this type of depredation (Wydeven *et al.* 2011, p. 3).

During the first periods that wolves were federally delisted in Wisconsin (from March 2007 through September 2008 and from April through early July 2009), 92 wolves were killed for depredation control in the State, including 8 legally shot by private landowners (Wydeven and Wiedenhoeft 2008, p. 8; Wydeven *et al.* 2009b, p. 6; Wydeven *et al.* 2010, p. 13). When wolves were again delisted from January 2012 through December 2014, depredation control resulted in 164 wolves being killed, including 38 legally shot by private landowners (McFarland and Wiedenhoeft 2013, p. 9; Wiedenhoeft *et al,* 2014, p. 10; Wiedenhoeft *et al.* 2015, p. 10).

Post-delisting Depredation Control in Wisconsin—Following Federal delisting, wolf depredation control in Wisconsin would be carried out according to the 2006 Updated Wisconsin Wolf Management Plan (WI DNR 2006a, pp. 19–23), Guidelines for Conducting Depredation Control on Wolves in Wisconsin Following Federal Delisting (WI DNR 2008), and any Tribal wolf-management plans or guidelines that may be developed for reservations in occupied wolf range. The 2006 updates did not significantly change the 1999 State Plan, and the State wolf management goal of 350 wolves outside of Indian reservations (WI DNR 2006a, p. 3) is unchanged. Verification of wolf depredation incidents would continue to be conducted by USDA–APHIS–Wildlife Services, working under a cooperative agreement with WI DNR, or at the request of a Tribe, depending on the location of the suspected depredation incident. If determined to be a confirmed or probable depredation by a wolf or wolves, one or more of several options would be implemented to address the depredation problem. These options include technical assistance, loss compensation to landowners, translocating or euthanizing problem wolves, and private landowner control of problem wolves in some circumstances (WI DNR 2006a, pp. 3–4, 20–22).

Technical assistance, consisting of advice or recommendations to prevent or reduce further wolf conflicts, would be provided. This may also include providing the landowner with various forms of noninjurious behavior-modification materials, such as flashing lights, noise makers, temporary fencing, and fladry (a string of flags used to contain or exclude wild animals). Monetary compensation is also provided for all verified and probable losses of domestic animals and for a portion of documented missing calves (WI DNR 2006a, pp. 22–23). The compensation is made at full market value of the animal (up to a limit of $2,500 for dogs) and can include veterinarian fees for the treatment of injured animals (WI DNR 2006c 12.54). Current Wisconsin law requires the continuation of the compensation payment for wolf depredation regardless of Federal listing or delisting of the species (WI DNR 2006c 12.50). In recent years, annual depredation compensation payments have ranged from $91,000 (2009) to $256,000 (2017). From 1985 through April, 2018, the WI DNR had spent over $2,378,000 on reimbursement for damage caused by wolves in the State, with 60 percent of that total spent over the last 10 years (since 2009) (*https://dnr.wi.gov/topic/wildlifehabitat/wolf/documents/WolfDamagePayments.pdf*).

For depredation incidents in Wisconsin Zones 1 through 3, where all wolf packs currently reside, wolves may be trapped by USDA–Wildlife Services or Wisconsin Department of Natural Resources personnel and, if feasible, translocated and released at a point distant from the depredation site. If wolves are captured adjacent to an Indian reservation or a large block of public land, the animals may be translocated locally to that area. Long-distance translocating of depredating wolves has become increasingly difficult in Wisconsin and is likely to be used infrequently in the future as long as the off-reservation wolf population is above 350 animals. In most wolf-depredation cases where technical assistance and nonlethal methods of behavior modification are judged to be ineffective, wolves would be shot or trapped and euthanized by Wildlife Services or DNR personnel. Trapping and euthanizing would be conducted within a 1-mi (1.6-km) radius of the depredation in Zones 1 and 2, and within a 5-mi (8-km) radius in Zone 3. There is no distance limitation for depredation-control trapping in Zone 4, and all wolves trapped in Zone 4 would be euthanized, rather than translocated (WI DNR 2006a, pp. 22–23).

Full authority to conduct lethal depredation control has not been allowed in Wisconsin (due to the listed status of the wolf as an endangered species) except for short periods of time. So we have evaluated post-delisting lethal depredation control based upon verified depredation incidents over the last decade and the impacts of the implementation of similar lethal control of depredating wolves under 50 CFR 17.40(d) for Minnesota, § 17.40(o) for Wisconsin and Michigan, and section 10(a)(1)(A) of the Act for Wisconsin and Michigan. Under those authorities, WI DNR and Wildlife Services trapped and euthanized 17 wolves in 2003; 24 in 2004; 29 in 2005; 18 in 2006; 37 in 2007; 39 in 2008; 9 in 2009; and 16 in 2010 (WI DNR 2006a, p. 32; Wydeven *et al.* 2009a, pp. 6–7; Wydeven *et al.* 2010, p. 15; Wydeven *et al.* 2011, p. 3).

Although these lethal control authorities applied to Wisconsin and Michigan DNRs for only a portion of 2003 (April through December) and 2005 (all of January for both States; April 1 and April 19, for Wisconsin and Michigan respectively, through September 13), they covered nearly all of the verified wolf depredations during

2003–05, and thus provide a reasonable measure of annual lethal depredation control. For 2003, 2004, and 2005, this represents 5.1 percent, 6.4 percent, 7.4 percent (including the several possible wolf-dog hybrids), respectively, of the late-winter population of Wisconsin wolves during the previous winter. This level of lethal depredation control was followed by a wolf population increase of 11 percent from 2003 to 2004, 17 percent from 2004 to 2005, and 7 percent from 2005 to 2006 (Wydeven and Jurewicz 2005, p. 5; Wydeven *et al.* 2006, p. 10). Limited lethal-control authority was granted to WI DNR for 3.5 months in 2006 by a section 10 permit, resulting in removal of 18 wolves (3.9 percent of the winter wolf population) (Wydeven *et al.* 2007, p. 7).

Lethal depredation control was again authorized in the State while wolves were delisted in 2007 (9.5 months) and 2008 (9 months). During those times, 40 and 43 wolves, respectively, were killed for depredation control (by Wildlife Services or by legal landowner action), representing 7 and 8 percent of the late-winter population of Wisconsin wolves during the previous year. This level of lethal depredation control was followed by a wolf population increase of 0.5 percent from 2007 to 2008, and 12 percent from 2008 to 2009 (Wydeven and Wiedenhoeft 2008, pp. 19–22; Wydeven *et al.* 2009a, p. 6). Authority for lethal control on depredating wolves occurred for only 2 months in 2009. During that time, eight wolves were euthanized for depredation control by USDA–Wildlife Services, and one wolf was shot by a landowner; additionally, later in 2009 after re-listing, a wolf was captured and euthanized by USDA–Wildlife Services for human safety concerns (Wydeven *et al.* 2010, p. 15). Thus in 2009, 10 wolves, or 2 percent of the winter wolf population, was removed in control activities.

In 2010, authority for lethal control of wolves depredating livestock was not available in Wisconsin, but 16 wolves or 2 percent of the winter population were removed for human-safety concerns (Wydeven *et al.* 2011, p. 3). The Wisconsin wolf population in winter 2010–11 grew to 687 wolves, an increase of 8 percent from the wolf population in winter 2009–10 (Wydeven *et al.* 2010, pp. 12–13). When wolves were again delisted from January 2012 through December 2014, a total of 164 wolves were killed under authorized lethal depredation control (McFarland and Wiedenhoeft 2013, p. 9; Wiedenhoeft *et al.* 2014, p. 10; Wiedenhoeft *et al.* 2015, p. 10). It is more difficult to evaluate the effects attributed specifically to depredation control over that time, as the State also implemented a regulated public harvest those years; however, information from previous years where depredation control was the primary change in management provides strong evidence that this form and magnitude of depredation control would not adversely affect the viability of the Wisconsin wolf population. The locations of depredation incidents provide additional evidence that lethal control would not have an adverse impact on the State's wolf population. Most livestock depredations are caused by packs near the northern forest–farm land interface. Few depredations occur in core wolf range and in large blocks of public land. Thus, lethal depredation-control actions would not affect most of the Wisconsin wolf population (WI DNR 2006a, p. 30).

One substantive change to lethal control that would result from Federal delisting is the ability of a small number of private landowners, whose farms have a history of recurring wolf depredation, to obtain limited-duration permits from Wisconsin Department of Natural Resources to kill a limited number of depredating wolves on land they own or lease, based on the size of the pack causing the local depredations (WI DNR 2008, p. 8). Such permits would be issued to: (1) Landowners with verified wolf depredations on their property within the last 2 years; (2) landowners within 1 mile (1.6 km) of properties with verified wolf depredations during the calendar year; (3) landowners with vulnerable livestock within WI DNR-designated proactive control areas; (4) landowners with human safety concerns on their property, and (5) landowners with verified harassment of livestock on their property (WI DNR 2008, p. 8). Limits on the number of wolves to control would be based on the estimated number of wolves in the pack causing depredation problems.

During the 19 months in 2007 and 2008 when wolves were federally delisted, the DNR issued 67 such permits, resulting in 2 wolves being killed. Some landowners received permits more than once, and permits were issued for up to 90 days at a time and restricted to specific calendar years. In addition, landowners and lessees of land statewide would be allowed without obtaining a permit to kill a wolf ''in the act of killing, wounding, or biting a domestic animal.'' The incident must be reported to a conservation warden within 24 hours, and the landowners are required to turn any dead wolves over to the WI DNR (WI DNR 2006a, pp. 22–23; WI DNR 2008, p. 6). During that same 19-month time period, landowners killed a total of five wolves under that authority. One wolf was shot in the act of attack on domestic animals during the 2 months when wolves were delisted in 2009; then 38 wolves were legally shot by landowners during the 35 months wolves were delisted from 2012–2014. The death of these 46 additional wolves—which accounted for less than 3 percent of the State's wolves in any year—did not affect the viability of the population.

Another potential substantive change after delisting would be proactive trapping or ''intensive control'' of wolves in sub-zones of the larger wolf-management zones (WI DNR 2006a, pp. 22–23). Triggering actions and type of controls planned for these ''proactive control areas'' are listed in the WI DNR depredation-control guidelines (WI DNR 2008, pp. 7–9). Controls on these actions would be considered on a case-by-case basis to address specific problems, and would be carried out only in areas that lack suitable habitat, have extensive agricultural lands with little forest interspersion, in urban or suburban settings, and only when the State wolf population is well above the management goal of 350 wolves outside Indian reservations in late-winter surveys. The use of intensive population management in small areas would be adapted as experience is gained with implementing and evaluating localized control actions (Wydeven 2006, pers. comm.). We are confident that the number of wolves killed by these actions would not affect the long-term viability of the Wisconsin wolf population, because generally less than 15 percent of packs cause depredations that would initiate such controls, and ''proactive'' controls would be carried out only if the State's late-winter wolf population exceeds 350 animals outside Indian reservations.

The State's current guidelines for conducting depredation-control actions say that no control trapping would be conducted on wolves that kill ''dogs that are free roaming, roaming at large, hunting, or training on public lands, and all other lands except land owned or leased by the dog owner'' (WI DNR 2008, p. 5). Controls would be applied on wolves depredating pet dogs attacked near homes and wolves attacking livestock. Because of these State-imposed limitations, we conclude that lethal control of wolves depredating on hunting dogs would be rare and, therefore, would not be a significant additional source of mortality in Wisconsin. Lethal control of wolves that attack captive deer is included in the WI DNR depredation-control program,

because farm-raised deer are considered to be livestock under Wisconsin law (WI DNR 2008, pp. 5–6; 2006c, 12.52). However, Wisconsin regulations for deer farm fencing have been strengthened, and it is unlikely that more than an occasional wolf would need to be killed to end wolf depredations inside deer farms in the foreseeable future. Claims for wolf depredation compensation are rejected if the claimant is not in compliance with regulations regarding farm-raised-deer fencing or livestock-carcass disposal (Wisconsin Statutes 90.20 & 90.21, WI DNR 2006c 12.54).

Data from verified wolf depredations in recent years indicate that depredation on livestock is likely to increase as long as the Wisconsin wolf population increases in numbers and range. Wolf packs in more marginal habitat with high acreage of pasture land are more likely to become depredators (Treves *et al.* 2004, pp. 121–122). Most large areas of forest land and public lands are included in Wisconsin Wolf Management Zones 1 and 2, and they have already been colonized by wolves. Therefore, new areas likely to be colonized by wolves in the future would be in Zones 3 and 4, where they would be exposed to much higher densities of farms, livestock, and residences. During 2008, of farms experiencing wolf depredation, 25 percent (8 of 32) were in Zone 3, yet only 4 percent of the State wolf population occurs in this zone (Wydeven *et al.* 2009a, p. 23). Further expansion of wolves into Zone 3 would likely lead to an increase in depredation incidents and an increase in lethal control actions against Zone 3 wolves. However, these Zone 3 mortalities would have no impact on wolf population viability in Wisconsin because of the much larger wolf populations in Zones 1 and 2.

We anticipate that under the management laid out in the Wisconsin Wolf Management Plan the wolf population in Zones 1 and 2 would continue to greatly exceed the recovery goal in the Recovery Plan for the Eastern Timber Wolf of 200 late-winter wolves for an isolated population and 100 wolves for a subpopulation connected to the larger Minnesota population, regardless of the extent of wolf mortality from all causes in Zones 3 and 4. Ongoing annual wolf population monitoring by WI DNR would provide timely and accurate data to evaluate the effects of wolf management under the Wisconsin Plan.

Post-delisting Regulated Harvest in Wisconsin—A regulated public harvest of wolves is acknowledged in the Wisconsin Wolf Management Plan and its updates as a potential management technique (WI DNR 1999, appendix D; 2006c, p. 23). Wisconsin Act 169 was enacted in April 2012, following Federal delisting of wolves earlier that year. The law reclassified wolves in Wisconsin as a game species and directed the WI DNR to establish a harvest season in 2012. The harvest season was set from October 15–February 28 with zones closing as individual quotas are met. The WI DNR holds the authority to determine harvest zones and set harvest quotas.

Harvest quotas for the first season in 2012–13 were designed to begin reducing the population toward the established objective, and the harvest zones were designed to focus harvest in areas of highest human conflict with lower harvest rates in areas of primary wolf habitat. State-licensed hunters and trappers were not allowed permits within the reservation boundaries of the Bad River, Red Cliff, Lac Courte Oreilles, Lac Du Flambeau, Menominee, and Stockbridge-Munsee reservations, and separate quotas were set for these ceded territories. The Wisconsin Natural Resources Board established a total quota of 201 wolves (broken into a State-licensed quota of 116 wolves and a tribal quota of 85 wolves). A total of 117 wolves were harvested during that first season, all under the State licenses (Tribes did not authorize tribal members to harvest wolves within reservation boundaries). In 2013–14, the total quota was 275 wolves; a State-licensed quota of 251, and a tribal quota of 24. That year, 257 wolves were harvested. The 2014–15 wolf quota was reduced to 156 (a 57-percent reduction from the 2013–14 wolf quota), and 154 wolves were harvested that season (a 60-percent decrease from the 2013–14 harvest.

Regardless of the methods used to manage wolves in the State, the Wisconsin Department of Natural Resources is committed to maintaining a wolf population at 350 wolves outside of Indian reservations, which translates to a statewide population of 361 to 385 wolves in late winter. No harvest would be allowed if the wolf population fell below this goal (WI DNR 1999, pp. 15, 16). Also, the fact that the Wisconsin Plan calls for State re-listing of the wolf as a threatened species if the population falls to fewer than 250 for 3 years provides a strong assurance that any public harvest is not likely to threaten the persistence of the population (WI DNR 1999, pp. 15–17). Based on wolf population data, the current Wisconsin Plan and the 2006 updates, we conclude that any public harvest plan would continue to maintain the State wolf population well above the recovery goal of 200 wolves in late winter.

The Michigan Wolf Management Plan—The 2015 updated Michigan Plan describes the wolf recovery goals and management actions needed to maintain a viable wolf population in the Upper Peninsula of Michigan, while facilitating wolf-related benefits and minimizing conflicts. The updated Michigan Plan contains new scientific information related to wolf management, updated information on the legal status of wolves, clarifications related to management authorities and decisionmaking, and updated strategic goals, objectives, and management actions informed by internal evaluation and responses and comments received from stakeholders. The updated plan retains the four principal goals of the 2008 plan, which are to ''(1) maintain a viable Michigan wolf population above a level that would warrant its classification as threatened or endangered (more than 200 wolves); (2) facilitate wolf-related benefits; (3) minimize wolf-related conflicts; and (4) conduct science-based wolf management with socially acceptable methods'' (MI DNR 2015, p. 16). The Michigan Plan details wolf-management actions, including public education and outreach activities, annual wolf population and health monitoring, research, depredation control, ensuring adequate legal protection for wolves, and prey and habitat management. It does not address the potential need for wolf recovery or management in the Lower Peninsula, nor wolf management within Isle Royale National Park (where the wolf population is fully protected by the National Park Service).

As with the Wisconsin Plan, the Michigan Department of Natural Resources has chosen to manage the State's wolves as though they are an isolated population that receives no genetic or demographic benefits from immigrating wolves, even though their population will continue to be connected with populations in Minnesota, Wisconsin, and Canada. The Michigan wolf population must exceed 200 wolves in order to achieve the Plan's first goal of maintaining a viable wolf population in the Upper Peninsula. This number is consistent with the Federal Recovery Plan for the Eastern Timber Wolf's definition of a viable, isolated wolf population (USFWS 1992, p. 25). The Michigan Plan, however, clearly states that 200 wolves is not the target population size, and that a larger population may be necessary to meet the other goals of the Plan. Therefore, the State would maintain a wolf population that would ''provide all of the ecological and social benefits valued

by the public'' while ''minimizing and resolving conflicts where they occur'' (MI DNR 2015, p. 17). We strongly support this approach, as it provides assurance that a viable wolf population would remain in the Upper Peninsula regardless of the future fate of wolves in Wisconsin or Ontario.

The Michigan Plan identifies wolf population monitoring as a priority activity, and specifically states that the Michigan Department of Natural Resources would monitor wolf abundance twice a year for at least 5 years post-delisting (MI DNR 2015, p. 26). This includes monitoring to assess wolf presence in the northern Lower Peninsula. From 1989 through 2006, the MI DNR attempted to count wolves throughout the entire Upper Peninsula. As the wolf population increased, this method became more difficult. In the winter of 2006–07, the MI DNR implemented a new sampling approach based on an analysis by Potvin *et al.* (2005, p. 1668) to increase the efficiency of the State survey. The new approach is based on a geographically based stratified random sample and produces an unbiased, regional estimate of wolf abundance. The Upper Peninsula was stratified into three sampling areas, and within each stratum the DNR intensively surveys roughly 40 to 50 percent of the wolf habitat area annually. Computer simulations have shown that such a geographically stratified monitoring program would produce unbiased and precise estimates of the total wolf population, which can be statistically compared to estimates derived from the previous method to detect significant changes in the Upper Peninsula wolf population (Beyer *in litt.* 2006, see attachment by Drummer; Lederle *in litt.* 2006; Roell *et al.* 2009, p. 3).

Another component of wolf population monitoring is monitoring wolf health. The MI DNR would continue to monitor the impact of parasites and disease on the viability of wolf populations in the State through necropsies of dead wolves and analyzing biological samples from captured live wolves. Prior to 2004, MI DNR vaccinated all captured wolves for canine distemper and parvovirus and treated them for mange. These inoculations were discontinued to provide more natural biotic conditions and to provide biologists with an unbiased estimate of disease-caused mortality rates in the population (Roell *in litt.* 2005). Since diseases and parasites are not currently a significant threat to the Michigan wolf population, the MI DNR is continuing the practice of not actively managing disease. If monitoring indicates that diseases or parasites may pose a threat to the wolf population, the MI DNR would again consider more active management similar to that conducted prior to 2004 (MI DNR 2015, p. 35).

The Michigan Plan includes maintaining habitat and prey necessary to sustain a viable wolf population in the State as a management component. This includes maintaining prey populations required for a viable wolf population while providing for sustainable human uses, maintaining habitat linkages to allow for wolf dispersal, and minimizing disturbance at known, active wolf dens (MI DNR 2015, pp. 32–34).

To minimize illegal take, the Michigan Plan calls for enacting and enforcing regulations to ensure adequate legal protection for wolves in the State. Under State regulations, wolves could be classified as a threatened, endangered, game, or protected animal, all of which prohibit killing (or harming) the species except under a permit, license, or specific conditions. Michigan removed gray wolves from the State's threatened and endangered species list in 2009 and classified the species as a game animal in 2015. Game-animal status allows but does not require the establishment of a regulated harvest season. The Michigan Plan states that regulations would be reviewed, modified, or enacted as necessary to provide the wolf population with appropriate levels of protection with the following possible actions: (1) Reclassify wolves as endangered or threatened under State regulations if population size declines to 200 or fewer wolves; (2) review, modify, recommend, and/or enact regulations, as necessary, to ensure appropriate levels of protection for the wolf population; and (3) if necessary to avoid a lapse in legal protection, amend the Wildlife Conservation Order to designate wolves as a protected animal (MI DNR 2015, p. 28).

The Michigan Plan emphasizes the need for public information and education efforts that focus on living with a recovered wolf population and ways to manage wolves and wolf–human interaction (both positive and negative) (MI DNR 2015, pp. 22–25). The Plan also recommends continuing important research efforts, continuing reimbursement for depredation losses, minimizing the impacts of captive wolves and wolf-dog hybrids on the wild wolf population, and citizen stakeholder involvement in the wolf-management program (MI DNR 2015, pp. 27, 52–53, 55–56, 60).

The Michigan Plan calls for establishing a wolf-management stakeholder group that would meet annually to monitor the progress made toward implementing the Plan. Furthermore, the Plan will be reviewed and updated at 5-year intervals to address ''ecological, social, and regulatory'' changes (MI DNR 2015, pp. 60–61). The plan also addresses currently available and potential new sources of funding to offset costs associated with wolf management (MI DNR 2015, pp. 61–62). The MI DNR has long been an innovative leader in wolf-recovery efforts, exemplified by its initiation of the nation's first attempt to reintroduce wild wolves to vacant historical wolf habitat in 1974 (Weise *et al.* 1975). The MI DNR's history of leadership in wolf recovery and its repeated written commitments to ensure the continued viability of a Michigan wolf population above a level that would trigger State or Federal listing as threatened or endangered further reinforces that the 2015 Michigan Wolf Management Plan would provide adequate regulatory mechanisms for Michigan wolves. The DNR's primary goal remains to conduct management to maintain the wolf population in Michigan above the minimum size that is biologically required for a viable, isolated population and to provide for ecological and social benefits valued by the public while resolving conflicts where they occur (MI DNR 2015, p. 16).

Depredation Control in Michigan—Data from Michigan show a general increase in confirmed events of wolf depredations on livestock over the past two decades, with an average of 3.4 animals killed annually from 1998 through 2002, an average of 10.6 annually in 2003–2007; an average of 38.2 annually from 2008–2012; and an average of 19.2 annually in 2013–2017. Over 80 percent of the depredation events were on cattle, with the rest on sheep, poultry, rabbits, goats, horses, swine, and captive deer (Roell *et al.* 2009, pp. 9, 11; Beyer *in litt.* 2018).

Michigan has not experienced as high a level of attacks on dogs by wolves as Wisconsin, although a slight increase in such attacks has occurred over the last decade. Yearly losses vary, and actions of a single pack of wolves can be an important influence. In Michigan, there is not a strong relationship between wolf depredation on dogs and wolf abundance (Roell *et al.* 2010, p. 7). The number of dogs killed in the State during the 15 years from 1996 to 2010 totaled 34; that number increased to 70 during the 7-year period from 2011 through 2017 (Beyer *in litt.* 2018). The majority of the wolf-related dog deaths

involved hounds used to hunt bears. Similar to Wisconsin, MI DNR has guidelines for its depredation-control program, stating that lethal control would not be used when wolves kill dogs that are free roaming, hunting, or training on public lands. Lethal control of wolves, however, would be considered if wolves have killed confined pets and remain in the area where more pets are being held (MI DNR 2005a, p. 6). However, in 2008, the Michigan Legislature passed a law that would allow dog owners or their designated agents to remove, capture, or, if deemed necessary, use lethal means to destroy a gray wolf that is in the act of preying upon the owner's dog, which includes dogs free roaming or hunting on public lands.

During the several years that lethal control of depredating wolves had been conducted in Michigan, there was no evidence of resulting adverse impacts to the maintenance of a viable wolf population in the Upper Peninsula. MI DNR and USDA–Wildlife Services killed 50 wolves in response to depredation events during the time period when permits or special rules were in effect or while wolves were not on the Federal lists of endangered and threatened species (Roell *et al.* 2010, p. 8). In 2008, Michigan passed two House bills that would become effective after Federal delisting. Those bills authorized a livestock or dog owner (or a designated agent) to ''remove, capture, or use lethal means to destroy a wolf that is in the act of preying upon'' the owner's livestock or dog. During the 2 months that wolves were federally and State delisted in 2009, no wolves were killed under these authorizations; 32 wolves were killed under these authorities from 2012 through 2014 (Beyer *in litt.* 2018). The numbers of wolves killed each year for depredation control are as follows: 4 (2003), 5 (2004), 2 (2005), 7 (2006), 14 (2007), 8 (2008), 1 (during 2 months in 2009), 18 (2012), 10 (2013), and 13 (2014) (Beyer *et al.* 2006, p. 88; Roell *in litt.* 2006, p. 1; Roell *et al.* 2010, p. 19; Beyer *in litt.* 2018). This represents 0.2 percent (2009) to 2.7 percent (2007) of the Upper Peninsula's late-winter population of wolves during the previous winter. During the years where depredation control took place absent a regulated public harvest, the wolf population increased from 2 percent (2007–2008) to 17 percent (2006–2007) despite the level of depredation control, demonstrating that the wolf population continues to increase at a healthy rate (Huntzinger *et al.* 2005, p. 6; MI DNR 2006, Roell *et al.* 2009, p. 4).

Post-delisting Depredation Control in Michigan—Following Federal delisting, wolf depredation control in Michigan would be carried out according to the 2015 Michigan Wolf Recovery and Management Plan (MI DNR 2015) and any Tribal wolf-management plans that may be developed in the future for reservations in occupied wolf range.

To provide depredation-control guidance when lethal control is an option, Michigan Department of Natural Resources has developed detailed instructions for incident investigation and response (MI DNR 2005a). Verification of wolf depredation incidents will be conducted by MI DNR or USDA–APHIS–Wildlife Services personnel (working under a cooperative agreement with MI DNR or at the request of a Tribe, depending on the location) who have been trained in depredation investigation techniques. The MI DNR specifies that the verification process would use the investigative techniques that have been developed and successfully used in Minnesota by Wildlife Services (MI DNR 2005a, append. B, pp. 9–10). Following verification, one or more of several options would be implemented to address the depredation problem. Technical assistance, consisting of advice or recommendations to reduce wolf conflicts, would be provided. Technical assistance may also include providing to the landowner various forms of noninjurious behavior modification materials, such as flashing lights, noise makers, temporary fencing, and fladry.

Trapping and translocating depredating wolves has been used in the past, resulting in the translocation of 23 Upper Peninsula wolves during 1998–2003 (Beyer *et al.* 2006, p. 88), but as with Wisconsin, suitable relocation sites are becoming rarer, and there is local opposition to the release of translocated depredators. Furthermore, none of the past translocated depredators have remained near their release sites, making this a questionable method to end the depredation behaviors of these wolves (MI DNR 2005a, pp. 3–4). Therefore, reducing depredation problems by relocation is no longer recommended as a management tool in Michigan (MI DNR 2008, p. 57).

Lethal control of depredating wolves is likely to be the most common future response in situations when improved livestock husbandry and wolf-behavior-modification techniques (for example, flashing lights, noise-making devices) are judged to be inadequate. As wolf numbers continue to increase on the Upper Peninsula, the number of verified depredations will also increase, and will probably do so at a rate that exceeds the rate of wolf population increase. This will occur as wolves increasingly disperse into and occupy areas of the Upper Peninsula with more livestock and more human residences, leading to additional exposure to domestic animals. In a previous application for a lethal take permit under section 10(a)(1)(A) of the Act, MI DNR received authority to euthanize up to 10 percent of the late-winter wolf population annually (MI DNR 2005b, p. 1). However, based on 2003–05 and 2007–09 depredation data, it is likely that significantly less than 10 percent lethal control would be needed over the next several years.

The Michigan Plan provides recommendations to guide management of various conflicts caused by wolf recovery, including depredation on livestock and pets, human safety, and public concerns regarding wolf impacts on other wildlife. We view the Michigan Plan's depredation and conflict control strategies to be conservative, in that they commit to nonlethal depredation management whenever possible, oppose preventative wolf removal where problems have not yet occurred, encourage incentives for best management practices that decrease wolf–livestock conflicts without affecting wolves, and support closely monitored and enforced take by landowners of wolves ''in the act of livestock depredation'' or under limited permits if depredation is confirmed and nonlethal methods are determined to be ineffective. Based on these components of the revised Michigan Plan and the stated goal for maintaining wolf populations at or above recovery goals, the Service concludes that any wolf-management changes implemented following delisting would not be implemented in a manner that results in significant reductions in Michigan wolf populations. The MI DNR remains committed to ensuring a viable wolf population above a level that would trigger re-listing as either threatened or endangered in the future (MI DNR 2015, p. 8).

Similar to Wisconsin, Michigan livestock owners are compensated when they lose livestock as a result of a confirmed wolf depredation. Currently there are two complementary compensation programs in Michigan, one funded by the MI DNR and implemented by Michigan Department of Agriculture (MI DA) and another set up through donations (from Defenders of Wildlife and private citizens) and administered by the International Wolf Center (IWC), a nonprofit organization. From the inception of the program to

2000, MI DA has paid 90 percent of full market value of depredated livestock at the time of loss. The IWC account was used to pay the remaining 10 percent from 2000 to 2002 when MI DA began paying 100 percent of the full market value of depredated livestock. The IWC account continues to be used to pay the difference between value at time of loss and the full fall market value for depredated young-of-the-year livestock, and together the two funds have provided nearly $183,000 in livestock-loss compensation through 2017 (Roell et al. 2010, p. 15; Beyer *in litt.* 2018). Neither of these programs provides compensation for pets or for veterinary costs to treat wolf-inflicted livestock injuries. The MI DNR plans to continue cooperating with MI DA and other organizations to maintain the wolf-depredation-compensation program (MI DNR 2008, pp. 59–60).

Post-delisting Regulated Harvest in Michigan—Although the Michigan Plan itself does not determine whether a public harvest would be used as a management strategy, it does discuss developing ''socially and biologically responsible management recommendations regarding public harvest of wolves'' (MI DNR 2015, p. 56). The Michigan Plan discusses developing recommendations regarding public harvest for two separate purposes: To reduce wolf-related conflicts and for reasons other than managing wolf-related conflicts (*e.g.,* recreational and utilitarian purposes). With regard to implementing a public harvest for recreational or utilitarian purposes, the Michigan Plan identifies the need to gather and evaluate biological and social information, including the biological effects and the public acceptability of a general wolf harvest (MI DNR 2015, p. 60). A public harvest during a regulated season requires that wolves be classified as game animals in Michigan (they were classified as such in 2015). With wolves classified as game animals, the Michigan Natural Resource Commission (NRC) has the exclusive authority to enact regulations pertaining to the methods and manner of public harvest. Although the decisions regarding establishment of a harvest season would be made by the NRC, the MI DNR would be called upon to make recommendations regarding socially and biologically responsible public harvest of wolves. Michigan held a regulated public hunting season in 2014 that took into consideration the recommendations of the MI DNR. Based on those recommendations, the Michigan NRC established quotas for that season based on zones in the Upper Peninsula, with a quota of 16 wolves in the far western part of the peninsula, 19 in 4 central counties, and 8 in the eastern part of the peninsula. Twenty-two wolves were taken during that 2014 season.

Post-Delisting Management in the West Coast States

Wolves are classified as endangered under the Washington State Endangered Species Act (WAC 220–610–010). Unlawful taking (when a person hunts, fishes, possesses, maliciously harasses or kills endangered fish or wildlife, and the taking has not been authorized by rule of the commission) of endangered fish or wildlife is prohibited in Washington (RCW 77.15.120). Wolves in California are similarly classified as endangered under the California Endangered Species Act (CESA; California Fish and Game Commission 2014, entire). Under CESA, take (defined as hunt, pursue, catch, capture, kill, or attempts to hunt, pursue, catch, capture, or kill) of listed wildlife species is prohibited (California Fish and Game Codes § 86 and § 2080). Wolves in Oregon have achieved recovery objectives and were delisted from the State Endangered Species Act in 2015. Wolves in Oregon remain protected by the State Plan and its associated rules, and Oregon's wildlife policy. The wildlife policy states ''that wildlife shall be managed to prevent the serious depletion of any indigenous species'' and includes seven coequal management goals (ORS 496.012) (ODFW 2017, p. 6). Although it remains a possibility for the future, there are no current plans to initiate a hunting season, and regulatory mechanisms remain in place through the State plan and Oregon statute to ensure a sustainable wolf population.

Oregon, Washington, and California also have adopted wolf-management plans intended to provide for the conservation and reestablishment of wolves in these States (ODFW 2010, entire; Wiles *et al.* 2011, entire; CDFW 2016a, entire; 2016b, entire). These plans include population objectives, education and public outreach goals, damage-management strategies, and monitoring and research plans. Wolves will remain on State endangered species lists in Washington and California until recovery objectives have been reached. Once recovery objectives have been achieved, the process for delisting wolves at the State level will be initiated. Once removed, the States have the authority to consider using regulated harvest to manage wolf populations. All three State plans also recognize that management of livestock conflicts is a necessary component of wolf management (ODFW 2010, p. 40; Wiles *et al.* 2011, p. 72; CDFW 2016a, p. 4). Control options are currently limited to preventative and nonlethal methods within the federally listed portions of Oregon, Washington, and California. If Federal delisting occurs, guidelines outlined in each State's plan define conditions under which depredating wolves can be lethally removed by agency officials (CDFW 2016b, pp. 278–285; ODFW 2010, pp. 43–54; Wiles *et al.* 2011, pp. 72–94).

The Oregon Wolf Management Plan—The Oregon Wolf Conservation and Management Plan was developed prior to wolves becoming established in Oregon. The plan, first finalized in 2005, contains provisions that require it to be updated every 5 years. The first revision occurred in 2010, and a subsequent revision is presently under review. The Oregon Fish and Wildlife Commission provided a set of guiding principles to a newly formed Wolf Advisory Committee, which was directed to work on plan development. The guiding principles included writing a plan based on the conservation of wolves, incorporating public concerns and comments, not allowing reintroduction of wolves into Oregon, providing flexibility for management while conserving wolves, seeking assistance for livestock producers for wolf depredation, and assessing of impacts to prey populations. Key stakeholder groups are invited to participate in reviews of revisions to the plan. Stakeholders include local government, Tribes, non-governmental organizations, State agencies and organizations, and Federal agencies.

The Oregon plan includes two management zones that roughly divide the State into western and eastern halves. This division line is further to the west of the line that delineates the listed and non-listed portions of Oregon. Each zone has a separate population objective of seven breeding pairs (ODFW 2017, p. 16). Within each zone, management phases (Phase I, Phase II, and Phase III) are used to assess population objectives, which in turn influence conservation and management objectives.

Phase I includes a conservation population objective of obtaining four breeding pairs for 3 consecutive years; upon reaching this objective, delisting of wolves statewide may be initiated. The ODFW defines a breeding pair as a pack of wolves with an adult male, an adult female, and at least two pups surviving to the end of December (ODFW 2010, p. 17). This population objective was met in 2014 in the eastern

management zone, and wolves were State delisted in Oregon in 2015. Wolves in the eastern management zone were then managed under Phase II (ODFW 2016, p. 2). Wolves in the western management zone have yet to reach this conservation objective. Despite State delisting, wolves in the western management zone (currently in Phase I) are still managed with a level of protection mimicking that of Oregon ESA protections for wolves.

Phase II management actions work towards a management population objective of seven breeding pairs in the eastern management zone for 3 consecutive years. During this phase populations are managed to prevent declines that could result in re-listing under the Oregon ESA. This Phase II management population objective was met in 2016, which resulted in the transition of management to Phase III for the eastern management zone (ODFW 2017, p. 2).

Phase III acts to set a balance such that populations do not decline below Phase II objectives, but also do not reach unmanageable levels resulting in conflicts with other land uses. Phase III is a maintenance phase. While the 2010 plan does not include a minimum or maximum population level for wolves in Oregon, the plan leaves room for development of population thresholds in future planning efforts (ODFW 2010, p. 28). Similarly, legal harvest of wolves is not included in Phase III of the 2010 plan; however, Phase III does provide more management flexibility in the case of depredating wolves (ODFW 2010, p. 45). Currently, hunting of wolves is not permitted in Oregon.

The Washington Wolf Management Plan—The 2011 Wolf Conservation and Management Plan for Washington was developed in response to the State endangered status for the species, the expectation that the wolf population in Washington would be increasing through natural dispersal of wolves from adjacent populations, and the eventual return of wolf management to the State after Federal delisting. The purpose of the plan is to facilitate reestablishment of a self-sustaining population of gray wolves in Washington and to encourage social tolerance for the species by addressing and reducing conflicts. An advisory Wolf Working Group was appointed at the outset to give recommendations on the plan. In addition, the plan underwent extensive peer and public review prior to finalization.

The Washington Plan provides recovery goals for downlisting and delisting the species under Washington State law, and identifies strategies to achieve recovery and manage conflicts with livestock and ungulates. Recovery objectives are defined as numbers of successful breeding pairs that are maintained on the landscape for 3 consecutive years, with a set geographic distribution within 3 specified recovery regions: The Eastern Washington, Northern Cascades, and Southern Cascades and Northwest Coast (Wiles *et al.* 2011, p. 60 figure 9). A successful breeding pair of wolves is defined in the Washington Plan as an adult male and an adult female with at least two pups surviving to December 31 in a given year (Wiles *et al.* 2011, p. 58). Specific target numbers and distribution for downlisting and delisting within the three recovery regions identified in the Washington Plan are as follows:

- To reclassify from State endangered to State threatened status: 6 successful breeding pairs present for 3 consecutive years, with 2 successful breeding pairs in each of the three recovery regions.
- To reclassify from State threatened to State sensitive status: 12 successful breeding pairs present for 3 consecutive years, with 4 successful breeding pairs in each of the three recovery regions.
- To delist from State sensitive status: 15 successful breeding pairs present for 3 consecutive years, with 4 successful breeding pairs in each of the three recovery regions and 3 successful breeding pairs anywhere in the State.

In addition to the delisting objective of 15 successful breeding pairs distributed in the three geographic regions for 3 consecutive years, an alternative delisting objective is also established whereby the gray wolf will be considered for delisting when 18 successful breeding pairs are present, with 4 successful breeding pairs in the Eastern Washington region, 4 successful breeding pairs in the Northern Cascades region, 4 successful breeding pairs distributed in the Southern Cascades and Northwest Coast region, and 6 anywhere in the State.

After State delisting, wolves could be reclassified as a game animal through the Washington Fish and Wildlife Commission's public process. WDFW intends to develop a new plan for managing wolves following Federal and State delisting. Any proposals to hunt wolves would go through a public process with the Fish and Wildlife Commission (Wiles *et al.* 2011, pp. 70–71).

The California Wolf Management Plan—The 2016 *Conservation Plan for Gray Wolves in California* was developed in anticipation of the return of wolves to California. The CDFW worked with stakeholder groups in 2014 and 2015 during plan development. Stakeholders included local government, non-governmental organizations, State agencies and organizations, and Federal agencies. During the planning process, CDFW and the stakeholders identified sideboards and plan goals to direct development of the State plan. These sideboards and goals included direction to develop alternatives for wolf management, no reintroduction of wolves into California, historical distribution and abundance are not achievable, conserve biologically sustainable populations, manage native ungulates for wolf and human uses, management to minimize livestock depredations, and public outreach.

The California Plan recognizes that wolf activity in the State will increase with time, and that the plan needs to be flexible to account for information that is gained during the expansion of wolves into the State. Similar to plans for other States, the California Plan uses a three-phase strategy for wolf conservation and management.

Phase I is a conservation-based strategy to account for the reestablishment of wolves under both State and Federal Endangered Species Acts. Phase I will end when there are four breeding pairs for 2 consecutive years in California. The CDFW defines a breeding pair as at least one adult male, one adult female, and at least two pups that survive to the end of December (CDFW 2016a, p. 21). California is currently in Phase I of the plan, with the Lassen Pack as the only breeding pair present for 2 consecutive years.

Phase II is expected to represent a point at which California's wolf population is growing more through reproduction of resident wolves than by dispersal of wolves from other States. This phase will conclude when there are eight breeding pairs for 2 consecutive years. During Phase II, CDFW anticipates gaining additional information and experience with wolves in the State, which will help inform future revisions to the State plan. During Phase II, flexibility for managing wolves for depredation response or predation on wild ungulates may be initiated.

Phase III is less specific due to the information available to CDFW at the time of plan development. This phase moves toward longer term management of wolves in California. Specific aspects of Phase III are more likely to be developed toward the middle of Phase II when more information on wolf distribution and abundance in the State are available. Towards the end of Phase II and the beginning of Phase III, a status review of wolves in California may be

initiated to determine if continued State listing as endangered is warranted. Currently, hunting of wolves is not permitted in California.

Tribal Management and Conservation of Wolves

Native American tribes and inter-tribal resource-management organizations have indicated to the Service that they will continue to conserve wolves on most, and probably all, Native American reservations in the primary wolf areas of the Great Lakes area. The wolf retains great cultural significance and traditional value to many Tribes and their members, and to retain and strengthen cultural connections, many tribes oppose unnecessary killing of wolves on reservations and on ceded lands, even following any Federal delisting (Hunt *in litt.* 1998; Schrage *in litt.* 1998a; Schlender *in litt.* 1998). Some Native Americans view wolves as competitors for deer and moose, whereas others are interested in harvesting wolves as furbearers (Schrage *in litt.* 1998a). Many tribes intend to sustainably manage their natural resources, wolves among them, to ensure that they are available to their descendants. Traditional natural-resource harvest practices, however, often include only a minimum amount of regulation by the Tribal governments (Hunt *in litt.* 1998).

Although not all Tribes with wolves that visit or reside on their reservations have completed management plans specific to the wolf, several Tribes have informed us that they have no plans or intentions to allow commercial or recreational hunting or trapping of the species on their lands after Federal delisting. The Red Lake Band of Chippewa Indians (Minnesota) and the Little Traverse Bay Band of Odawa Indians (Michigan) have developed wolf monitoring and/or management plans. The Service has also awarded a grant to the Ho-Chunk Nation to identify wolf habitat on reservation lands.

As a result of many past contacts with, and previous written comments from, the Midwestern Tribes and their inter-tribal natural-resource-management agencies—the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), the 1854 Authority, and the Chippewa Ottawa Treaty Authority—it is clear that their predominant sentiment is strong support for the continued protection of wolves at a level that ensures that viable wolf populations remain on reservations and throughout the treaty-ceded lands surrounding the reservations. While several Tribes stated that their members may be interested in killing small numbers of wolves for spiritual or other purposes, this would be carried out in a manner that would not affect reservation or ceded-territory wolf populations.

The Red Lake Band of Chippewa Indians (Minnesota) completed a wolf-management plan in 2010 (Red Lake Band of Chippewa Indians 2010). A primary goal of the management plan is to maintain wolf numbers at a level that will ensure the long-term survival of wolves on Red Lake lands. Key components of the plan are habitat management, public education, and law enforcement. To address human–wolf interactions, the plan outlines how wolves may be taken on Red Lake lands. Wolves thought to be a threat to public safety may be harassed at any time, and if they must be killed, the incident must be reported to tribal law enforcement. Agricultural livestock are not common on Red Lake lands, and wolf-related depredation on livestock or pets is unlikely to be a significant management issue. If such events do occur, tribal members may protect their livestock or pets by lethal means, but ''all reasonable efforts should be made to deter wolves using non-lethal means'' (Red Lake Band of Chippewa Indians 2010, p. 15). Hunting or trapping of wolves on tribal lands will be prohibited. The Reservation currently has 7 or 8 packs with an estimated 40–48 wolves within its boundaries (Red Lake Band of Chippewa Indians 2010, p. 12).

In 2009, the Little Traverse Bay Bands of Odawa Indians (LTBB) finalized a management plan for the 1855 Reservation and portions of the 1836 ceded territory in the northern Lower Peninsula of Michigan (Little Traverse Bay Bands of Odawa Indians Natural Resource Department 2009). The plan provides the framework for managing wolves on the LTBB Reservation with the goal of maintaining a viable wolf presence on the LTBB Reservation or within the northern Lower Peninsula should a population become established by (1) prescribing scientifically sound biological strategies for wolf management, research, and monitoring; (2) addressing wolf-related conflicts; (3) facilitating wolf-related benefits; and (4) developing and implementing wolf-related education and public information.

The Tribal Council of the Leech Lake Band of Minnesota Ojibwe (Council) approved a resolution that describes the sport and recreational harvest of wolves as an inappropriate use of the animal. That resolution supports limited harvest of wolves to be used for traditional or spiritual uses by enrolled Tribal members if the harvest is done in a respectful manner and would not negatively affect the wolf population. Over the last several years, the Council has been working to revise the Reservation Conservation Code to allow Tribal members to harvest some wolves after Federal delisting (Googgleye, Jr. *in litt.* 2004; Johnson *in litt.* 2011). Until this revision occurs, it is unknown whether harvest would be allowed and how a harvest might be implemented. The Tribe is currently developing a wolf-management plan (Mortensen 2011, pers. comm.). In 2005, the Leech Lake Reservation was home to an estimated 75 wolves, the largest population of wolves on a Native American reservation in the 48 conterminous States (Mortensen 2006, pers. comm.; White *in litt.* 2003). Although no recent surveys have been conducted, the number of wolves on the reservation likely remains about the same (Mortensen 2009, pers. comm.; Johnson *in litt.* 2011).

The Fond du Lac Band (Minnesota) believes that the ''well-being of the wolf is intimately connected to the well-being of the Chippewa People'' (Schrage *in litt.* 2003). In 1998, the Band passed a resolution opposing Federal delisting and any other measure that would permit trapping, hunting, or poisoning of the wolf (Schrage *in litt.* 1998b; *in litt.* 2003; 2009, pers. comm.). If the prohibition of trapping, hunting, or poisoning is rescinded, the Band's Resource Management Division would coordinate with State and Federal agencies to ensure that any wolf hunting or trapping would be ''conducted in a biologically sustainable manner'' (Schrage *in litt.* 2003).

The Red Cliff Band (Wisconsin) has strongly opposed State and Federal delisting of the gray wolf. Current Tribal law protects wolves from harvest, although harvest for ceremonial purposes would likely be permitted after Federal delisting (Symbal *in litt.* 2003).

The Menominee Indian Tribe of Wisconsin is committed to establishing a self-sustaining wolf population, continuing restoration efforts, ensuring the long-term survival of the wolf in Menominee, placing emphasis on the cultural significance of the wolf as a clan member, and resolving conflicts between wolves and humans. The Tribe has shown a great deal of interest in wolf recovery and protection. In 2002, the Tribe offered their Reservation lands as a site for translocating seven depredating wolves that had been trapped by WI DNR and Wildlife Services. Tribal natural resources staff participated in the soft release of the wolves on the Reservation and helped

with the subsequent radio-tracking of the wolves. Although by early 2005 the last of these wolves died on the reservation, the tribal conservation department continued to monitor another pair that had moved onto the Reservation, as well as other wolves near the reservation (Wydeven *in litt.* 2006). When the female of that pair was killed in 2006, Reservation biologists and staff worked diligently to raise the orphaned pups in captivity with the WI DNR and the Wildlife Science Center (Forest Lake, Minnesota) in the hope that they could later be released to the care of the adult male. However, the adult male died prior to pup release, and they were moved back to the Wildlife Science Center (Pioneer Press 2006). The Menominee Tribe continues to support wolf conservation and monitoring activity in Wisconsin.

The Keweenaw Bay Indian Community (Michigan) would continue to list the wolf as a protected animal under the Tribal Code following any Federal delisting, with hunting and trapping prohibited (Mike Donofrio 1998, pers. comm.). Furthermore, the Keweenaw Bay Community developed a management plan in 2013 that ''provides a course of action that will ensure the long-term survival of a self-sustaining, wild gray wolf (*Canis lupus*) population in the 1842 ceded territory in the western Upper Peninsula of Michigan'' (KBIC Tribal Council 2013, p. 1). At least four other Tribes (Stockbridge Munsee Community, Lac Courte Oreilles Band of Ojibwe, the Mille Lacs Band of Ojibwe, and Grand Portage Band of Lake Superior Chippewa) have indicated plans to develop Tribal wolf-management plans.

Several Midwestern Tribes (for example, the Bad River Band of Lake Superior Chippewa Indians and the LTBB) have expressed concern that Federal delisting would result in increased mortality of wolves on reservation lands, in the areas immediately surrounding the reservations, and in lands ceded by treaty to the Federal Government by the Tribes (Kiogama and Chingwa *in litt.* 2000). In 2006, a cooperative effort among tribal natural resource departments of several tribes in Wisconsin, WI DNR, the Service, and USDA Wildlife Services led to a wolf-management agreement for lands adjacent to several reservations in Wisconsin. The goal is to reduce the threats to reservation wolf packs when they are temporarily off the reservation. Other Tribes have expressed interest in such an agreement. This agreement, and additional agreements if they are implemented, provides supplementary protection to certain wolf packs in the western Great Lakes area.

The GLIFWC has stated its intent to work closely with the States to cooperatively manage wolves in the ceded territories in the core areas, and will not develop a separate wolf-management plan (Schlender *in litt.* 1998). Furthermore, the Voigt Intertribal Task Force of GLIFWC has expressed its support for strong protections for the wolf, stating ''[delisting] hinges on whether wolves are sufficiently restored and will be sufficiently protected to ensure a healthy and abundant future for our brother and ourselves'' (Schlender *in litt.* 2004).

According to the 1854 Authority, ''attitudes toward wolf management in the 1854 Ceded Territory run the gamut from a desire to see total protection to unlimited harvest opportunity.'' However, the 1854 Authority would not ''implement a harvest system that would have any long-term negative impacts to wolf populations'' (Edwards *in litt.* 2003). In comments submitted for our 2004 delisting proposal for a larger Eastern DPS of the gray wolf, the 1854 Authority stated that the Authority is ''confident that under the control of State and tribal management, wolves will continue to exist at a self-sustaining level in the 1854 Ceded Territory. Sustainable populations of wolves, their prey and other resources within the 1854 Ceded Territory are goals to which the 1854 Authority remains committed. As such, we intend to work with the State of Minnesota and other tribes to ensure successful state and tribal management of healthy wolf populations in the 1854 Ceded Territory'' (Myers *in litt.* 2004).

While there are few written Tribal protections currently in place for wolves, the highly protective and reverential attitudes that have been expressed by Tribal authorities and members have assured us that any post-delisting harvest of reservation wolves would be very limited and would not adversely affect the delisted wolf populations. Furthermore, any off-reservation harvest of wolves by tribal members in the ceded territories would be limited to a portion of the harvestable surplus at some future time. Such a harvestable surplus would be determined and monitored jointly by State and tribal biologists, and would be conducted in coordination with the Service and the Bureau of Indian Affairs (BIA), as is being successfully done for the ceded territory harvest of inland and Great Lakes fish, deer, bear, moose, and furbearers in Minnesota, Wisconsin, and Michigan. Therefore, we conclude that any future Native American take of delisted wolves will not significantly affect the viability of the wolf population, either locally or across the Great Lakes area.

The Service and the Department of the Interior recognize the unique status of the federally recognized tribes, their right to self-governance, and their inherent sovereign powers over their members and territory. Therefore, the Department, the Service, the BIA, and other Federal agencies, as appropriate, will take the needed steps to ensure that tribal authority and sovereignty within reservation boundaries are respected as the States implement their wolf-management plans and revise those plans in the future.

Furthermore, there may be tribal activities or interests associated with wolves encompassed within the tribes' retained rights to hunt, fish, and gather in treaty-ceded territories. The Department is available to assist in the exercise of any such rights. If biological assistance is needed, the Service may provide it via our field offices. Upon delisting, the Service would remain involved in the post-delisting monitoring of the wolves in the Great Lakes area, but all Service management and protection authority under the Act would end. Legal assistance would be provided to the tribes by the Department of the Interior, and the BIA would be involved, when needed. We strongly encourage the States and Tribes to work cooperatively toward post-delisting wolf management if wolves are delisted.

Consistent with our responsibilities to tribes and our goal to have the most comprehensive data available for our post-delisting monitoring, we would annually contact tribes and their designated intertribal natural resource agencies during the 5-year post-delisting monitoring period to obtain any information they wish to share regarding wolf populations, the health of those populations, or changes in their management and protection. Reservations that may have significant wolf data to provide during the post-delisting period include Bois Forte, Bad River, Fond du Lac, Grand Portage, Keweenaw Bay Indian Community, Lac Courte Oreilles, Lac du Flambeau, Leech Lake, Menominee, Oneida, Red Lake, Stockbridge-Munsee Community, and White Earth. Throughout the 5-year post-delisting monitoring period, the Service would annually contact the natural resource agencies of each of these reservations and that of the 1854 Treaty Authority and Great Lakes Indian Fish and Wildlife Commission.

Management on Federal Lands

Great Lakes Area

The five national forests with resident wolves (Superior, Chippewa, Chequamegon-Nicolet, Hiawatha, and Ottawa National Forests) in Minnesota, Wisconsin, and Michigan are all operating in conformance with standards and guidelines in their management plans that follow the 1992 Recovery Plan for the Eastern Timber Wolf's recommendations for the eastern timber wolf (USDA Forest Service (FS) 2004a, chapter 2, p. 31; USDA FS 2004b, chapter 2, p. 28; USDA FS 2004c, chapter 2, p. 19; USDA FS 2006a, chapter 2, p. 17; USDA FS 2006b, chapter 2, pp. 28–29). Delisting is not expected to lead to an immediate change in these standards and guidelines; in fact, the Regional Forester for U.S. Forest Service Region 9 expects to maintain the classification of the wolf as a Regional Forester Sensitive Species for at least 5 years after Federal delisting (Moore *in litt.* 2003; Eklund *in litt.* 2011). The Regional Forester has the authority to recommend classification or declassification of species as Sensitive Species. Under these standards and guidelines, a relatively high prey base will be maintained, and road densities will be limited to current levels or decreased. For example, on the Chequamegon-Nicolet National Forest in Wisconsin, the standards and guidelines specifically include the protection of den sites and key rendezvous sites, and management of road densities in existing and potential wolf habitat (USDA 2004c, chap. 2, p. 19).

The trapping of depredating wolves would likely be allowed on national forest lands under the guidelines and conditions specified in the respective State wolf-management plans. However, there are relatively few livestock raised within the boundaries of national forests in the upper Midwest, so wolf depredation and lethal control of wolves is neither likely to be a frequent occurrence, nor constitute a significant mortality factor, for the wolves in the Great Lakes area. Similarly, in keeping with the practice for other State-managed game species, any public hunting or trapping season for wolves that might be opened in the future by the States would likely include hunting and trapping within the national forests (Lindquist *in litt.* 2005; Williamson *in litt.* 2005; Piehler *in litt.* 2005; Evans *in litt.* 2005). The continuation of current national forest management practices will be important in ensuring the long-term viability of wolf populations in Minnesota, Wisconsin, and Michigan.

Wolves regularly use four units of the National Park System in the Great Lakes area and may occasionally use three or four other units. Although the National Park Service (NPS) has participated in the development of some of the State wolf-management plans in this area, NPS is not bound by States' plans. Instead, the NPS Organic Act and the NPS Management Policy on Wildlife generally require the agency to conserve natural and cultural resources and the wildlife present within the parks. NPS management policies require that native species be protected against harvest, removal, destruction, harassment, or harm through human action, although certain parks may allow some harvest in accordance with State management plans. Management emphasis in National Parks after delisting would continue to minimize the human impacts on wolf populations. Thus, because of their responsibility to preserve all native wildlife, units of the National Park System are often the most protective of wildlife. In the case of the wolf, the NPS Organic Act and NPS policies would continue to provide protection following Federal delisting.

Management and protection of wolves in Voyageurs National Park, along Minnesota's northern border is not likely to change after delisting. The park's management policies require that ''native animals will be protected against harvest, removal, destruction, harassment, or harm through human action.'' No population targets for wolves will be established for the National Park (Holbeck *in litt.* 2005). To reduce human disturbance, temporary closures around wolf denning and rendezvous sites will be enacted whenever they are discovered in the park. Sport hunting is already prohibited on park lands, regardless of what may be allowed beyond park boundaries (West *in litt.* 2004). A radio-telemetry study conducted between 1987 and 1991 of wolves living in and adjacent to the park found that all mortality inside the park was due to natural causes (for example, killing by other wolves or starvation), whereas the majority (60–80 percent) of mortality outside the park was human-induced (for example, shooting and trapping) (Gogan *et al.* 2004, p. 22). If there is a need to control depredating wolves outside the park, which seems unlikely due to the current absence of agricultural activities adjacent to the park, the park would work with the State to conduct control activities where necessary (West *in litt.* 2004).

The wolf population of Isle Royale National Park, Michigan, is small and isolated and lacks genetic uniqueness (Wayne *et al.* 1991). For genetic reasons and constraints on expansion due to the island's small size, this wolf population does not contribute significantly towards meeting numerical recovery criteria; however, long-term research on this wolf population has added a great deal to our knowledge of the species. The wolf population on Isle Royale has typically varied from 18 to 27 wolves in 3 packs, but has been down to just 2 wolves (a father-daughter pair) since the winter of 2015–2016 (Peterson *et al.* 2018). NPS recently announced plans to move additional wolves to Isle Royale in an effort to restore a viable wolf population (83 FR 11787; March 16, 2018).

Two other units of the National Park System, Pictured Rocks National Lakeshore and St. Croix National Scenic Riverway, are regularly used by wolves. Pictured Rocks National Lakeshore is a narrow strip of land along Michigan's Lake Superior shoreline. Lone wolves periodically use, but do not appear to be year-round residents of, the Lakeshore. If denning occurs after delisting, the Lakeshore would protect denning and rendezvous sites at least as strictly as the Michigan Plan recommends (Gustin *in litt.* 2003). Harvesting wolves on the Lakeshore may be allowed (if the Michigan DNR allows for harvest in the State), but trapping is not allowed. The St. Croix National Scenic Riverway, in Wisconsin and Minnesota, is also a mostly linear ownership. Approximately 54–58 wolves from 11 packs used the Riverway on the Wisconsin side in 2010 (Wydeven *in litt.* 2011). The Riverway is likely to limit public access to denning and rendezvous sites and to follow other management and protective practices outlined in the respective State wolf-management plans, although trapping is not allowed on NPS lands except possibly by Native Americans (Maercklein *in litt.* 2003).

At least one pack of 4–5 wolves used the shoreline areas of the Apostle Islands National Lakeshore, with a major deer yard area (a place where deer congregate in the winter) occurring on portions of the Park Service land. Wolf tracks have been detected on Sand Island, and a wolf was photographed by a trail camera on the island in September 2009. It is not known if wolves periodically swim to this and other islands, or if they only travel to islands on ice in winter.

Wolves occurring on National Wildlife Refuges in the Great Lakes area would be monitored, and Refuge habitat management would maintain the current prey base for them for a minimum of 5 years after delisting.

Trapping or hunting by government trappers for depredation control would not be authorized on National Wildlife Refuges. Because of the relatively small size of these Refuges, however, most or all wolf packs or individual wolves in these Refuges also spend significant amounts of time off these Refuges.

Wolves also occupy the Fort McCoy military installation in Wisconsin. Management and protection of wolves on the installation would not change significantly after Federal or State delisting. Den and rendezvous sites would continue to be protected, hunting seasons for other species (coyote) would be closed during the gun-deer season, and current surveys would continue, if resources are available. Fort McCoy has no plans to allow a public harvest of wolves on the installation (Nobles *in litt.* 2004; Wydeven *et al.* 2005, p. 25; 2006a, p. 25).

Minnesota National Guard's Camp Ripley contains parts of two pack territories, which typically include 10 to 20 wolves. Minnesota National Guard wildlife managers try to have at least one wolf in each pack radio-collared and to fit an additional one or two wolves in each pack with satellite transmitters that record long-distance movements. There have been no significant conflicts with military training or with the permit-only public deer-hunting program at the camp, and no new conflicts are expected following delisting. Long-term and intensive monitoring has detected only two wolf mortalities within the camp boundaries—both were of natural causes (Dirks 2009, pers. comm.).

The protection afforded to resident and transient wolves, their den and rendezvous sites, and their prey by five national forests, four National Parks, two military facilities, and numerous National Wildlife Refuges in Minnesota, Wisconsin, and Michigan will further ensure the conservation of wolves in the three States after delisting. In addition, wolves that disperse to other units of the National Refuge System or the National Park System within the Great Lakes area will also receive the protection afforded by these Federal agencies.

West Coast States

The west coast States generally contain a greater proportion of public land than the Great Lakes area. Public lands here include many National Parks, National Forests, National Monuments, and National Wildlife Refuges. These areas are largely unavailable and/or unsuitable for intensive development, and contain abundant ungulate populations. A lack of human occupancy and development combined with an adequate prey base increase the likelihood of public lands in the west coast States to provide suitable habitat for gray wolves.

In the listed portions of the west coast States of California, Oregon, and Washington, wolves are resident on portions of the Lassen, Plumas, Fremont-Winema, Rogue-Siskiyou, Mount Hood, Okanogan-Wenatchee, and Mt. Baker-Snoqualmie National Forests (Forests). Land and Resource Management Plans (LRMPs) for these Forests pre-date the re-establishment of wolf packs and, therefore, do not contain standards and guidelines specific to wolf management. The LRMPs do, however, recognize that the Forests have obligations under sections 7(a)(1) and 7(a)(2) of the Act to proactively conserve and avoid adverse effects to Federally listed species. If federally delisted, the Regional Foresters for U.S. Forest Service Regions 5 and 6 are expected to include the gray wolf as a Regional Forester Sensitive Species. As a Sensitive Species, conservation objectives for the gray wolf and its habitat will continue to be addressed during planning and implementation of projects.

Gray wolves disperse through but are not currently residents of National Parks, National Monuments, and National Wildlife Refuges in the listed portions of all three west coast States. Similar to these types of lands in the Great Lakes areas, management plans provide for the conservation of natural and cultural resources and wildlife. The gray wolf and its habitat are expected to persist on these lands should Federal delisting occur.

Overall, public lands on the west coast have the ability to support the continued expansion of gray wolves as they disperse from resident packs and surrounding States and provinces to establish new packs in the west coast States. Because these areas are in public ownership and we do not foresee habitat-related threats, we conclude that they will continue to provide secure, optimal habitat for a resident wolf population.

Summary of Post-Delisting Management

In summary, upon delisting, there will be varying State and Tribal classifications and protections provided to wolves. The State wolf-management plans currently in place for Minnesota, Wisconsin, and Michigan will be more than sufficient to retain viable wolf populations in each State. Each of those plans contains management goals that will maintain healthy populations of wolves in their State by establishing a minimum population of 1,600 in Minnesota, 350 in Wisconsin, and 200 in Michigan. Similarly, State management plans developed for Washington, Oregon, and California contain objectives to conserve and recover gray wolves. To ensure healthy populations are maintained, each State will monitor population abundance and trends, habitat and prey availability, and impacts of disease and take actions as needed to maintain populations. They are also committed to continuing necessary biological and social research and outreach and education to maintain healthy wolf populations. Each of the three Great Lakes States has a long-standing history of leadership in wolf conservation. All of the State management plans provide a high level of assurance of the persistence of healthy wolf populations, demonstrating their commitment to wolf conservation.

Furthermore, when federally delisted, wolves in Minnesota, Wisconsin, and Michigan will continue to receive protection from general human persecution by State laws and regulations. Wolves are protected as game species in each of those States, which prohibits lethal take without a permit, license, or authorization, except under a few limited situations (as described under the management plans above). Each of the three States will consider population-management measures, including public hunting and trapping, after Federal delisting, but regardless of the methods used to manage wolves, each State will maintain minimum wolf populations to ensure healthy wolf populations remain.

Wolves in Washington, Oregon, and California will also be protected by State laws and regulations when federally delisted. Currently wolves in Washington and California are protected under State statutes or acts as endangered species, as well as by their respective State management plans. Wolves in Oregon are State delisted but still receive protection under its State management plan. Each plan contains various phases outlining objectives for conservation and recovery. As recolonization of the west coast States continues, different phases of management will be enacted. All phases within the various State management plans are designed to achieve and maintain healthy wolf populations.

Finally, based on our review of the completed Tribal management plans and communications with Tribes and Tribal organizations, federally delisted wolves are very likely to be adequately protected on Tribal lands. Furthermore, the minimum population goals of the

Minnesota, Wisconsin, and Michigan State management plans can be achieved (based on the population and range of off-reservation wolves) even without Tribal protection of wolves on reservation lands. In addition, on the basis of information received from other Federal land-management agencies, we expect National Forests, units of the National Park System, military bases, and National Wildlife Refuges will provide protections to wolves in the areas they manage that will match, and in some cases will exceed, the protections provided by State wolf-management plans and State protective regulations.

Determination of Species Status

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so throughout all or a significant portion of its range. The Act defines ''endangered species'' as any species that is ''in danger of extinction throughout all or a significant portion of its range,'' and ''threatened species'' as any species that is ''likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' The term ''species'' includes ''any subspecies of fish or wildlife or plants, and any distinct population segment [DPS] of any species of vertebrate fish or wildlife which interbreeds when mature.'' A species is ''endangered'' if it is in danger of extinction throughout all or a significant portion of its range (16 U.S.C. 1532(6)), and is ''threatened'' if it is likely to become endangered in the foreseeable future throughout all or a significant portion of its range (16 U.S.C. 1532 (20)). The word ''range'' refers to the range in which the species currently exists, and the ''foreseeable future'' is the period of time over which events or effects reasonably can or should be anticipated, or trends extrapolated.

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of ''endangered species'' or ''threatened species.'' The Act requires that we determine whether a species meets the definition of ''endangered species'' or ''threatened species'' because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence.

We may delist a species according to 50 CFR 424.11(d) if the best available scientific and commercial data indicate that the species is neither endangered nor threatened.

Summary and Conclusion of Our Analysis

Prior to listing in the 1970s, wolves in the gray wolf entity had been reduced to about 1,000 individuals and extirpated from all of their range except northeastern Minnesota and Isle Royale, Michigan. The primary cause of the decline of wolves in the gray wolf entity was targeted elimination by humans. However, gray wolves are highly adaptable; their populations are remarkably resilient as long as prey availability, habitat, and regulation of human-caused mortality are adequate. Wolf populations can rapidly overcome severe disruptions, such as pervasive human-caused mortality or disease, once those disruptions are removed or reduced.

Provided the protections of the Act, the size of the gray wolf population increased to over four times that at the time of the initial gray wolf listings in the early 1970s, and more than triple that at the time of the 1978 reclassification (a figure which does not include the wolves currently found in the northern Rocky Mountains, which was part of those earlier listings, although not now part of the current gray wolf entity). The population's range has expanded outside of northeastern Minnesota to central and northwestern Minnesota, northern and central Wisconsin, and the entire Upper Peninsula of Michigan, and is in the early stages of expanding into western Washington, western Oregon, and northern California from areas outside the gray wolf entity. Wolves in the gray wolf entity now primarily exist as a large, stable to growing, metapopulation of about 4,400 individuals in the Great Lakes area and a small number of colonizing wolves in the west coast States that represent the expanding edge of a large metapopulation outside the gray wolf entity (in the northern Rocky Mountains and western Canada). Despite the substantial increase in gray wolf numbers and distribution within the gray wolf entity since 1978, the species currently occupies only a small portion of its historical range within the entity. This loss of historical range has resulted in a reduction of gray wolf individuals, populations, and suitable habitat (including adequate prey levels) within the gray wolf entity compared to historical levels.

To sustain populations over time, a species must have a sufficient number and distribution of healthy populations to withstand annual variation in its environment (resiliency); catastrophes (redundancy); and novel changes in its biological and physical environment (representation) (Shaffer and Stein 2000, pp. 308–311). A species with sufficient number and distribution of healthy populations is generally better able to adapt to future changes and to tolerate stressors (factors that cause a negative effect to a species or its habitat). Metapopulations are widely recognized as being more secure over the long-term than are several isolated populations that contain the same total number of packs and individuals (Service 1994, appendix 9). This is because adverse effects experienced by one of its subpopulations resulting from genetic drift, demographic shifts, and local environmental fluctuations can be countered by occasional influxes of individuals and their genetic diversity from other subpopulations in the metapopulation.

Changes resulting from loss of historical range for the gray wolf entity have increased the species' vulnerability within the entity to threats such as reduced genetic diversity and restricted gene flow (reduced representation), and all or most of its populations being affected by a catastrophic event (reduced redundancy). However, the large size of the Great Lakes metapopulation and the high quality of the habitat it occupies provide the gray wolf entity resiliency in the face of annual environmental fluctuations (for example, prey availability, pockets of disease outbreaks), periodic disturbances, and anthropogenic stressors. Further, while the subpopulations within the metapopulation are interconnected, they are broadly distributed across the northern portions of three States. This broad distribution of subpopulations within the Great Lakes area provides the gray wolf entity the redundancy to survive a catastrophic event because such an event is unlikely to simultaneously affect wolf subpopulations from Minnesota to Michigan. Lastly, the gray wolf is a generalist species that is highly adaptable to a variety of ecosystem types. A mixture of western gray wolves and eastern wolves in the Great Lakes area, in particular, may provide additional adaptive capacity. Thus, the gray wolf entity is likely to contain the representation needed to be able to adapt to future changes in the environment.

The metapopulation in the Great Lakes area contains sufficient resiliency, redundancy, and representation to sustain populations within the gray wolf entity over time. Therefore, we conclude that the relatively few wolves that occur outside the Great Lakes area within the gray wolf entity, including those in the west coast States and lone dispersers in other States, are not necessary for the recovered status of the gray wolf entity. However, the viability of the entity is further increased by wolves that occur outside the Great Lakes area. The large and expansive population of about 12,000–14,000 wolves in eastern Canada increases the resiliency of the gray wolf entity through its connectivity to the Great Lakes area metapopulation. Additionally, a large metapopulation of about 16,000 wolves outside the gray wolf entity in the northern Rocky Mountains and western Canada is expanding into the gray wolf entity in Oregon, Washington, and California (figure 2). Such a large and widely distributed metapopulation of wolves not only contributes to the resiliency, redundancy, and representation of gray wolves in the lower 48 United States, but also is likely to further increase the viability of the gray wolf entity because these wolves are colonizing the western portion of the gray wolf entity. With ongoing post-delisting management from States, further expansion of the metapopulation into the gray wolf entity is likely to continue in the west coast States, further increasing the viability of the gray wolf entity.

Wolves in the Great Lakes area now greatly exceed the recovery criteria for (1) a secure wolf population in Minnesota, and (2) a second population outside Minnesota and Isle Royale consisting of 100 wolves for 5 successive years. Therefore, based on the criteria set by the Eastern Wolf Recovery Team, the Great Lakes area now contains sufficient wolf numbers and distribution, threats have been alleviated, and the States and Tribes are committed to continued management such that the long-term survival of the wolf is ensured. Consequently, because we have identified no other regions of the gray wolf entity as necessary for recovery of wolves in this entity, we conclude that the Great Lakes area contains sufficient wolf numbers and distribution to ensure the long-term survival of the gray wolf entity.

The recovery of the gray wolf entity is attributable primarily to successful interagency cooperation in the management of human-caused mortality. Such mortality is the most significant issue to the long-term conservation status of wolves in the gray wolf entity. Therefore, managing this source of mortality remains the primary challenge to maintaining a recovered wolf population into the foreseeable future. Legal harvest and agency control to mitigate depredations on livestock will be the primary human-caused mortality factors that State agencies can manipulate to achieve management objectives once delisting occurs. Wolves in the Great Lakes area are well above Federal recovery requirements defined in the Eastern Timber Wolf Recovery Plan. As a result, we can expect to see some reduction in wolf populations in the Great Lakes areas as States begin to institute wolf-hunting seasons with the objective of slowing or reversing population growth while continuing to maintain wolf populations well above Federal recovery requirements in their respective States. Using an adaptive-management approach that adjusts harvest based on population estimates and trends, the initial objectives of States may be to lower wolf populations then manage for sustainable populations, similar to how States manage all other game species. For example, in 2013–2014, during a period when gray wolves were federally delisted in the Great Lakes area, Wisconsin reduced the State's wolf harvest quota by 43 percent in response to a reduced (compared to the previous year) estimated size of the wolf population. In the west coast States, wolf populations will likely be managed to ensure progress towards recovery objectives while also minimizing livestock losses caused by wolves.

Based on our analysis, we conclude that Minnesota, Wisconsin, and Michigan will maintain abundance and distribution of the Great Lakes wolf population above recovery levels for the foreseeable future, and that the threat of human-caused mortality has been sufficiently reduced. All three States have wolf-management laws, plans, and regulations that adequately regulate human-caused mortality. Each of the three States has committed to manage its wolf population at or above viable population levels, and we do not expect this commitment to change. Based on our review, we conclude that regulatory mechanisms in all three States are adequate to facilitate the maintenance of, and in no way threaten, the recovered status of wolves in the gray wolf entity if they are federally delisted. Adequate wolf-monitoring programs, as described in the State wolf-management plans, are likely to identify high mortality rates or low birth rates that warrant corrective action by the management agencies. Further, while relatively few wolves occur in the west coast portion of the gray wolf entity at this time, and State wolf-management plans for Washington, Oregon, and California do not yet include population management goals, these plans include recovery objectives intended to ensure the reestablishment of self-sustaining populations in these States.

Based on the biology of wolves and our analysis of threats, we conclude that, as long as wolf populations in the Great Lakes States are maintained at or above identified recovery levels, wolf biology (namely the species' reproductive capacity) and the availability of large, secure blocks of suitable habitat within the occupied areas will enable the maintenance of populations capable of withstanding all other foreseeable threats. Although much of the historical range of the gray wolf entity is no longer occupied, based on our analysis we find that the amount and distribution of occupied wolf habitat currently provides, and will continue to provide, large core areas that contain high-quality habitat of sufficient size and with sufficient prey to support a recovered wolf population. Our analysis of land management shows these areas, specifically Minnesota Wolf Management Zone A (Federal Wolf Management Zones 1–4), Wisconsin Wolf Zones 1, and the Upper Peninsula of Michigan will maintain their suitability into the foreseeable future. Therefore, we conclude that, despite the loss of large areas of historical range for the gray wolf entity, Minnesota, Wisconsin, and the Upper Peninsula of Michigan contain a sufficient amount of high-quality wolf habitat to support wolf populations into the future.

While disease and parasites can temporarily affect population stability, as long as populations are managed above recovery levels, these factors are not likely to threaten the viability of the wolf population in the gray wolf entity at any point in the foreseeable future. Climate change is also likely to remain an insignificant factor in population dynamics into the foreseeable future, due to the adaptability of the species. Finally, based on our analysis, we conclude that cumulative effects of threats, do not now, nor are likely to in the foreseeable future, threaten the viability of the gray wolf entity throughout the range of wolves in the gray wolf entity.

Determination of Status Throughout All of Its Range

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to the gray wolf entity

(the two *C. lupus* listed entities combined). We evaluated the status of, and assessed the factors likely to negatively affect, the gray wolf entity, including threats to the gray wolf entity identified at the time of reclassification. While wolves in the gray wolf entity currently occupy only a portion of wolf historical range, the best available information indicates that the gray wolf entity is recovered and is not now, nor likely in the foreseeable future, to be negatively affected by past, current, and potential future threats such that the entity is in danger of extinction.

Specifically, we have determined, based on the best available information, that human-caused mortality (Factor C); habitat and prey availability (Factor A); disease and parasites (Factor C); commercial, recreational, scientific, or educational uses (Factor B); climate change (Factor E); or other threats, singly or in combination, are not of sufficient imminence, intensity, or magnitude to indicate that wolves in the gray wolf entity are in danger of extinction or likely to become so within the foreseeable future throughout all of its range. We have also determined that ongoing effects of recovery efforts, which resulted in a significant expansion of the occupied range of and number of wolves in the gray wolf entity over the past decades, in conjunction with State, Tribal, and Federal agency wolf management and regulatory mechanisms that will be in place following delisting across the occupied range in the entity, will be adequate to ensure the conservation of wolves in the gray wolf entity. These activities will maintain an adequate prey base, preserve denning and rendezvous sites, monitor disease, restrict human take, and keep wolf populations well above the recovery criteria established in the Revised Recovery Plan (USFWS 1992, pp. 25–28).

The term ''foreseeable future'' describes the extent to which we can reasonably rely on the predictions about the future in making determinations about the future conservation status of the gray wolf entity. We conclude that it is reasonable to rely on the scientific studies and information assessing human-caused mortality; habitat and prey availability; the impacts of disease and parasites; commercial, recreational, scientific, or educational uses; gray wolf adaptability, including with respect to changing climate; recovery activities and regulatory mechanisms that will be in place following delisting; and predictions about how these may affect the gray wolf entity in making determinations about the gray wolf entity's future status. Therefore, after assessing the best available information, we have determined that the gray wolf entity is not in danger of extinction throughout all of its range nor is it likely to become so in the foreseeable future.

Because we determined that the gray wolf entity is not in danger of extinction or likely to become so in the foreseeable future throughout all of its range, we will consider whether there are any significant portions of its range that are in danger of extinction or likely to become so in the foreseeable future.

Determination of Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species warrants listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range (SPR). Having determined that the gray wolf entity is not in danger of extinction now or likely to become so in the foreseeable future throughout all of its range, we now consider whether it may be in danger of extinction or likely to become so in the foreseeable future in an SPR. The range of a species can theoretically be divided into portions in an infinite number of ways, so we first screen the potential portions of the species' range to determine if there are any portions that warrant further consideration. To do this we look for portions of the species' range for which there is substantial information indicating that: (1) The portion may be significant, and (2) the species may be in danger of extinction or likely to become so in the foreseeable future in that portion. A portion would not warrant further consideration if, for that portion, either one of these initial elements is not present. Therefore, if we determine that either of the initial elements is not present for a particular portion of the species' range, then further analysis is not necessary and the species does not warrant listing because of its status in that portion of its range.

We emphasize that the presence of both of the initial elements is not equivalent to a determination that the species should be listed—rather, it is a determination that a portion warrants further consideration. If we identify any portions that meet both of the initial elements, we conduct a more thorough analysis to determine whether in fact (1) the portion is significant and (2) the species is in danger of extinction or likely to become so in the foreseeable future in that portion. Confirmation that a geographic area does indeed meet one of these standards (either the portion is significant or the species is endangered or threatened in that portion of its range) does not create a presumption, prejudgment, or other determination as to whether the species is endangered or threatened in a significant portion of its range. Rather, we must then undertake a more detailed analysis of the other standard to make that determination. If the portion does indeed meet both standards, then the species is endangered or threatened in that significant portion of its range and warrants listing rangewide.

Thus, there can be two separate stages to the process of determining whether a species is threatened or endangered in a significant portion of its range: The stage of screening potential portions to identify if any portions warrant further consideration, and the stage of undertaking the more-detailed analysis of any portions that do warrant further consideration. At either stage, it may be more efficient for us to address the ''significance'' question first, or to address the ''status'' question first. Our selection of which question to address first for a particular portion depends on the biology of the species, its range, and the threats it faces. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the second question for that portion of the species' range.

We note that a court has invalidated the USFWS and National Marine Fisheries Service (NMFS) definition of ''significant'' in their policy interpreting ''significant portion of its range,'' and issued a nationwide injunction prohibiting us from applying that definition (*Desert Survivors* v. *Dep't of the Interior,* No. 16–cv–01165–JCS (N.D. Cal. Aug. 24, 2018)). Therefore, in our analysis for the gray wolf, we apply ''significant'' in a way that is consistent with that court's opinion, and with other relevant case law. As USFWS and NMFS have not yet determined the best way to interpret ''significant'' in light of the decision in *Desert Survivors,* for the purposes of the analysis here, in determining whether any portions may warrant further consideration because they may be significant, we screen by looking for portions of the species' range that could be significant under any reasonable definition of ''significant'' that relates to the conservation of the gray wolf entity. To do this, we look for any portions that may be biologically important in terms of the resiliency, redundancy, or representation of the species. Our use of this standard for ''significant'' is limited to this analysis, and is not precedent for any future determinations.

To screen for the second prong, we consider whether there are any portions where the gray wolf entity may be in

danger of extinction or likely to become so in the foreseeable future. This may include consideration of whether the threats are geographically concentrated in any portion of the species' range at a biologically meaningful scale; if threats are not uniform throughout its range, this may be an indication that the species may warrant further evaluation to determine whether a different classification is appropriate. However, geographically concentrated threats do not necessarily indicate that a species may be in danger of extinction or likely to become so in the foreseeable future in that portion. Even if threats are concentrated in a portion, other factors could indicate that there is little chance those threats rise to a level such that the portion of the range may be in danger of extinction or likely to become so in the foreseeable future.

After reviewing the biology of the gray wolf entity and potential threats, we have not identified any portions of the gray wolf entity for which both (1) gray wolves may be in danger of extinction or likely to become so in the foreseeable future and (2) the portion may be significant. While some portions may be at increased threat from human-caused mortality or factors related to small numbers, we did not find that any of these portions may be significant. We provide examples below.

First, portions peripheral to the Great Lakes metapopulation that may contain lone dispersing wolves (*e.g.,* western Minnesota, Lower Peninsula of Michigan, eastern South Dakota) or few wolves (*e.g.,* Isle Royale), may be at greater threat from human caused mortality or due to factors related to small numbers of individuals. However, these portions are not biologically important to the gray wolf entity in terms of resiliency, redundancy, or representation. They are not important to the redundancy or resiliency of the gray wolf entity because they are not members of established breeding packs (lone dispersers) or are few in number and likely to remain as such (Isle Royale). They are also not important to the representation of the gray wolf entity because they lack genetic uniqueness relative to other wolves in the Great Lakes metapopulation—they are part of that metapopulation and are dispersing out from it. In addition, the gray wolf is a highly adaptable generalist species capable of long-distance dispersal. In other words, it possess the genetic diversity necessary to successfully colonize a broad range of habitat types and feed on a variety of prey species, and possess dispersal capabilities that facilitate colonization of those habitats in addition to gene flow among and between populations. Therefore, we find that these portions are not ''significant'' under any reasonable definition of that term because they are not biologically important to the gray wolf entity in terms of its resiliency, redundancy, or representation.

Second, State wolf-management zones in which post-delisting depredation control would be allowed under a broader set of circumstances than in core population zones, such as Minnesota Wolf Management Zone B (Federal Wolf Management Zone 5) or Wisconsin Wolf Management Zones 3 and 4, are not significant under any reasonable definition of ''significant.'' While these portions would likely experience higher levels of human-caused mortality if the gray wolf entity were delisted, these portions are not ''significant'' under any reasonable definition of that term. The wolves in these zones occur on the periphery of a large metapopulation (the Great Lakes metapopulation), in areas of limited habitat suitability, and do not contribute appreciably to (and are thus not biologically important to) the resiliency, redundancy, or representation of the gray wolf entity. In fact, the Recovery Plan for the Eastern Timber Wolf advises against restoration of wolves in State Zone B (Federal Zone 5) because the area is ''not suitable for wolves''. Wolves in these higher-intensity management zones are not important to the resiliency of the gray wolf entity because, even though they contain multiple established packs in addition to lone wolves, they comprise a small proportion of wolves in the Great Lakes metapopulation and, consequently, the gray wolf entity (Zone B contains approximately 15% of the Minnesota wolf population; Zones 3 and 4 contain about 6% of the Wisconsin wolf population). If wolves are delisted, a large metapopulation of wolves would still occur in the Great Lakes area outside these higher-intensity management zones in core zones of high-quality habitat and minimal human-caused mortality, providing the gray wolf entity the ability to withstand stochastic processes. These higher-intensity management zones are not important to the redundancy of the gray wolf entity because wolves in these zones represent a relatively small number and distribution of populations or packs in the Great Lakes metapopulation. The Great Lakes metapopulation is large and distributed across three states. Wolves in these higher-intensity management zones comprise a small proportion of wolves in, and occur on the periphery of, this metapopulation. If wolves are delisted, wolves would still occur in multiple populations distributed across tens of thousands of square miles in Minnesota, Wisconsin, and Michigan, providing the gray wolf entity the ability to withstand a catastrophic event. Thus, wolves in these higher-intensity management zones do not contribute meaningfully to the ability of the Great Lakes metapopulation, or gray wolf entity, to withstand catastrophic events. Wolves in these higher-intensity management zones are not important to the representation of the gray wolf entity because they originate from the Great Lakes and eastern Canada metapopulation (they are genetically similar to other wolves in the Great Lakes area of the gray wolf entity) and because gray wolves are a highly adaptable generalist species capable of long distance-dispersal. Therefore, we do not find that these portions may be significant under any reasonable definition of ''significant'' because they are not biologically important to the gray wolf entity in terms of its resiliency, redundancy, or representation.

Third, the west coast portion of the gray wolf entity, where wolves exist in small numbers in California, western Oregon, and western Washington, also is not biologically important to the gray wolf entity in terms of resiliency, redundancy, or representation. This portion is not important to the gray wolf entity in terms of resiliency or redundancy because wolves occur in small numbers in this portion and include only a few breeding pairs. Because these wolves represent the expanding front of a recovered and stable source metapopulation, and are therefore not an independent population within the gray wolf entity, the small number of wolves there do not contribute meaningfully to the ability of any population, in the NRM or Great Lakes area, to withstand stochastic events, nor to the entire entity's ability to withstand catastrophic events. This portion is also not important in terms of representation, because (1) gray wolves are a highly adaptable generalist carnivore capable of long-distance dispersal, and (2) the gray wolves in this area are an extension of a large metapopulation of wolves in the northern Rocky Mountains and western Canada (*i.e.,* they are not an isolated population with unique or markedly different genetic or phenotypic traits that is evolving separate from other wolf populations). Therefore, for the purpose of assessing the status of the gray wolf

entity under the Act, we do not find that this portion may be significant under any reasonable definition of ''significant'' because it is not biologically important to the gray wolf entity in terms of its resiliency, redundancy, or representation.

We conclude that there are no portions of the gray wolf entity for which both (1) gray wolves may be in danger of extinction or likely to become so in the foreseeable future and (2) the portion may be significant. As discussed above, portions that may be in danger of extinction or likely to become so in the foreseeable future are not significant under any reasonable definition of that term. Conversely, other portions that are or may be significant (*i.e.* the core areas of the Great Lakes metapopulation) are not in danger of extinction or likely to become so in the foreseeable future. Because we did not identify any portions of the gray wolf entity where threats may be concentrated and where the portion may be biologically important in terms of the resiliency, redundancy, or representation of the gray wolf entity, a more thorough analysis is not required. Therefore, we conclude that the gray wolf entity is not in danger of extinction or likely to become so in the foreseeable future within a significant portion of its range.

Proposed Determination

After a thorough review of all available information and an evaluation of the five factors specified in section 4(a)(1) of the Act, as well as consideration of the definitions of ''threatened species'' and ''endangered species'' contained in the Act and the reasons for delisting as specified in 50 CFR 424.11(d), we propose that removing the two entities of gray wolf (*Canis lupus*) from the List of Endangered and Threatened Wildlife (50 CFR 17.11) is appropriate. We have collectively evaluated the current and potential threats to the combined gray wolf entities, including those that result from past loss of historical range. Wolves have recovered in the combined entities as a result of the reduction of threats as described in the analysis of threats and are neither currently in danger of extinction, nor likely to become so in the foreseeable future, throughout all or a significant portion of their range.

Although substantial contraction of gray wolf historical range occurred within the combined entities since European settlement, the range of the gray wolf has expanded significantly since its original listing in 1978 and the impacts of lost historical range are no longer manifesting in a way that threatens the viability of the species. The causes of the previous contraction (for example, targeted extermination efforts), and the effects of that contraction (for example, reduced numbers of individuals and populations, and restricted gene flow), in addition to the effects of all other threats, have been ameliorated or reduced such that the combined entities no longer meet the Act's definitions of ''threatened species'' or ''endangered species.'' Further, we note that, while we combined the two *C. lupus* listed entities for our analysis, even if we had analyzed them separately, neither would meet the Act's definitions of ''threatened species'' or ''endangered species.'' Both of these two listed entities are either part of the same metapopulation or the expanding front of the recovered NRM metapopulation. Therefore, because the status of each of these two listed entities is influenced by its connectedness to the other, the status of each would be the same as if analyzed in combination. We also note that the Act allows us to list species, subspecies, or DPSs and that, because the two listed entities are not discrete and are therefore not DPSs, neither of the two listed entities constitute valid listable entities under the Act and should, therefore, be removed from the List.

Effects of This Rule

This proposal, if made final, would revise 50 CFR 17.11(h) by removing the two existing *C. lupus* listed entities from the Federal List of Endangered and Threatened Wildlife. This proposal, if made final, would also remove the special regulations under section 4(d) of the Act for wolves in Minnesota. These regulations currently are found at 50 CFR 17.40(d).

Critical habitat was designated for the gray wolf in 1978 (43 FR 9607, March 9, 1978). That rule (codified at 50 CFR 17.95(a)) identifies Isle Royale National Park, Michigan, and Minnesota Wolf Management Zones 1, 2, and 3, as delineated in 50 CFR 17.40(d)(1), as critical habitat. Wolf Management Zones 1, 2, and 3 comprise approximately 25,500 km^2 (9,845 mi^2) in northeastern and north-central Minnesota. This proposal, if made final, would remove the designation of critical habitat for gray wolves in Minnesota and on Isle Royale, Michigan.

Post-Delisting Monitoring

Section 4(g)(1) of the Act, added in the 1988 reauthorization, requires us to implement a system, in cooperation with the States, to monitor for not less than 5 years the status of all species that have recovered and been removed from the Lists of Endangered and Threatened Wildlife and Plants (50 CFR 17.11 and 17.12). The purpose of this post-delisting monitoring (PDM) is to verify that a species delisted due to recovery remains secure from risk of extinction after it no longer has the protections of the Act. To do this, PDM generally focuses on evaluating (1) demographic characteristics of the species, (2) threats to the species, and (3) implementation of legal and/or management commitments that have been identified as important in reducing threats to the species or maintaining threats at sufficiently low levels. We are to make prompt use of the emergency-listing authority under section 4(b)(7) of the Act to prevent a significant risk to the well-being of any recovered species. Section 4(g) of the Act explicitly requires cooperation with the States in development and implementation of PDM programs, but we remain responsible for compliance with section 4(g) and, therefore, must remain actively engaged in all phases of PDM. We also will seek active participation of other State and Federal agencies or Tribal governments that are expected to assume management authority for the species' conservation, should our proposed delisting be finalized. In some cases, agencies have already devoted significant resources toward wolf monitoring efforts. For example, the States of Washington, Oregon, and California have wolf-management plans that include monitoring strategies for wolves and wolf populations. Should such monitoring document significant declines, the Service will investigate the degree and importance of such declines.

We developed a PDM plan for wolves in the Great Lakes area with the assistance of the Eastern Wolf Recovery Team in 2008. That document remains applicable today as it focuses on monitoring wolves within the borders of Minnesota, Wisconsin, and the Upper Peninsula of Michigan and is available on our website (see **FOR FURTHER INFORMATION CONTACT**).

The PDM program will rely on a continuation of State monitoring activities, similar to those that have been conducted by Minnesota, Wisconsin, and Michigan DNR's in recent years, and Tribal monitoring. These activities will include both population monitoring and health monitoring of individual wolves. During the PDM period, the Service will conduct a review of the monitoring data and program. We will consider various relevant factors (including but not limited to mortality rates, population changes and rates of change, disease

occurrence, range expansion or contraction) to determine if the population of wolves within the borders of Minnesota, Wisconsin, and the Upper Peninsula of Michigan warrants expanded monitoring, additional research, consideration for re-listing as threatened or endangered, or emergency listing.

Minnesota, Wisconsin, and Michigan DNRs have monitored wolves for several decades with significant assistance from numerous partners, including the U.S. Forest Service, National Park Service, USDA–APHIS–Wildlife Services, Tribal natural resource agencies, and the Service. To maximize comparability of future PDM data with data obtained before delisting, all three State DNRs have committed to continue their previous wolf-population-monitoring methodology, or will make changes to that methodology only if those changes will not reduce the comparability of pre- and post-delisting data.

In addition to monitoring wolf population numbers and trends, the PDM program will evaluate post-delisting threats, in particular human-caused mortality, disease, and implementation of legal and management commitments. If at any time during the monitoring period we detect a substantial downward change in the populations or an increase in threats to the degree that population viability may be threatened, we will work with the States and Tribes to evaluate and change (intensify, extend, and/or otherwise improve) the monitoring methods, if appropriate, and/or consider re-listing the gray wolf, if warranted.

This PDM monitoring program will extend for 5 years beyond the effective delisting date of the two currently listed gray wolf entities. At the end of the 5-year period, we will conduct another review and post the results on our website. In addition to the above considerations, the review will determine whether the PDM program should be terminated or extended.

Required Determinations

Clarity of This Proposed Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(a) Be logically organized;

(b) Use the active voice to address readers directly;

(c) Use clear language rather than jargon;

(d) Be divided into short sections and sentences; and

(e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act

We determined that we do not need to prepare an environmental assessment or an environmental impact statement, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments (59 FR 22951), E.O. 13175, and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. We have coordinated the proposed rule with the affected Tribes and, furthermore, throughout several years of development of earlier related rules and this proposed rule, we have endeavored to consult with Native American Tribes and Native American organizations in order to both (1) provide them with a complete understanding of the proposed changes, and (2) to understand their concerns with those changes. If requested, we will conduct additional consultations with Native American Tribes and multi-tribal organizations subsequent to any final rule in order to facilitate the transition to State and Tribal management of wolves within the Lower 48 United States outside of the NRM DPS where wolves are already under State and Tribal management. We will fully consider all of the comments on the proposed rule that are submitted by Tribes and Tribal members during the public comment period and will attempt to address those concerns, new data, and new information where appropriate.

References Cited

A complete list of all references cited in this proposed rule is available at *http://www.regulations.gov* under Docket No. FWS–HQ–ES–2018–0097 or upon request from the USFWS Headquarters Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are staff members of the USFWS.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we hereby propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; 4201–4245; unless otherwise noted.

§ 17.11 [Amended]

■ 2. Amend § 17.11(h) by removing both entries for ''Wolf, gray *(Canis lupus)*'' under MAMMALS in the List of Endangered and Threatened Wildlife.

§ 17.40 [Amended]

■ 3. Amend § 17.40 by removing and reserving paragraph (d).

§ 17.95 [Amended]

■ 4. Amend § 17.95(a) by removing the critical habitat entry for ''Gray Wolf *(Canis lupus).*''

Dated: March 6, 2019.

Margaret E. Everson

Principal Deputy Director, U.S. Fish and Wildlife Service Exercising the Authority of the Director for the U.S. Fish and Wildlife Service.

[FR Doc. 2019–04420 Filed 3–14–19; 8:45 am]

BILLING CODE 4333–15–P

California Fish and Game Commission
Tribal Committee (TC) Work Plan
Topics and Timeline for Items Referred to TC from the California Fish and Game Commission

Updated March 2019

Topic	Type	Goal(s)	2019			2020
			Feb	Jun	Oct	Feb
			Sacramento	Redding	San Diego	TBD
Special Projects						
Co-management	TC Project	Develop a definition for co-management	X	X	X	X
Potential technical/tribal advisory committee	TC Project	Explore options for a technical advisory body to provide input to the TC co-chairs		X		
Regulatory/Legislative						
Kelp and algae harvest management	DFW Project and Regulation Change	Updates; then recommendation and guidance	X		X/R	
Simplification of statewide inland fishing regulations	DFW Project and Regulation Change	Updates; then recommendation and guidance	X/R	X/R		
Operating principles/practices and add TC to FGC meeting procedures	Regulation Change	Amend Section 665, Title 14, California Code of Regulations	X	X	X/R	
DFW-managed lands	Regulation Change	Amend Section 550, 550.5, and 551, Title 14, California Code of Regulations	X	X	X/R	
Emerging/Developing Management Issues						
FGC climate policy	FGC Policy	During development of a policy for FGC, make recommendations and provide guidance				
Resilient coastal fishing communities	MRC Project	Updates and guidance	X	X	X	X
Management Plans						
Sheep, deer, antelope, trout, abalone	DFW Projects	Updates and guidance (timing as appropriate for each plan)	X	X	X	X
Informational Topics						
Cross-pollination with MRC and WRC	FGC Committee Coordination	Identification of tribal concerns and common themes that overlap between WRC and MRC	X	X	X	X
Annual tribal planning meeting for coordination and consultation, pursuant to Commission's tribal consultation policy	FGC Policy	(1) Share anticipated regulatory and policy topics to be considered this year, (2) identify tribal priorities from within topics, (3) develop collaborative interests, (4) contribute to planning logistics for annual meeting, and (5) review progress on topics discussed at annual meeting.	X	X	X	X
Marine Protected Areas Statewide Leadership Team	OPC Project	Update on tribal participation in the Marine Protected Areas Statewide Leadership Team and implementation of the leadership team work plan	X	X	X	X
Safeguarding California and sea level rise	OPC Project	Update (as requested)				
Proposition 64 (cannabis)	DFW/LED Project	Update on implementation (as requested)		X		
Wildfire impacts and state response	DFW	Update		X		
FGC regulatory calendar	FGC	Update	X	X	X	X

FGC = California Fish and Game Commission MRC = FGC's Marine Resources Committee WRC = FGC's Wildlife Resources Committee
DFW = California Department of Fish and Wildlife LED = DFW's Law Enforcement Division OPC = California Ocean Protection Council

Wildlife Resources Committee (WRC) 2018-19 Work Plan
Scheduled Topics and Timeline for
Items Referred to WRC by the California Fish and Game Commission
Updated April 8, 2019

Topic	Category	2019			2020
		JAN	MAY	SEP	Jan
		Ontario	Sacramento	Santa Rosa	TBD
Annual Regulations					
Upland (Resident) Game Birds	Annual	X/R			
Sport Fishing	Annual				
Mammal Hunting	Annual		X	X/R	
Waterfowl	Annual		X	X/R	
Central Valley Salmon Sport Fishing	Annual		X	X/R	
Klamath River Basin Sport Fishing	Annual		X	X/R	
Regulations & Legislative Mandates					
Falconry	Referral for Review				
Department Lands Regulations	Informational	X	X/R		
Simplification of Statewide Inland Fishing Regulations	Informational	X/R	X/R		
Special Projects					
Bullfrogs and Non-native Turtles	Referral for Review		X		
Emerging Management Issues					
Wild Pig Management	Referral for Review				
Policies					
Delta Fisheries Forum Recommendations and Delta Fisheries Policy	Referral for Review	X	X	X	

KEY: X Discussion scheduled X/R Recommendation developed and moved to FGC

From: afa@mcn.org
Sent: Friday, March 29, 2019 12:09 PM
To: ari.corman@fgc.ca.gov; FGC; secretary@resoruces.ca.gov
Subject: CHYTRID FUNGUS - National Geographic - March 2019]

Friday

See link below to article on the chytrid fungus (Bd) in this week's NATIONAL GEOGRAPHIC.

Forget the proposed live market hearings. STOP THE MARKET FROG/TURTLE IMPORTS NOW.

Recent studies have documented that the majority of the bullfrog imports test positive for Bd.

Those illegal imports (ALL are diseased and/or parasitized) pose serious threats to the environment, the public health, and the animals themselves.
These non-native animals (bullfrogs & turtles) when released into local waters (illegal, but common), they prey upon and displace the natives, while spreading all sorts of diseases and parasites. The frogs & turtles are routinely "housed" four and five deep, often without food or water, and butchered while fully conscious. And frequently released (illegally) into the wild by Buddhist sects in "animal liberation" ceremonies and by well-meaning "do-gooders."

As you may recall, the Fish & Game Commission twice voted unanimously voted 5:0 to cease these imports, but were ignored by the Department. The official response: "The Director acts at the pleasure of the Governor."
And it's "business as usual," the environment, public health and animal welfare be damned.

E.O. Wilson was right: "We, as a species, are 'innately dysfunctional.'"
("The Meaning of Human Existence," 2015)

Follow the money.

Any responses appreciated.

x
Eric Mills, coordinator
ACTION FOR ANIMALS
Oakland

---------- Original Message ----------
Subject: CHYTRID FUNGUS - National Geographic - March 2019
From: afa@mcn.org
Date: Fri, March 29, 2019 11:29 am
To: afa@mcn.org
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https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.nationalgeographic.com%2Fanimals%2F2019%2F03%2Famphibian-apocalypse-frogs-salamanders-worst-chytrid-fungus%2F&data=02%7C01%7Cfgc%40fgc.ca.gov%7Cc912764303924aabfc0e08d6b479f424%7C4b633c25efbf4006

9f1507442ba7aa0b%7C0%7C0%7C636894833213565475&sdata=vllaeZNZcGuLQ7fty9J0x6KyVCSmGnLuv2KeHBVntUA%3D&reserved=0

STATE OF CALIFORNIA
FISH AND GAME COMMISSION
STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-adoption Statement of Reasons)

Amend Section 362
Title 14, California Code of Regulations
Re: Nelson Bighorn Sheep Hunting

I. Date of Initial Statement of Reasons: November 15, 2018

II. Date of Pre-adoption Statement of Reasons: April 4, 2019

III. Dates and Locations of Scheduled Hearings:

(a) Notice Hearing: Date: December 13, 2018
Location: Oceanside, CA

(b) Discussion Hearing: Date: February 6, 2019
Location: Sacramento, CA

(c) Discussion Hearing: Date: April 17, 2019
Location: Santa Monica

(d) Adoption Hearing: Date: May 16, 2019
Location: Teleconference

IV. Description of Modification of Originally Proposed Language of Initial Statement of Reasons:

(a) Number of tags

The original proposed language provided a range of tag quota allocations for Nelson bighorn sheep hunting. The language has been modified to identify specific tag quotas determined based upon the completion of surveys and data analysis.

(b) Establishment of the Newberry, Rodman and Ord Mountains Hunt Zone

The original proposal seeks to establish the Newberry, Rodman and Ord Mountains Hunt Zone. The language describing the zone boundaries has been modified for clarity.

V. Reasons for Modification of Originally Proposed Language of Initial Statement of Reasons:

(a) Number of tags

Section 4902 of the Fish and Game Code specifies the Commission may adopt regulations for the take of no more than 15 percent of the mature Nelson bighorn rams estimated in a management unit. The Department's final recommendation specifies tag allocations that fall within the allowable harvest:

Zone 1 – The number of mature Nelson bighorn rams estimated in the Marble and Clipper Mountains is 106. Resulting final recommendation of 5 tags is less than 15% of estimated mature rams.

Zone 2 – In May 2013, respiratory disease caused severe population decline in bighorn sheep in the Kelso Peak/Old Dad Mountain Unit. The Department continues to monitor this population. While the population has shown positive recruitment trends in recent years, and the current estimate of mature rams in this unit is 28, the final recommendation at this time is zero tags for this unit.

Zone 3 – The number of mature Nelson bighorn rams estimated in the Clark/Kingston Mountains is 87. Resulting final recommendation of 4 tags is less than 15% of estimated mature rams.

Zone 4 – The number of mature Nelson bighorn rams estimated in the Orocopia Mountains is 22. The resulting final recommendation of one tag is less than 15% of estimated mature rams.

Zone 5 – In December 2018, a disease causing a severe population decline was detected in bighorn sheep in the San Gorgonio Wilderness Unit. The Department has not yet identified the root cause of the disease, and will continue to monitor the unit. At this time the final recommendation is zero tags for this unit.

Zone 6 – The number of mature Nelson bighorn rams estimated in the Sheep Hole Mountains is 11. The resulting final recommendation of tag is zero.

Zone 7 – The number of mature Nelson bighorn rams estimated in the White Mountains is 54. The resulting final recommendation of six tags is less than 15% of estimated mature rams.

Zone 8 – The number of mature Nelson bighorn rams estimated in the South Bristol Mountains is 21. The resulting final recommendation of two tags is less than 15% of estimated mature rams.

Zone 9 – The number of mature Nelson bighorn rams estimated in the Cady Mountains is 24. The resulting final recommendation of two general lottery

tags and one Cady Mountains Fund-raising Tag for a total of three tags is less than 15% of estimated mature rams.

Zone 10 – The number of mature Nelson bighorn rams estimated in the Newberry, Rodman and Ord Mountains is 84. The resulting final recommendation of six tags is less than 15% of estimated mature rams.

(b) Establishment of the Newberry, Rodman and Ord Mountains Hunt Zone

The original zone boundary description for the proposed Newberry, Rodman and Ord Mountains Hunt Zone identified a road name that was used for multiple roads in different directions. The zone boundaries were modified to improve clarity.

Section 4902 authorizes the Commission to adopt regulations for the sport hunting of Nelson bighorn sheep rams in management units for which plans have been developed pursuant to Section 4901 of the Fish and Game Code. A unit plan has been completed, and surveys and data analysis estimate the population within the management unit to be approximately 256 desert bighorn sheep with a positive trend in recruitment.

VI. Summary of Primary Considerations Raised in Opposition and in Support:

One public comment was received regarding proposed 2019 Nelson bighorn sheep hunting regulations as of March 20, 2019.

Comment:
Bill Gaines, Rocky Mountain Elk Foundation, and the California Chapter of the Wild Sheep Foundation.
February, 6, 2019, Fish and Game Commission Meeting:
Supports the Department’s elk and bighorn sheep proposal.

Response: Thank you for your comment.

Updated Informative Digest/Policy Statement Overview

The current regulation in Section 362, Title 14, CCR, provides for limited hunting of Nelson bighorn rams in specified areas of the State. The proposed change is intended to adjust the number of tags available for the 2019 season based on bighorn sheep spring population surveys conducted by the Department.

Final tag quota determinations will be made pending completion of all surveys and data analyses.

HUNT ZONE	NUMBER OF TAGS [proposed range]
Zone 1 - Marble Mountains	[0-5]
Zone 2 - Kelso Peak/Old Dad Mountains	[0-4]
Zone 3 - Clark/Kingston Mountain Ranges	[0-4]
Zone 4 - Orocopia Mountains	[0-2]
Zone 5 - San Gorgonio Wilderness	[0-3]
Zone 6 - Sheep Hole Mountains	[0-2]
Zone 7 - White Mountains	[0-6]
Zone 8 - South Bristol Mountains	[0-3]
Zone 9 – Cady Mountains	[0-4]
Zone 10 – Newberry, Rodman, Ord Mountains (New)	[0-6]
Open Zone Fund-Raising Tag	[0-1]
Marble/Clipper/South Bristol Mountains Fund-Raising Tag	[0-1]
Cady Mountains Fund-Raising Tag (New)	[0-1]
TOTAL	[0-42]

Other Amendments:

- Establishment of the Newberry, Rodman and Ord Hunt Zone: The proposed change adds this new bighorn sheep hunt zone in San Bernardino County.

- Reallocation of the Kelso Peak/Old Dad Mountains Fund-Raising to the Cady Mountains: The Kelso Peak/Old Dad herd unit has experienced significant population decline following a recent outbreak of respiratory disease. The proposal would reallocate this fund-raising tag to be valid in the Cady Mountains Hunt Zone.

- Amend the contact telephone number that is no longer in use for the program. The proposed Editorial Change provides a current contact phone number.

Benefits of the regulations

The benefits of the proposed regulations are consistency with statute and the sustainable management of the State's wildlife resources.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity, and the increase in openness and transparency in business and government.

Evaluation of incompatibility with existing regulations

The Commission has reviewed its regulations in Title 14, CCR, and conducted a search of other regulations on this topic and has concluded that the proposed amendments are neither inconsistent nor incompatible with existing State regulations. No other State agency has the authority to promulgate wildlife hunting regulations.

Tag quota determinations have been made, following completion of surveys and data analysis. Surveys and data analysis support the establishment of the Newberry, Rodman and Ord Hunt Zone based upon population size and current understanding of Nelson bighorn sheep health and recruitment. Zone boundaries for the Newberry, Rodman, and Ord Hunt Zone have been modified for clarity and will be included in a 15-day notice to interested and affected parties.

HUNT ZONE	NUMBER OF TAGS
Zone 1 - Marble Mountains	5
Zone 2 - Kelso Peak/Old Dad Mountains	0
Zone 3 - Clark/Kingston Mountain Ranges	4
Zone 4 - Orocopia Mountains	1
Zone 5 - San Gorgonio Wilderness	0
Zone 6 - Sheep Hole Mountains	0
Zone 7 - White Mountains	6

Zone 8 - South Bristol Mountains	2
Zone 9 – Cady Mountains	2
Zone 10 – Newberry, Rodman, Ord Mountains (New)	6
Open Zone Fund-Raising Tag	1
Marble/Clipper/South Bristol Mountains Fund-Raising Tag	1
Cady Mountains Fund-Raising Tag (New)	1
TOTAL	29

Regulatory Language

Section 362, Title 14, CCR, is amended to read:

§362. Nelson Bighorn Sheep

(a) Areas:

. . . [No changes to subsections (a)(1) through (9)]

(10) Zone 10 – Newberry, Rodman and Ord Mountains: That portion of San Bernardino County beginning at the junction with ~~Interstate Highway 40 and Fort Cady Road; West on Interstate Highway 40 to the junction with Barstow Road; South on Barstow Road to the junction with Northside Road; East on Northside Road to the intersection of Camp Rock Road; North on Camp Rock Road to the intersection with Powerline Road; East on Powerline Road and continue on Transmission Line Road to the intersection with Bessemer Mine Road/Canyon Route; North on Bessemer Mine Road/Canyon Route to the intersection with Troy Road; West on Troy Road to the intersection with Fort Cady Road; North on Fort Cady Road to the Junction with Interstate 40 to the point of the beginning.~~ Interstate 40 and Barstow Road; South on Barstow Road to the junction with Northside Road; East on Northside Road to the intersection with Camp Rock Road; Northeast on Camp Rock Road to the intersection with Powerline Road; East on Powerline Road and continue on Transmission Line Road to the intersection with Interstate 40, West along Interstate 40, to the point of the beginning.

(b) Seasons:

. . . [No changes to subsections (b)(1) through (2)]

(3) ~~Kelso Peak and Old Dad Mountains~~ Cady Mountains Fund-raising Tag: The holder of the fund-raising license tag issued pursuant to subsection 4902(d) of the Fish and Game Code may hunt:

(A) ~~Zone 2:~~ Zone 9: Beginning the first Saturday in November and extending through the first Sunday in February.

(4) Except as provided in subsection 362(b)(1), the Nelson bighorn sheep season in the areas described in subsection 362(a) shall be defined as follows:

(A) ~~Zones 1 through 4, 6, 8 and 9:~~ Zones 1, 2, 3, 4, 6, 8, 9, and 10: The first Saturday in December and extend through the first Sunday in February.

(B) Zone 5: The third Saturday in December and extend through the third Sunday in February.

(C) Zone 7: Beginning the third Saturday in August and extending through the last Sunday in September.

(5) Except as specifically provided in section 362, the take of bighorn sheep is prohibited.

. . . [No changes to subsection (c)]

d) Number of License Tags:

	Tag
Nelson Bighorn Sheep Hunt Zones	*Allocation*
Zone 1 - Marble/Clipper Mountains	~~4~~ 5
Zone 2 - Kelso Peak/Old Dad Mountains	0
Zone 3 - Clark/Kingston Mountain Ranges	~~2~~ 4
Zone 4 - Orocopia Mountains	1
Zone 5 - San Gorgonio Wilderness	~~2~~ 0
Zone 6 - Sheep Hole Mountains	0
Zone 7 - White Mountains	~~3~~ 6
Zone 8 - South Bristol Mountains	~~1~~ 2
Zone 9 - Cady Mountains	~~4~~ 2
Zone 10 – Newberry, Rodman, Ord Mountains	6
Open Zone Fund-Raising Tag	1
Marble/Clipper/South Bristol Mountains Fund-Raising Tag	1
~~Kelso Peak/Old Dad Mountains~~ Cady Mountains Fund-Raising Tag	~~0~~ 1
Total:	~~19~~ 29

(e) Conditions:

. . . [No changes to subsections (e)(1) through (3)]

(4) Successful general tagholders shall present the head and edible portion of the carcass of a bighorn ram to the department's checking station within 48 hours after killing the animal. All successful tagholders shall notify the department's Bishop office by telephone at (760) 872-1171 or ~~(760) 413-9596~~ (760) 872-1346 within 24 hours of killing the animal and arrange for the head and carcass to be examined.

. . . [No changes to subsections (e)(5) through (6)]

Note: Authority cited: Sections 200, 203, 265, 1050 and 4902, Fish and Game Code. Reference: Sections 1050, 3950 and 4902, Fish and Game Code.

BIGHORN SHEEP MANAGEMENT PLAN: NEWBERRY, RODMAN AND ORO MOUNTAINS UNIT'

Prepared by:

Regina K. Vu and Paige R. Prentice

California Department of Fish and Game Sacramento, California

2019

Approved by:

Kari Lewis, Wildlife Branch Chief — April 14, 2019
Date

MacNair, Leslie@Wildlife
Digitally signed by MacNair, Leslie@Wildlife
DN: DC=Gov, DC=Ca, DC=Dfg, DC=AD, OU=DFG Divisions, OU=(6) OR, OU=Users, CN="MacNair, Leslie@Wildlife"
Reason: I am approving this document
Location:
Date: 2019-03-11 19:10:00

Leslie MacNair, Regional Manager — Date
Region 6

*This plan was prepared in compliance with Section 4901 of the California Fish and Game Code.

TABLE OF CONTENTS

INTRODUCTION

In 1986, Assembly Bill (AB) 3117 (Mountjoy) was enacted by the California Legislature. That legislation amended Section 4700, and added Sections 4900-4905, to the California Fish and Game Code (Code). The legislature declared that the bighorn sheep is an important wildlife resource in California and is to be managed and maintained at sound population levels. It also directed the Department of Fish and Game (now Wildlife) (Department) to prepare a management plan for each population (herd) of bighorn sheep in California. In addition, it authorized, for the first time in 108 years, very limited and carefully regulated harvest of mature male bighorn sheep.

In 1991, AB 977 was enacted by the legislature, and expanded the hunting program. In accordance with that legislation, it is the policy of the Department of Fish and Game to (1) maintain, improve, and expand bighorn habitat where feasible; (2) reestablish populations of bighorn sheep on historic ranges where feasible; (3) increase bighorn populations to levels such that no subspecies nor distinct population segment requires classification as threatened or endangered; and (4) encourage and provide for esthetic, educational, and recreational uses of bighorn sheep, as appropriate.

Overall statewide management goals and recommended actions are discussed in the draft statewide management plan for desert bighorn sheep. Once the statewide plan and sheep management unit plans are approved, they shall supersede this management plan. This management plan has been prepared specifically for the Newberry, Rodman and Ord Mountains Management Unit. It is intended to comply with legislative policy as set forth in Section 1801 of the California Fish and Game Code, and Sections 4900-4903 of the Code that, among other things, mandate that management plans be prepared for each bighorn sheep management unit, and that those plans provide information on (1) the numbers, age, sex ratios, and distribution of bighorn sheep within the management unit; (2) range conditions and a report on the competition that may exist as a result of human, livestock, wild burro, or any other mammal encroachment; (3) the need to relocate or reestablish bighorn populations; (4) the prevalence of disease or parasites within the population; and (5) recommendations for achieving the policy objective of Section 4900, which addresses the potential for limited hunting opportunities for bighorn sheep.

LOCATION

The Newberry, Rodman and Ord Mountains Unit is comprised of three neighboring mountain ranges located in the central Mojave Desert, San Bernardino County. The Unit is centered approximately 17 miles southeast of the city of Barstow, and immediately south of Newberry Springs. The Newberry, Rodman and Ord Mountains Management Unit is bounded by U.S. Interstate 40 to the north, California State Route 247 to the west, Camp Rock Road to the south, and Powerline Road, continuing to Interstate 40 to the north. The Marine Corps Air Combat Center lies to the southeast of the range.

HABITAT DESCRIPTION

Steep, maze-like canyons characterize the Newberry Mountains and the northern end of the Rodman Mountains. The southern end of the Rodman Mountains and the Ord Mountains give way to comparatively gentler slopes. Elevations range from 1189 m at Ericksen Dry Lake, to 1521 m in the Newberry Mountains, 4323 m in the Rodman Mountains, and up to 1922 m, at Ord Mountain. Geologically, the Newberry and Rodman mountains are underlain by Jurassic and Cretaceous plutonic rocks and by Miocene volcanic and sedimentary rocks and the Ord Mountains are formed Mesozoic metavolcanic rock (Cox et al. 1987, Weber 1963).

Weather conditions in this management unit are typical of the Mojave Desert. Daytime high temperatures in summer frequently exceed 38° C, and temperatures approaching freezing during winter are not uncommon. Precipitation in the vicinity of the management unit averages 6-8 inches annually. The Unit's dry climate is punctuated with monsoon rainfall in mid to late summer, and limited winter precipitation (Comrie and Glenn 1998).

Much of the Newberry, Rodman and Ord Mountain Mountains Management Unit is in public ownership, although some parcels of private land occur throughout the area. The majority of the public land is administered by the U.S. Bureau of Land Management (BLM) with a few parcels entrusted to the California State Lands Commission.

Desert bighorn primarily occupy the Newberry and Ord Mountains, while Rodman Mountains serve as transitional habitat during short forays or long-distance movements into the Bullion Mountains (Prentice et al. 2018). As discussed below, this variation in habitat use is likely due to a variety of factors including: water availability and/or reliability, forage presence and quality, elevation and temperature.

Vegetation

There are three main vegetation communities within the Newberry, Rodman and Ord Management Unit. The predominant vegetation community is the creosote bush shrubland, followed by the Mojave yucca shrubland, and the blackbrush shrubland (Thomas et al. 2004). Creosote bush (*Larrea tridentata*) is commonly found in both rocky and well drained soils on alluvial fans, bajadas, small washes, and rocky slopes. Creosote and Mojave yucca (*Yucca schidigera)* often overlap between 700 and 1000 meters above sea level. Mojave yucca shrubland tends to occupy rocky slopes, upper bajadas and alluvial fans. Lastly, blackbrush (*Coleogyne ramosissima*) shrubland is found overlapping Mojave yucca, but tends to be slightly higher in elevation than creosote bush. Blackbrush is generally found on rocky highlands, alluvial slopes and bajadas (Thomas et al. 2004). An important plant species for bighorn in this management unit and commonly found in the Creosote and Mojave yucca shrublands is catclaw (*Senegalia greggii*). Catclaw is commonly found in and along washes and is an important food source for desert bighorn sheep in the hot, summer months. A large portion of the Rodman Mountains is covered by lava beds and offers very sparse vegetation.

Water

Generally, water is extremely limited in the Mojave Desert. While that remains true in the Newberry, Rodman and Ord Mountains Management Unit, there is ample opportunity to improve natural water sources to increase water availability to desert wildlife.

The Newberry Mountains contain two natural water sources accessible to bighorn sheep. Kane Spring is managed by a private cattle company, and though the spring is adjacent to escape terrain, it is not typically used by bighorn sheep, possibly due to vehicle traffic or cattle use. Hidden Spring requires periodic management of brush overgrowth. Ord Mountain has four springs with the potential for bighorn use. Three of the springs and a stock (cattle) tank are known to be used by bighorn. An old well also has the potential to be used as a wildlife water source, but is not accessible to bighorn. East Ord Mountain does not have any known water sources. The West Ord Mountains have five potential springs, however, only Joker Spring has recorded bighorn use. This may be, in part, because the population does not appear to have expanded into the West Ord Mountains. Recent collar data has, however, documented short forays into the West Ord Mountains and this behavior may become more frequent if the population continues to expand. The Rodman Mountains are generally considered transitional habitat and perhaps their lack of reliable water sources reflect that. One known tenaja, a natural rock pool, is occasionally known to be used by bighorn. The year 2018 marked the first documented visit by bighorn to Sheep Spring. However, this spring does not provide consistent water, especially in the hot season when it is needed most. Lastly, it is unknown whether bighorn use Shooting Spring, although it, too, is an unreliable water source.

RANGE CONDITIONS

Range conditions in the Mojave Desert vary considerably from year to year, season to season, and area to area, and are a function of the timing and amount of annual rainfall (Noy-Meir 1973). Thus, forage availability can vary both within and among years, and even within the management unit.

Livestock

The Newberry, Rodman, Ord Management Unit contains two grazing allotments, the Ord Mountain allotment and the Stoddard Mountain allotment. The Ord Mountain allotment potentially permits the year-round grazing of up to 307 cattle and 8 horses. However, since 2005, the Ord Mountain allotment has been grazing only 20-30 head. As it happens, the desert bighorn population dramatically increased from 25-50 animals in 2001 (Epps et al. 2003) to over 200 animals in 2016 (Prentice et al. 2018). The Stoddard Mountain allotment permits the grazing of up to 800 domestic sheep from March 1st-June 1st of each year. This is an ephemeral allotment that permits up to 489 Animal Unit Months (AUMs) but depends on the presence of enough vegetation.

Although the lease currently states there are zero active AUMs, this may change in years of good rainfall.

Domestic goats and sheep are known to be kept on private property in Newberry Springs, an unincorporated community east of Barstow, and adjacent to the Newberry Mountains. Domestic livestock, such as sheep and goats, commonly carry organisms associated with pneumonia in bighorn sheep (Wild Sheep Working Group 2012). Due to the risk of transmission of these pathogens to naïve herds of bighorn sheep, domestic goats and sheep should be managed to maintain separation and minimize risk of spreading disease agents to bighorn sheep (Brewer et al 2014, Drew and Weiser 2017).

Private hobby farms may pose a threat if bighorn sheep approach and contact domestic livestock, or if domestic livestock manage to escape their enclosures. One such instance occurred in 2018 when two domestic goats were seen at a water source regularly used by desert bighorn sheep. In this instance, the goats stayed near the water source long enough to be removed.

Feral Animals

No feral animals are known to inhabit the Newberry, Rodman and Ord Mountains Management Unit.

Habitat Improvements

Several Wildlife Water Developments (WWDs) have been developed in the Newberry Mountains and just outside the unit boundary on the nearby military base. These WWDs were put in place to increase the availability of summer habitat within the management unit. These WWDs have been spearheaded by volunteers from the Society for the Conservation of Bighorn Sheep with support from employees from the local quarry, the Marine Corps Air Ground Combat Center Twentynine Palms, BLM and the Department.

Two WWDs have been added to the Newberry Mountains in an effort increase the availability of summer habitat. Outside of the unit boundary, two WWDs have been developed on the Marine Corps Air Ground Combat Center to encourage connectivity with the neighboring Bullion Mountains.

In recent summers the Newberry WWD has frequently gone dry, due to an increase in use and a decrease in efficiency of the check-dam currently responsible for filling the tanks. Ideally, the system collection and storage capacity should function to minimize water hauling efforts and provide a reliable water source for this growing population. This development would benefit from a retrofit and is likely a good candidate for modern rain mat WWD systems.

Other Human Influences

Among important human influences on bighorn sheep inhabiting the Newberry, Rodman and Ord Mountains is the construction of Interstate Highway 40 in the early 1970s. Movement corridors between mountain ranges are important components of

bighorn habitat (Schwartz et al. 1986; Bleich et al. 1990, 1996; Epps et al. 2007). A historical account of a ram hit by a train near the Pisgah Crater in 1920 suggests historic movement between the Cady and Rodman Mountains or units nearby (Weaver and Mensch 1971); however contemporary genetic analyses (Epps et al. 2005) do not indicate gene flow across I-40. Genetic data (Epps unpublished data) and GPS data (Prentice et al. 2018) have documented geneflow and movement into the Bullion Mountains to the southeast.

Mining has occurred throughout the area beginning in the late 1800s (Weber 1963), and while many tons of ore have been mined from the Ord Mountains and Newberry and Rodman have been explored extensively, no significant mining production has been recorded (Cox et al. 1987). Two active quarries operate within the unit boundary. Limited hunting, primarily for Gambel's quail (*Callipepla gambelii*) or a variety of predators, may occur in the management unit. Limited recreational rockhounding also occurs there. All of these activities are compatible with the existing population of bighorn sheep. Vehicular access is limited to existing roads and trails by the Bureau of Land Management. Currently, no evidence exists that human infrastructure or use of the area present obstacles to the persistence of bighorn sheep within the management unit.

THE BIGHORN POPULATION

DISTRIBUTION AND HABITS

Historic distribution was described in a 1971 report as small bands of ewes on the northern slopes of Ord Mountain, old evidence of sheep use in the Newberry Mountains, and no evidence of use in the Rodman Mountains (Weaver and Mensch 1971). Recent aerial surveys, GPS collar data, and field observations, show bighorn sheep favor Ord Mountain and the Newberry Mountains, with some use on East Ord Mountain. Meanwhile, the West Ord Mountains appear to have very little use but recent GPS data suggests a slow expansion into the area may be occurring (CDFW unpublished data). The Rodman Mountains, however, do not see regular use by bighorn sheep and seem to serve as a transitional habitat for occasional forays or movements.

In December 2014, one collared, adult ewe made a week-long, 50 mile, journey from the Newberry Mountains to the Bullion Mountains, an adjacent range to the southeast (Prentice et al. 2018). Days later, a second adult ewe made the same trek, only starting on Ord Mountain; GPS locations from this ewe revealed a different path through the Rodman mountains but coalesced with the first ewe once in the Bullion Mountains. These forays began in early December and both ewes returned to their respective mountains in June. The same individuals repeated this movement pattern the following year, coinciding with the lambing season. Collar data were not available in 2016 or 2017, but one of the ewes was recollared in the fall of 2018 and was once again documented moving into the Bullions in early February of 2019 (CDFW unpublished data).

POPULATION DYNAMICS

Population Size and Trends

Historical data on population size and trends are limited. Weaver and Mensch reported severe overgrazing in the area and surmised that competition from cattle contributed to the decline of sheep in the unit (1971). In the same report, they recorded the population as extirpated after searching for a remnant herd. Prior to their extirpation only small counts of sheep were recorded in the area (Table 1). Torres et al. (1994) estimated the total of the combined populations at Ord and Newberry Mountains to be less than 50, Epps et al. (2003) grouped the two as one population and estimated that there were less than 50 bighorn sheep in the area. It is not known if or how the Ord and Newberry populations came to be reestablished in the area. One hypothesis may be that extremely low numbers of bighorn sheep in the unit were undetected during historic investigations and miscategorized as extirpated (Weaver and Mensch 1971). A second hypothesis is the vacant habitat was recolonized by a neighboring herd unit. Female bighorn sheep are typically reluctant to disperse from natal range (Geist 1967, 1971) making recolonization seem unlikely (Geist 1967, 1971), however GPS data mentioned above reveal ewes in the population making intermittent long-distance movements necessary to establish a population in the unit.

Contemporary management using a simultaneous double count method (Graham and Bell 1989) in the unit has revealed a robust population, perhaps benefiting from greater availability of forage due to reduced competition from cattle. A 2016 survey estimated 189 (95% confidence intervals of 174-239) desert bighorn sheep, and a 2018 survey estimated 256 (95% confidence intervals of 208-303) bighorn sheep within the unit.

Population Structure

Historical records do not offer specifics about population structure. Available information indicates small populations, leading to extirpation, and then a resurgence of a small population to its current estimated size. The population growth may be attributed to the reduction of competition from cattle as mentioned above. A 2018 helicopter survey in the unit reveals high male to female ratios, 95:100, consistent with what is expected in populations with non-consumptive uses. The survey recorded a lamb to ewe ratio of 44:100, and yearling to ewe ratios of 33:100.

Mortality Factors

Diseases and Parasites

Bighorn sheep were captured in the Newberry, Rodman and Ord Mountains as part of a range-wide disease response and surveillance effort beginning in 2013. Samples were collected from 18 bighorn sheep within the unit. To date, the population has tested free of *Mycoplasma ovinpneumoniae (M.ovi)*, a bacterium associated with respiratory pneumonia in wild sheep and found in bighorn sheep in nearby management units. However, positive results for bovine respiratory syncytial virus (BRSV), epizootic

hemorrhagic disease virus (EHDV) and blue tongue virus (BTV) were obtained. Although no obvious signs exist that the diseases presently known limit bighorn sheep in the Newberry, Rodman and Ord Mountains Management Unit; the interactions between pathogens and population dynamics are often complicated and difficult to document. Given the prevalence of M.ovi in other neighboring bighorn herds and devastating effects, the Department close monitors the Newberry, Ord, and Rodman unit for disease-related mortalities.

Predation

No known records of mountain lions exist within the unit, nor do indications that predation poses a problem to the bighorn sheep in this management unit.

TRANSLOCATIONS

To date, there have been no translocation efforts into or out of this management unit. Further, given the increase in population size and expansion of range within the unit, there is currently no need or intent to augment the population. If it is determined in the future that the population could sustain removal of desert bighorn to reestablish or augment other populations, the translocation strategy shall adhere to Departmental policies regarding such efforts.

RECOMMENDATIONS FOR ACHIEVING MANAGEMENT GOALS

Section 4900 of the Fish and Game Code declares it ..."to be the policy of the state to encourage the preservation, restoration, utilization, and management of California's bighorn sheep population," and that "management shall be in accordance with the policy set forth in Section 1801" (of the Fish and Game Code). To fulfill that policy and to achieve management goals for bighorn sheep in the Newberry, Rodman and Ord Mountains Management Unit, the following recommendations are provided, though the degree and timing of their implementation by the Department may be influenced by human resource, fiscal and legislative constraints.

1. This bighorn population should continue to be monitored. Surveys should be conducted regularly to continue to develop information on population size and trends, structure, and rate of recruitment into the population. An effort should be made to develop a model that will be useful in projecting population size (Conner 2009, 2010) prior to conducting additional surveys. Following development of such a model, additional survey data will be necessary to validate and fine-tune any resulting model.

2. Approximately 201-300 bighorn sheep currently occupy the management unit. Given the population has been increasing in recent years and may continue to grow, the Department should determine appropriate population objectives while

considering factors such as the absence/reduction of grazing and the timing and amount of rainfall in the dynamics of this population.

3. Sex ratios, lamb:ewe, and yearling ratios should be recorded and monitored carefully. Abrupt changes in lamb:ewe ratios may suggest impacts from the onset of disease or other stressors.

4. Whenever bighorn sheep are captured in this management unit, appropriate samples should be collected for serological and other examinations to monitor incidence of diseases, parasites and, to the extent possible, changes in rates of infection. These results should be examined in the context of the status, condition, and productivity of the bighorn sheep population.

5. To minimize risk of introduced disease, efforts should be made to avoid contact between wild sheep and domestic sheep or goats.

6. Existing WWDs have likely played an important role in the growth and persistence of this population. These water sources must continue to be inspected at least twice a year, and necessary maintenance conducted to ensure availability of water continues uninterrupted. In the absence of any Department of Fish and Wildlife personnel assigned specifically to bighorn sheep habitat issues, inspections and maintenance may be conducted by volunteers affiliated with the Society for the Conservation of Bighorn Sheep.

7. Efforts should be made to keep the public informed of the status of this population, as well as management goals and activities. Information can be disseminated through the Department's public information officers, news releases, popular and technical articles, the Department's web site, publications, or other appropriate methods.

8. The Department should expand its cooperation with citizen groups that support and encourage sound management of bighorn sheep. The Department should continue to request assistance from interested citizens to conduct inspections, repairs, or improvements to existing water sources, with installation of new water sources, or when conducting surveys necessary for management of bighorn sheep. The Department has long-standing and successful relationships with several citizens groups dedicated to conservation of bighorn sheep and other wildlife, including the Society for the Conservation of Bighorn Sheep, Desert Wildlife Unlimited, and the California Chapter of the Wild Sheep Foundation. Continued participation of citizen groups is vital to successful management of bighorn in California.

9. In keeping with the overall policy of the California Department of Fish and Wildlife, this population should be considered in the context of its potential to provide recreational uses, including opportunities to harvest a limited number of mature males.

10. The management of bighorn sheep and their habitat within this unit shall be periodically updated in the biennial Desert Bighorn Sheep Status Report. The report may include: (a) results of aerial and ground surveys, distributional data, and age and sex composition of the population; (b) results of any capture or translocation efforts; (c) a report of water conditions, including any maintenance or improvements performed; (d) a summary of recent disease and parasite findings; (e) a summary of any telemetry or other research findings; and (f) a summary of any habitat disturbances, poaching incidents, harassment, or other factors that might be detrimental to the population, along with recommendations for management actions to correct any such problems.

LITERATURE CITED

Bleich, V. C., J. D. Wehausen, and S. A. Holl. 1990. Desert-dwelling mountain sheep: conservation implications of a naturally fragmented distribution. Conservation Biology 4:383-390.

Bleich, V. C., J. D. Wehausen, R. R. Ramey II, and J. L. Rechel. 1996. Metapopulation theory and mountain sheep: implications for conservation. Pages 353-373 in D. R. McCullough, editor. Metapopulations and wildlife conservation. Island Press, Covelo, California.

Brewer C. E., V. C. Bleich, J. A. Foster, T. Hosch-Hebdon, D. E. McWhirter, E. M. Rominger, M. W. Wagner, and B. P. Wiedmann. 2014. Bighorn Sheep: Conservation Challenges and Management Strategies for the 21st Century. Wild Sheep Working Group, Western Association of Fish and Wildlife Agencies, Cheyenne, Wyoming, USA.

Comrie, A. C., and E. C. Glenn, 1998: Principal components-based regionalization of precipitation regimes across the Southwest United States and Northern Mexico, with an application to monsoon precipitation variability. Climate Research 10: 201–215

Conner, M. 2009. Bighorn sheep and monitoring: why, how, and what for. California Wild Sheep Winter 2009:12-13.

Conner, M. 2010. Bighorn sheep monitoring in SE California: using monitoring data to project populations size forward 1-2 years. California Wild Sheep Spring 2010:26-28.

Cox, B. F., A. G. Griscom, J. E. Kilburn, G. L. Raines, and D. H. Knepper,Jr. 1987. Mineral Resources of the Newberry Mountains and Rodman Mountains Wilderness Study Areas, San Bernardino County, California. United States Geological Survey. Bulletin B-1712-A.

Drew, M. L. and G. C. Weiser. 2017. Potential disease agents in domestic goats and relevance to bighorn sheep (Ovis canadensis) management. PLoS ONE. 12(3):1-10. doi:10.1371/journal.pone.0173396.

Epps, C. W., V. C. Bleich, J. D. Wehausen, and S. G. Torres. 2003. Status of bighorn sheep in California. Desert Bighorn Council Transactions 47:20-35.

Epps, C. W., P. J. Palsbøll, J. D. Wehausen, G. K. Roderick, R. R. Ramey II, and D. R. McCullough. 2005. Highways block gene flow and cause a rapid decline in genetic diversity of desert bighorn sheep. Ecology Letters 8:1029-1038.

Epps, C. W., J. D. Wehausen, V. C. Bleich, S. G. Torres, and J. S. Brashares. 2007. Optimizing dispersal and corridor models using landscape genetics. Journal of Applied Ecology 44:714-724.

Geist, V. 1967. A consequence of togetherness. Natural History 76:24, 29-30.

Geist, V. 1971. Mountain sheep: a study in behavior and evolution. University of Chicago Press, Chicago, IL.

Graham, A., and R. Bell. 1989. Investigating observer bias in aerial survey by simultaneous double counts. Journal of Wildlife Management 53:1009-1016.

Noy-Meir, I. 1973. Desert ecosystems: environment and producers. Annual Review of Ecology and Systematics 4:25-51.

Prentice, P., A. Evans, D. Glass, R. Ianniello, and T. Stephenson. 2018. Desert Bighorn Sheep Status Report: November 2013 to October 2016. *California Department of Fish & Wildlife.* Report published September 6, 2018.

Schwartz, O. A., V. C. Bleich, and S. A. Holl. 1986. Genetics and the conservation of mountain sheep Ovis canadensis nelsoni. Biological Conservation 37:179-190.

Thomas, K., T. Keeler-Wolf, J. Franklin, and P. Stine. 2004. Mojave Desert Ecosystem Program: Central Mojave Vegetation Database. U.S. Geological Survey: Western Ecological Research Center & Southwest Biological Science Center.

Torres, S. G., V. C. Bleich, and J. D. Wehausen. 1994. Status of bighorn sheep in California, 1993. Desert Bighorn Council Transactions 38:17-28.

Trefethen, J.B. (editor). 1975. The Wild Sheep in Modern North America. Boone and Crockett Club. pp. 58-64.

Weaver, R. A., and J. L. Mensch. 1971. A report on desert bighorn sheep in southwestern San Bernardino County, Report 71-2. California Department of Fish and Game Federal Aid in Wildlife Restoration Job Progress Report W-51-R.

Weber, F. H. 1963. Geology and Mineral Deposits of the Ord Mountain District, San Bernardino County, California. California Division of Mines and Geology. Special Report 77.

Wild Sheep Working Group. 2012. Recommendations for Domestic Sheep and Goat Management in Wild Sheep Habitat. Western Association of Fish and Wildlife Agencies.

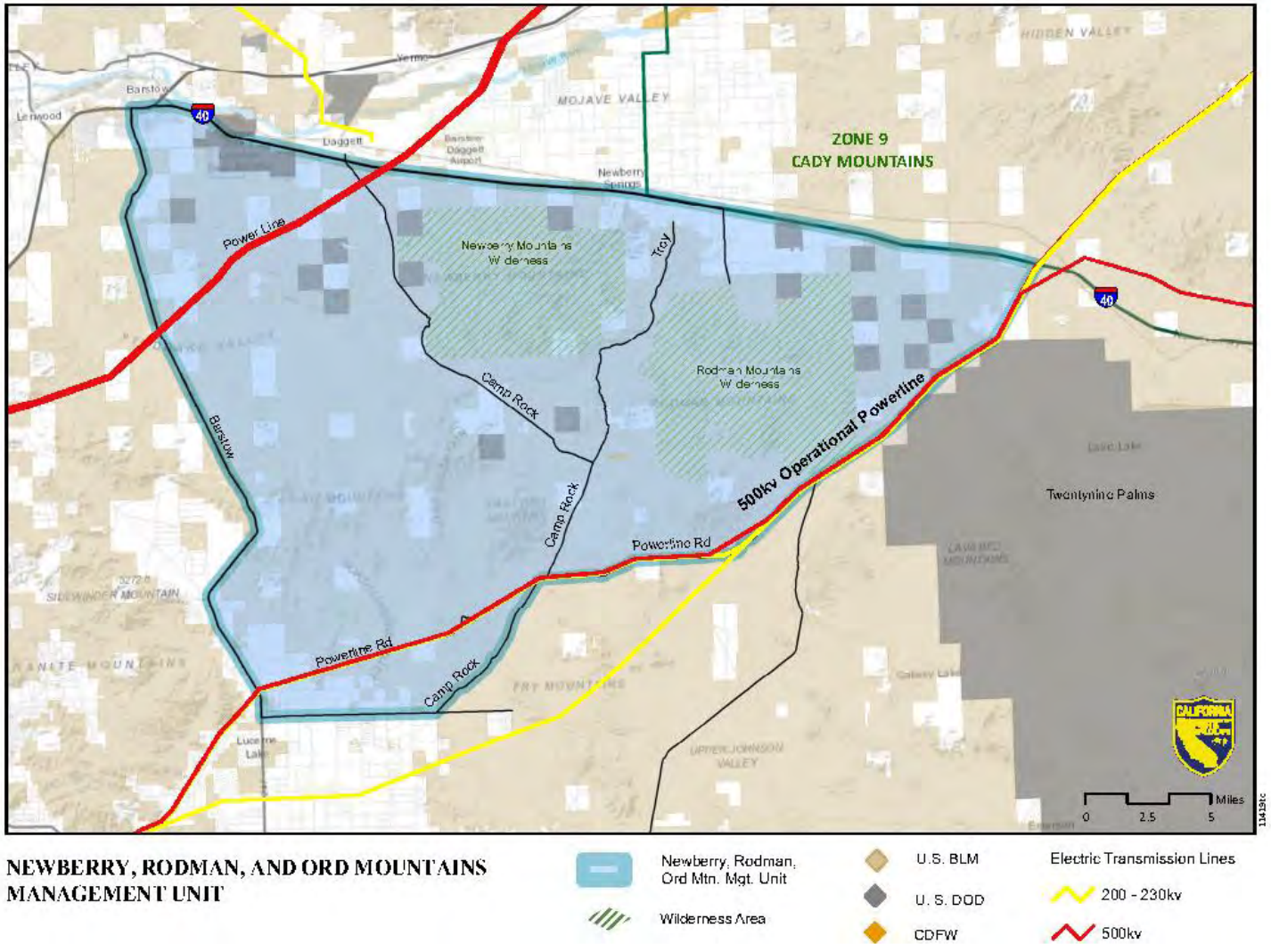
Table 1: Number of Bighorn Sheep estimated to inhabit the Newberry, Rodman and Ord Mountains, San Bernardino County, California, 1957 – 2018

Year	Estimated number of bighorn sheep	Authority
1957	0	F. Jones (Trefethen 1975)
1971	0	R. Weaver and Mensch (1971)
1988	<25	R. Clark (unpublished data)
1994	25-50	S. Torres (1994)
2001	25-50	C. Epps et al. (2003)
2011	101-150	R. Abella (2011)
2016	150-200	P. Prentice (unpublished data)
2018	201-250	P. Prentice (unpublished data)

Table 2: Sex and Age Classification of bighorn sheep observed during aerial surveys in the Newberry, Rodman and Ord Mountains Management Unit, 1994 – 2018

Date	Effort (Hours)	Lambs	Ewes	Yearling Ewes	Males				Uncla-ssified	Total
					I	II	III	IV		
5/27/1994	4	1	12	3	0	2	1	2	0	21
10/6/2016	7	49	64	6	11	8	13	20	0	171
10/17/2018	5.7	35	79	16	10	14	20	28	2	204

Figure 1: Boundaries of the Newberry, Rodman and Ord Mountains Bighorn Sheep Management Unit, San Bernardino County, California



DRAFT
ENVIRONMENTAL DOCUMENT

Section 362, Title 14, California Code of Regulations

Regarding

Bighorn Sheep Hunting

SCH 2018112036

February 14, 2019

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND WILDLIFE
On behalf of the FISH AND GAME COMMISSION

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CHAPTER 1. SUMMARY

Existing law (Section 4902, California Fish and Game Code (FGC)) allows the Fish and Game Commission (Commission) to authorize sport hunting of mature Nelson bighorn rams in geographic areas for which management plans have been developed. Section 4901 of the FGC directs the Department of Fish and Wildlife (Department) to develop management plans for each Nelson bighorn sheep unit. These plans guide conservation actions and support recreational harvest opportunities established by the Commission. Appendix 1 includes FGC sections pertinent to Nelson bighorn sheep management.

State law requires the Commission to review the mammal hunting regulations, and the Department to present its recommendations for changes to the mammal hunting regulations to the Commission at a public meeting. Mammal hunting regulations adopted by the Commission provide for hunting Nelson bighorn sheep in specific areas of the State (Section 362, Title 14, California Code of Regulations (CCR)). The full text of Section 362 with proposed changes appears in Appendix 2.

In adopting regulations for limited hunting of mature Nelson bighorn sheep rams, the Commission would implement Section 4902 of the FGC, which is consistent with the wildlife conservation policy adopted by the California Legislature (Section 1801, FGC). The State's wildlife conservation policy, among other things, includes an objective of providing hunting opportunities when such use is consistent with maintaining healthy wildlife populations.

PROPOSED PROJECT AND ALTERNATIVES

The proposed project involves modifications to the current bighorn sheep hunting regulations for the 2019/2020 hunting season and continuing until the Commission adopts subsequent regulations modifying the tag limits. The tag limits will be consistent with statutory limitations (sections 4900 to 4904, FGC) on mature ram harvest within each hunt zone. Specifically, the Department proposes to:

- Increase the tag quota range in the Marble Mountains Zone by one tag, the Clark/Kingston Mountain Ranges Zone by two tags, and the White Mountains Zone by one tag

- Increase the individual tag quotas in other zones within previously analyzed quota ranges
- Establish a new hunt zone in the Newberry, Rodman, and Ord Mountains;
- Reallocate the Kelso and Old Dad Peak Fund-Raising Tag to the Cady Mountains Fund-Raising tag (see full regulatory text in Appendix 2).

In total, the project would increase the total availability of tags by ten, for a statewide total of up to 42 tags. Because final tag allocations are not established until survey results are completed and analyzed, the Commission, based on a recommendation from the Department, is evaluating a potential range of proposed hunting tag quotas. Upon completion of the aforementioned analyses, the Department will provide the Commission with an updated recommendation to evaluate as it makes a final decision on hunting tag allocations.

The Commission is also considering two alternatives to the proposed project that could feasibly attain the objectives of the project. Alternative 1 (no change) would maintain the existing tag quotas and zone without change. Alternative 2 (increased harvest) involves increasing tag quotas in the existing hunt zones by 50 percent. Current and proposed harvest strategies generally allow for continued population growth through time while remaining consistent with the statutory limitations. The Increased Harvest alternative may not affect population growth over time but would likely exceed the statutory limit of mature ram harvest in most hunt zones.

SUMMARY OF IMPACTS AND MITIGATION

Table 1 summarizes Commission findings that there are no significant long-term adverse impacts associated with the proposed project or any of the project alternatives considered for the 2019 Nelson bighorn sheep hunting regulations.

Table 1: Effects on the Environment of Limited Public Hunting of Bighorn Sheep

Alternative	Significant Impact	Nature of Impact	Mitigation Available	Nature of Mitigation
Proposed Project: Modify number of tags, establish a new hunt zone, and reallocate a fund-raising tag	No	None	N/A	N/A
Alternative 1: No change	No	None	N/A	N/A
Alternative 2: Increased harvest of mature rams	No	None	N/A	N/A

It is anticipated the number of tags issued will fall near the upper end of the proposed ranges (Table 2). Given the low number of tags in each zone, the resulting harvest for 2019 will likely be similar to that of 2018. On a statewide basis, the total hunter harvest will likely exceed that of previous years due to high hunter success (generally approaching 100 percent), the increased number of tags and addition of one new hunt zone. Based on success rates from previous years, the actual harvest is anticipated to be approximately 95 percent of the bighorn sheep tags allocated for 2019.

TRIBAL COORDINATION

The Department is committed to developing and maintaining an effective, positive and cooperative relationship with California federally recognized Tribes (Tribes) regarding Nelson bighorn sheep management. In order to achieve the goals regarding California's bighorn sheep populations, innovative management actions and collaboration will be required, and guidance from a statewide management plan (management plan) for Nelson bighorn sheep currently in development is necessary to help mediate competing and conflicting interests and assure the conservation, protection, restoration, enhancement and reestablishment of California's bighorn sheep populations and habitat. This is critical to providing cultural, scientific, educational, recreational, aesthetic and economic benefits for present and future generations of Californians.

A letter to Tribal Representatives on November 7, 2018 provided notification of the Department's proposal to amend hunting regulations for Nelson bighorn sheep pursuant

to the California Environmental Quality Act (CEQA), Public Resources Code Section 21080.3.1. The letter described opportunities to provide input to the proposed regulations through consultation pursuant to Public Resources Code sections 21080.3.1 and 21030.3.2, or during the public comment period for release of this Draft Environmental Document.

AREAS OF CONTROVERSY

A Notice of Preparation was filed with the State Clearinghouse on November 13, 2018. Pursuant to Section 21080.3.1 of the California Environmental Quality Act (CEQA), in a joint letter, the Commission and Department informed Tribal Representatives of the proposed project. One Tribe has requested to review the Draft Environmental Document (DED).

Both the Commission and the Department have encouraged public input regarding the nature and scope of the environmental impacts to be addressed in the DED. The Department presented information on potential changes to bighorn sheep hunting regulations at the September 20, 2018 Wildlife Resources Committee (WRC) meeting held in Sacramento. A scoping session to discuss documents prepared in support of mammal hunting and trapping regulations was held in Sacramento, CA on November 30, 2018. No areas of controversy regarding nelson bighorn sheep hunting were identified at either meeting. Written comments have been submitted regarding specific hunting regulation changes (Appendix 3); no comments were received related to the scope of the analysis on environmental impacts under the CEQA.

RESOURCE AREAS ANALYZED IN THIS DOCUMENT

This DED analyzes the potential for significant impacts to Biological Resources and Recreation, as well as Cumulative Impacts. After completing an initial study (Appendix 4), reviewing the comments received during the scoping period, and evaluating the potential environmental impacts of the project, the other resource areas were eliminated based on the Commission’s determination that there was no potential for significant impact in those areas.

ISSUES TO BE RESOLVED

As provided by existing law, the Commission is the decision-making body (lead agency) considering the proposed project, while the Department has the responsibility for conducting management activities, such as resource assessments, preparing management plans, operating public hunting opportunities, and enforcing laws and regulations. The primary issue for the Commission to resolve is whether to change Nelson bighorn sheep hunting regulations as an element of bighorn sheep management. If such changes are authorized, the Commission will specify the areas, seasons, methods of take, number of bighorn sheep tags to be allocated, and other special conditions.

FUNCTIONAL EQUIVALENCY

CEQA requires all public agencies in the State to evaluate the environmental impacts of projects they approve, including regulations, which may have a potential to significantly affect the environment. CEQA review of the proposed project will be conducted in accordance with the Commission's Certified Regulatory Program (CRP) approved by the Secretary for the California Resources Agency pursuant to Public Resources Code Section 21080.5 (See generally CCR, Title 14, sections 781.5 and 15251(b)). The Department has prepared this DED, which is the functional equivalent of an Environmental Impact Report, on behalf of the Commission in compliance with this requirement. The DED provides the Commission, other agencies, and the general public with an objective assessment of the potential effects of the proposed action.

In addition, pursuant to Section 15087 of the CEQA Guidelines, this DED is available for public review for 45 days. During the review period, the public is encouraged to provide written comments regarding the environmental document to the Department of Fish and Wildlife, Wildlife Branch, 1812 9th Street, Sacramento, CA 95811. Comments must be received by the Department by April 5, 2019. This DED and any documents incorporated by reference will be available for inspection at: 1812 9th Street, Sacramento, CA 95811.

Written and oral comments received in response to the DED will be addressed in a Response to Comments document, which, together with the DED, will constitute the Final Environmental Document. In addition, the Commission will consider the comments

received pursuant to the Administrative Procedure Act addressing the proposed regulations. The rulemaking process under the Administrative Procedure Act to promulgate regulations is running concurrently with this environmental review pursuant to CEQA. Once completed, the Final Environmental Document will inform the Commission's exercise of discretion as lead agency under CEQA in deciding whether or how to approve the proposed project as described in this document and the proposed regulations.

CHAPTER 2. THE PROPOSED ACTION

The Commission, based on a recommendation from the Department, is considering the following modifications to existing Nelson bighorn sheep hunting regulations.

1. Increase the Tag Range in the Marble Mountains Zone, the Clark/Kingston Mountain Ranges Zone, and the White Mountains Zone

In order to maintain management goals and objectives, it is periodically necessary to modify quotas in response to dynamic environmental and biological conditions. This proposed project modifies Nelson bighorn sheep tag ranges to account for fluctuations in populations of bighorn sheep (Table 2).

The increased tags will allow the Department to increase opportunity while providing a biologically appropriate harvest within the Marble Mountains, Clark/Kingston Mountain Ranges, and White Mountains zones. The new tag ranges would be 0-5, 0-4, and 0-6 respectively for the general draw hunts in those zones.

Section 4902, FGC limits the number of hunting tags for mature Nelson bighorn sheep rams to no more than 15 percent of the number of such males estimated to occur in each geographic area for which an approved management plan has been prepared. Annual population estimates are based on aerial surveys carried out by Department biologists, or on models developed from data obtained during those aerial surveys. Annual survey data or resulting models of population size upon which tag allocations are based are available from the Wildlife Branch, California Department of Fish and Wildlife, Sacramento, California.

2. Establish a New Hunt Zone

There are currently 9 bighorn sheep hunting zones in California. As a result of successful Nelson bighorn sheep conservation and management efforts in the Newberry, Rodman and Ord Mountains in San Bernardino County, a new hunt zone with a tag range of 0-6 is proposed. The new Nelson bighorn sheep hunt zone would be called the Newberry, Rodman and Ord Mountains bighorn sheep hunt and be added to the list of areas open to hunting of Nelson bighorn sheep (Figure 1). The number of tags (range 0-6) to be issued would be restricted to no more than 15 percent of the number of mature Nelson bighorn rams estimated to occur in the hunt zone, as stipulated by state law. Tags would be available to the general public during a season beginning on the first Saturday in December 2019, and continuing through the first Sunday in February 2020 . This opportunity complies with sections 4900 to 4904 of the FGC and recommendations provided in a management plan for the Newberry, Rodman and Ord Mountains Unit, forthcoming in March 2019.

3. Reallocate a Fund-raising Tag

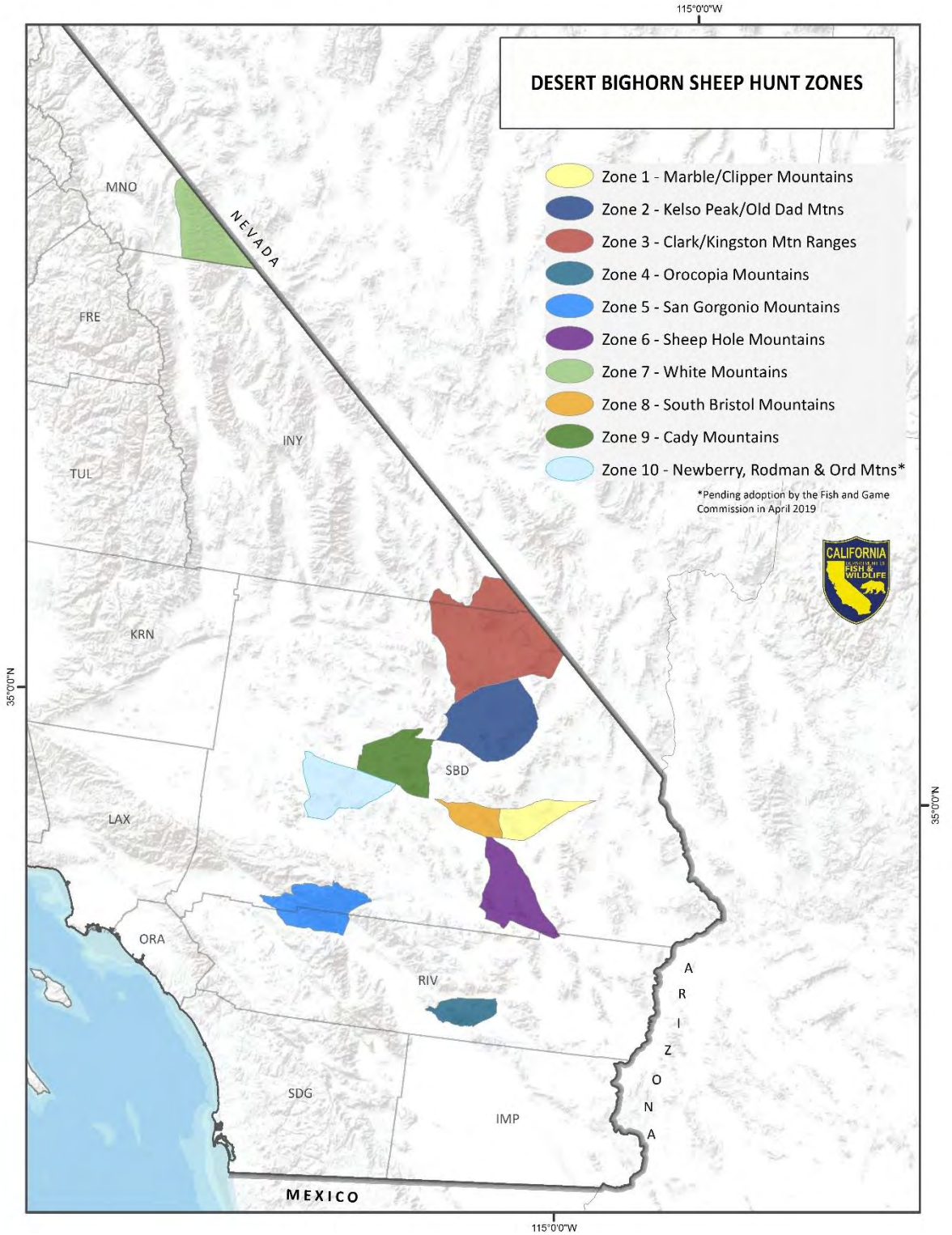
The proposed project would reallocate the Kelso and Old Dad Peak fund-raising tag to the Cady Mountains. This tag shall be valid from the first Saturday of November 2019 through the first Sunday of February 2020.

Table 2: Proposed 2019 Tag Allocation

Hunt Zone or Tag	2018 Tag Allocation	2018 Tag Range	2019 Tag Range (Proposed)
Zone 1 - Marble Mountains	4	0-4	0-5
Zone 2 - Kelso Peak/Old Dad Mountains	0	0-4	0-4
Zone 3 - Clark/Kingston Mountain Ranges	2	0-2	0-4
Zone 4 - Orocopia Mountains	1	0-2	0-2
Zone 5 - San Gorgonio Wilderness	2	0-3	0-3
Zone 6 - Sheep Hole Mountains	0	0-2	0-2
Zone 7 - White Mountains	3	0-5	0-6
Zone 8 - South Bristol Mountains	1	0-3	0-3
Zone 9 - Cady Mountains	4	0-4	0-4
Zone 10 - Newberry, Rodman, Ord Mountains (New)	-	-	0-6

Open Zone Fund-Raising Tag	1	0-1	0-1
Marble/Clipper/South Bristol Mountains Fund-Raising Tag	1	0-1	0-1
Kelso and Old Dad Peak Fund-Raising Tag	0	0-1	-
Cady Mountains Fund-Raising Tag (New)	-	-	0-1
TOTAL	19	0-32	0-42

Figure 1: Desert Bighorn Sheep Hunt Zones



BACKGROUND AND EXISTING CONDITIONS

Historical Perspective of Bighorn Sheep Management in California

Bighorn sheep existing today probably are the descendants of similar animals that entered North America via the Bering land bridge during the Illinoisan glaciation, at least 150,000 years ago (Cowan 1940, Geist 1970). Wild sheep spread across the glaciated mountains of western North America during the Sangamon interglacial period. The Wisconsin glaciation, 10,000 to 125,000 years ago, then separated the animals into two populations that persisted in unglaciated areas. Subsequently, Dall's sheep (*Ovis dalli*) evolved from populations in the Alaska-Yukon region, and bighorn sheep (*Ovis canadensis*) evolved in a region south of glaciated mountains and forests in what is now the continental United States (as summarized by Bailey 1980). Following the Wisconsin glaciation, wild sheep radiated into dry, mountainous terrain.

Geist (1971) tied the evolution of Asiatic and North American sheep to the expanding availability of favorable habitat, an occurrence concomitant with receding glaciers. The races, or subspecies, of *Ovis canadensis* currently recognized as desert bighorn sheep evolved from wild sheep that persisted in the southern region despite climatic changes. In part, they may have persisted because of the lack of competition with other large, native herbivores (Bailey 1980).

In California, bighorn sheep are found primarily in the southeastern part of the State in numerous Mojave and Sonoran desert mountain ranges. They also occur in several populations in the eastern Sierra Nevada; and, in three populations, in the Transverse Ranges of Ventura, Los Angeles, and San Bernardino counties. The probable historical and current distributions of bighorn sheep in California are illustrated in Figure 2.

Until recently, taxonomists have recognized three subspecies of mountain sheep in the state, including *O. c. californiana* (which was thought to occur throughout the Sierra Nevada and historically in northeastern California), *O. c. nelsoni* (which occurs throughout the majority of the Mojave and Sonoran deserts and in the transverse ranges of southwest California), and *O. c. cremnobates* (which occupied the peninsular ranges located primarily near the border with Mexico) (Cowan 1940). There have, however, been recent changes in nomenclature with respect to bighorn sheep inhabiting the Sierra Nevada and the peninsular ranges. Indeed, bighorn sheep occupying the

Sierra Nevada were designated *O. c. californiana* and are the only representative of that taxon; at the same time, all other wild sheep formerly designated as *O. c. californiana* were synonymized with *O. c. canadensis*, and are now recognized as the Rocky Mountain subspecies (Wehausen and Ramey 2000). Moreover, bighorn sheep inhabiting the peninsular ranges and formerly recognized as the subspecies *cremnobates*, were synonymized with *O. c. nelsoni*, and no longer are considered a distinct subspecies (Wehausen and Ramey 1993).

To further complicate nomenclature, Joseph Grinnell (1912) had assigned the subspecific epithet *sierrae* to those animals he described from the Sierra Nevada before Cowan (1940) published his revision of the taxonomy of North American mountain sheep and, obviously, before Wehausen and Ramey (2000) synonymized *californiana* with *canadensis*. Because sheep in the Sierra Nevada warrant subspecific recognition (Wehausen and Ramey 2000), judicious application of the rule of priority as it appears in the International Code of Zoological Nomenclature dictates that those animals are once again assigned to the subspecies *sierrae* (Wehausen et al. 2005).

Throughout much of the range occupied by bighorn sheep, the downward trend in numbers began with the human settlement of vast, uninhabited areas (Buechner 1960). Although a great deal of attention has been paid to the potential impacts of unregulated market hunting associated with the influx of gold mining during the 1850s (Buechner 1960) another likely factor was the introduction of livestock, primarily domestic sheep, throughout much of the range of bighorn sheep (Buechner 1960). Indeed, Francisco Garces, who chronicled the expeditions of Father Anza as he traveled from what is now Arizona north and west toward the Pacific coast of California, described dead and dying bighorn sheep in the Santa Rosa Mountains of southern California as early as 1776 (Bolton 1930). Garces described dead and moribund animals in association with livestock being herded northward by the Anza Expedition (Bolton 1930). Further evidence persists in the form of a legend among the Kaliwa Indians of Baja California, which describes a pestilence that killed many wild sheep in northern Mexico following the arrival of Spaniards and their livestock (Tinker 1978).

Historically, bighorn sheep were more numerous than they are today (Buechner 1960); a reasonable estimate for California is about 10,000 individuals in 1800 (Bleich 2006). These animals were distributed among approximately 100 populations at that time (Wehausen et al. 1987a).

In the decades immediately following the discovery of gold in California, several populations of bighorn sheep in the Sierra Nevada were eliminated, likely as a result of diseases contracted from domestic sheep that were grazed in that mountain range. The reduction in bighorn sheep, and wildlife populations in general, resulted in the first legal protection for bighorn sheep and other species of large mammals in California. At that time, it was believed that wildlife populations protected from hunting would flourish and recolonize former ranges and, in 1872, the California Legislature passed a law protecting deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), and pronghorn (*Antilocapra americana*) for eight months of the year. In 1878, the Legislature amended the act to establish a four-year moratorium on the taking of any elk, pronghorn antelope, bighorn sheep, or female deer and, in 1883, the moratorium on taking bighorn sheep was extended indefinitely. In 1933, bighorn sheep became the first species in California to be classified as "fully protected" by the California Legislature (California Department of Fish and Game 2005a).

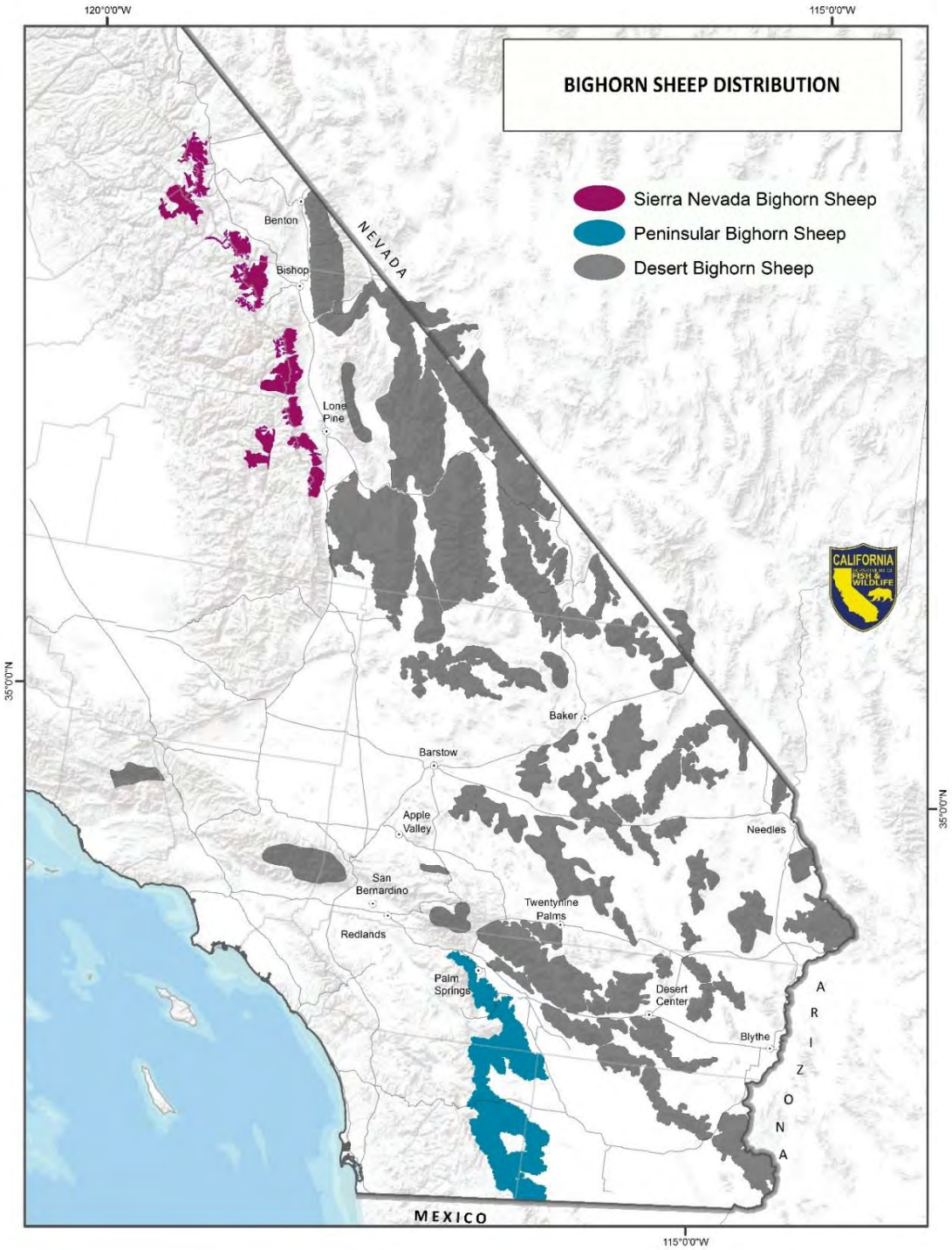
Despite the well-intentioned efforts of the California Legislature, total protection did not halt the loss of bighorn sheep in California (Wehausen et al. 1987a, Bleich 2006), and populations of bighorn sheep continued to disappear (Epps et al. 2003). Historic surveys and population estimates suggest that diseases, habitat changes, and competition for forage, rather than illegal take, resulted in the elimination of bighorn sheep in some areas, of which the most recent examples were the losses of translocated populations of bighorn sheep at Lava Beds National Monument in Siskiyou County (Weaver 1983), and in the Warner Mountains of Modoc County (Weaver and Clark 1988), both of which are thought to have resulted from respiratory disease contracted from domestic sheep in those areas (Foreyt and Jessup 1982, Weaver and Clark 1988).

Contemporary Management of Bighorn Sheep in California

Currently, bighorn sheep occupy about 60 mountain ranges in California (Wehausen et al. 1987a, Abella et al. 2011); these populations are distributed primarily in the Sierra Nevada and desert regions of eastern and southern California (Epps et al. 2003). About 600 bighorn sheep occupy the Sierra Nevada, 800 occupy the peninsular ranges, and the remainder (about 4,000) occur in the transverse ranges, the Mojave Desert, and the Sonoran Desert. There are more populations than there are mountain ranges

supporting bighorn sheep, because some larger mountain ranges contain multiple populations based on distinct ranges of females (Bleich et al. 1996).

Figure 2: Bighorn Sheep Distribution in California



As a result of the aforementioned taxonomic and nomenclatural revisions, two subspecies of bighorn sheep currently are recognized in California. *Ovis canadensis nelsoni* occurs in suitable habitat in the Transverse Ranges, the Mojave Desert, and the Sonoran Desert; *O. c. sierrae* is restricted to the Sierra Nevada. Since 1998, bighorn sheep occupying the peninsular ranges have been afforded protection under the federal Endangered Species Act (U.S. Fish and Wildlife Service 2000), and bighorn sheep occupying the Sierra Nevada have been afforded similar protection since 2000 (U.S. Fish and Wildlife Service 2008). The California Fish and Game Commission has classified bighorn sheep inhabiting the peninsular ranges as threatened, and those inhabiting the Sierra Nevada are classified by the Commission as endangered.

Although the Department has supported an active management program for many years, contemporary management of bighorn sheep began with the passage of Senate Resolution 43 in 1963 (Bleich 2006). Input from interested conservation groups was instrumental in the passage of that resolution, which resulted in funding for the most detailed survey of bighorn sheep yet conducted in California; until that time, basic inventory data consisted only of cursory surveys that occurred in 1940, 1946, and 1957. Survey work completed during 1968-1972 as a result of Senate Resolution 43 yielded an estimate of 3,700 bighorn sheep in California (Weaver 1972). More importantly, however, was the fact that for the first time ever the management needs of bighorn sheep, including land-use conflicts, water developments, and re-introductions, were addressed.

As a result of management recommendations resulting from implementation of Senate Resolution 43, the Department of Fish and Game (now Fish and Wildlife) implemented an ambitious program to acquire habitat for bighorn sheep occupying the peninsular ranges. Additionally, the Volunteer Desert Water and Wildlife Survey (VDWWS) was founded to help carry out recommendations for water developments put forth by Weaver (1972), and to assist the Department with census efforts and other work related to bighorn sheep and other desert wildlife. Since 1970, volunteers have contributed thousands of hours of labor to the program, resulting in dozens of habitat enhancement projects directed specifically at conserving populations of bighorn sheep (Bleich et al. 1982, Bleich 1990).

An effort to reestablish bighorn sheep on historical ranges also occurred as a result of Senate Resolution 43. The first such effort took place in 1971 at Lava Beds National

Monument, and in 1980 a similar effort was initiated in the Warner Mountains. Both of those attempts ultimately were unsuccessful.

In 1979, translocation of California bighorn sheep from the Mount Baxter herd in the Sierra Nevada was initiated, largely as a result of research conducted by Wehausen (1979) in combination with recommendations by the Department (Leach 1974) that the subspecies be introduced to areas from which it had been eliminated. Since then, a total of 118 animals have been translocated, 108 of which were used to reestablish bighorn sheep populations in three areas of the Sierra Nevada: Wheeler Crest, Mount Langley, and Lee Vining Canyon or to augment other extant populations in that range, and 10 of which were translocated to the Warner Mountains of Modoc County, California. These translocations took place in 1979, 1980, 1982, 1986, 1987, 1988, 2001, 2005, and 2009.

In 1981, Assembly Concurrent Resolution 41 was passed and directed the Department to prepare a study plan to investigate population status, competition, diseases, and the potential to introduce bighorn sheep to historically occupied areas in California. Funding was allocated from the California Environmental License Plate Fund for the purpose of carrying out the investigations outlined by the Department's study plan (Weaver 1983).

In 1983, the Department completed a statewide management plan for bighorn sheep (California Department of Fish and Game 1983). The plan identified a number of specific management programs, designed to help meet statewide goals for the management and restoration of bighorn sheep populations. Goals specifically listed in the statewide plan are to: (1) maintain, improve, and expand bighorn sheep habitat where possible or feasible; (2) reestablish bighorn sheep populations on historic ranges where feasible; (3) increase bighorn sheep populations so that all races become numerous enough to no longer require classification as threatened or fully protected; and (4) provide for aesthetic, educational, and recreational uses of bighorn sheep. Aside from the specific recommendations of Leach et al. (1974) regarding California bighorn sheep, this was the first official Department document to advocate the reintroduction of all subspecies of bighorn sheep in California.

Subsequently, in 1983 a series of translocation projects involving Nelson bighorn sheep (*O. c. nelsoni*) from two large Mojave Desert mountain ranges began. To date, 230 animals have been removed from Old Dad Peak for translocation to the Whipple

Mountains, Sheep Hole Mountains, Eagle Crags, Argus Mountains, Avawatz Mountains, Chuckwalla Mountains, Bristol Mountains, and Bullion Mountains. A total of 55 animals have been removed from the Marble Mountains for translocation to the Whipple Mountains and Eagle Crags (Bleich et al. 1990, Torres et al. 1994).

By 1983, it was determined that the population of Nelson bighorn sheep in the San Gabriel Mountains was large enough to support removals for translocation (Holl and Bleich 1983), and in 1983, 1985, and 1987, a total of 71 animals were removed from winter ranges in the South Fork of Lytle Creek and Cattle Canyon. Those animals were translocated to a vacant, historical winter range in the Prairie Fork of the San Gabriel River (within the San Gabriel Mountains) and to historical habitat near San Rafael Peak, in Ventura County (Bleich et al. 1990). In 1988, 10 sheep were captured in Lone Tree Canyon of the White Mountains, Mono County, and translocated to Silver Canyon, also in the White Mountains, Inyo County. Since 1979, the Department has reestablished 11 new populations and augmented four small populations through translocation projects.

In 1986, the enactment of Assembly Bill 3117 (Chapter 745) created a series of laws which comprised the most significant legislation affecting bighorn sheep management in California since the 1878 legislation that established the initial moratorium on the taking of bighorn sheep. This law contained language that directed the Department to prepare management plans for each population of bighorn sheep in California. In addition, Assembly Bill 3117 differed from previous legislation that would have authorized hunting in that it: (1) made bighorn sheep a game mammal in only two areas (Old Dad Peak and the Marble Mountains); (2) provided for one hunting tag to be available for fund-raising purposes each year with the revenues from bighorn sheep hunting to be put in an account set aside solely for the benefit of bighorn sheep; (3) set a biologically conservative limit on the number of tags which could be offered each year, not to exceed 15 percent of the mature males counted annually in each population; and (4) contained an expiration date of December 31, 1992, unless the Legislature extended it beyond that date. In 1990, the Legislature removed the expiration date.

Implementation of Section 4902 of the FGC (Appendix 2) has involved hunting of a limited number of mature Nelson bighorn rams since 1987, when specific regulations similar to the proposed action were initially adopted by the Commission. Hunts have been conducted annually since then, pursuant to Section 362 of Title 14, CCR.

Assembly Bill 977 amended sections 4902 and 4903, FGC, and thereby (1) permitted the Commission to authorize hunting of Nelson bighorn rams in management units for which plans have been developed pursuant to Section 4901, FGC; (2) increased to three the permissible number of fund-raising license tags to be available for programs and projects to benefit bighorn sheep (the number of these authorized, if more than one, would not be permitted to exceed 15 percent of the total number of tags authorized generally); and (3) specified that any use of those revenues for the Department's administrative overhead shall be limited to the reasonable costs associated with direct administration of the program.

The Department's Bighorn Sheep Management Program is currently revising the statewide management plan for Nelson bighorn sheep in California. This planning effort will identify and prioritize actions to ensure the long-term viability of bighorn sheep populations, consistent with existing State policy. Protection of important habitats and inter-mountain movement corridors, identification of future introduction sites, and habitat enhancements will be addressed. The planning effort is occurring in cooperation with the Bureau of Land Management, California Department of Parks and Recreation, Department of Defense (Military), and National Park Service (NPS).

Intensive data collection continues to provide basic information for updating and preparing additional management plans, as required by the FGC. These efforts include assessing habitat and potential movement corridors, and surveys to estimate population sizes, age class structure, sex ratios, sampling individual animals for the prevalence of diseases and parasites, and implementing strategies to stabilize or enhance individual populations of Nelson bighorn sheep.

EXISTING CONDITIONS

Regulated public hunting for Nelson bighorn sheep began in 1987 in California with passage of AB 3117, and has occurred without interruption since that date. Additional public hunts for Nelson bighorn sheep have been established subsequent to 1987 and annual hunts for Nelson bighorn sheep have been part of the existing conditions in California for the last 24 years. Appendix 1 lists the verbatim for the current and proposed conditions for hunting Nelson bighorn sheep in California.

POLICY CONSIDERATIONS

The Legislature formulates laws and policies regulating the management of fish and wildlife in California. The general wildlife conservation policy of the State is to encourage the conservation and maintenance of wildlife resources under the jurisdiction and influence of the State (Section 1801 of the California Fish and Game Code). The policy includes the following objectives (which are also the objectives for this proposed project):

1. To provide for the beneficial use and enjoyment of wildlife by all citizens of the State;
2. To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to man;
3. To provide for aesthetic, educational, and non-appropriative uses of the various wildlife species;
4. To maintain diversified recreational uses of wildlife, including hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with the maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience;
5. To provide for economic contributions so the citizens of the State through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the State, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resource;
6. To alleviate economic losses or public health and safety problems caused by wildlife; and
7. To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the above-stated objectives.

With respect to Nelson bighorn sheep, the Legislature has established the State’s policy regarding management in sections 4900 to 4904 of the FGC (Appendix 2). Section 4900 declares that bighorn sheep are an important wildlife resource of the state to be managed and maintained at sound biological levels, and that it is the policy of the state to encourage the preservation, restoration, utilization, and management of California's bighorn sheep populations, and that such management shall be in accordance with the

policy set forth in Section 1801 of the FGC. Section 4901 directs the Department to determine the status and trend of bighorn sheep populations by management units, and to prepare plans for each of the management units. Each plan is to address (a) the numbers, age, sex ratios, and distribution of bighorn sheep within the management unit; (b) range conditions and any competition that may exist as a result of human, livestock, wild burro, or any other mammal encroachment; (c) the need to relocate or reestablish bighorn populations; (d) the prevalence of disease or parasites within the population; and (e) recommendations for achieving the policy objective of Section 4900.

Section 4902 provides that the Commission (a) may adopt all regulations pertaining to biologically sound management of Nelson bighorn sheep (*O. c. nelsoni*), including sport hunting of mature Nelson bighorn rams; (b) may not authorize permits in a single year within a single management unit in excess of the Department's annual estimate of the population in that management unit; (c) may determine the fee for a tag to take a Nelson bighorn ram, but restricts that amount to five hundred dollars; (d) shall annually direct the department to authorize not more than three of the tags available for issuance that year to take Nelson bighorn rams for the purpose of raising funds for programs and projects to benefit Nelson bighorn sheep, that those tags may be sold to residents or nonresidents for fund-raising purposes and shall not be subject to any fee limitation as described in Section 4902(c), specifies certain non-profit organization(s) as the seller(s) of not less than one of those tags if more than one fund-raising tag is authorized, restricts the number of fund-raising tags, if more than one, to no more than 15 percent of the total number of tags authorized to hunt Nelson bighorn rams in any given year, and mandates that all successful applicants complete a hunter familiarization and orientation conducted by the Department prior to hunting.

Section 4903 states that revenue from the sale of bighorn sheep tags for hunting Nelson bighorn sheep rams shall be deposited into the Big Game Management Account established in Section 3953 and, upon appropriation, shall be made available for programs and projects to benefit bighorn sheep and other big game as defined in that section.

CHAPTER 3. POTENTIAL FOR SIGNIFICANT EFFECTS

Hunting of bighorn sheep will result in the deaths of individual animals. The removal of individual male animals from only 10 populations (Marble Mountains, Old Dad Peak/Kelso Mountains, Clark/Kingston Mountains, Orocopia Mountains, San Gorgonio Wilderness, Sheep Hole Mountains, White Mountains, South Bristol Mountains, Cady Mountains, and Newberry, Rodman and Ord Mountains) is not expected to significantly reduce herd size, or to affect the reproductive base of the population. The proposed action (modification of hunting tag ranges in three existing hunt zones, the addition of one hunt zone, and reallocation of one fund-raising tag) and adjusting tag quotas within previously analyzed tag ranges will result in maintaining these herds at or above approved management plan objectives and will maintain the ratio of male to female bighorn sheep at levels adequate to insure reproduction.

The approximately 60 herds of Nelson bighorn sheep in California occur from Mono County in the north, to the Mexican border in the south (Torres et al. 1996, Abella et al 2011). These populations are widely distributed, primarily throughout the southeastern part of the State and in the Sierra Nevada. Nelson bighorn sheep populations currently being considered in the proposed action, number about 4,000 and occur in Mono, Inyo, San Bernardino, Riverside, Ventura, Imperial, and Los Angeles counties. Ten hunting zones for Nelson bighorn sheep have been identified and cover only a portion of the entire range of Nelson bighorn sheep. Therefore, entire portions of the range and population will not be influenced by that activity.

Assuming the maximum number of tags is issued and all holders of bighorn sheep tags are successful, a maximum of 42 mature Nelson bighorn rams could be removed in 2019 from the statewide estimated population of 4,000 Nelson bighorn sheep. This short-term reduction of one percent of the total statewide population of Nelson bighorn sheep is well within the ability of the statewide population to maintain or increase in size over the long-term. The ability of bighorn sheep populations to experience a given level of hunting mortality without decreasing in health or vitality is described by Savidge and Ziesenis (1980) as sustained-yield management. It is reasonable that a removal of less than one percent of the statewide population is compatible with the long-term conservation of the subspecies. Thus, the removal of up to 42 mature male Nelson bighorn sheep is not expected to have a measurable impact on regional or statewide populations.

Pursuant to Section 4902, FGC, the number of tags allocated will not exceed more than 15 percent of the mature rams estimated in any management unit. Depending on the management unit, assessment of aerial or ground survey data will ensure that harvest will not exceed 15 percent of the mature rams in each management unit, as provided for by State law.

Before taking action regarding this proposal, the Commission will consider Nelson bighorn sheep populations, social structure, genetics, habitat, food supplies, the welfare of individual animals, impacts to other wildlife and plant species, impacts to recreational opportunities, public safety, the potential for cumulative impacts, and other pertinent facts and testimony. Although not a resource category where CEQA requires analysis, for informational value the Commission has also analyzed the potential for effects on economics from the proposed project. Each of these areas is discussed in more detail below.

THE SPECIES

Population

Under the proposed hunting programs, it is expected that a segment of the mortality previously identified as "natural" mortality will be shifted to hunting mortality. To a degree, hunting mortality will be substituted for, rather than added to, natural mortality. This follows the concept of compensatory mortality as described by Peek (1986) who noted that, "If hunting is a compensatory form of mortality then populations may be presumed to fluctuate in response to other factors, and stocks are little affected by exploitation. However, if hunting is additive to other forms of mortality then it serves as a depressant."

According to the concept of compensatory mortality, the production and survival of young animals within each population are ultimately expected to replace the animals removed by hunting. At the low level of proposed harvest, when combined with differential use of habitats by males and females during the birthing season (Bleich et al. 1997), influences of compensatory mortality are not expected to be measurable. Ongoing long-term demographic research on bighorn sheep populations has identified the primary factors influencing the abundance of those specialized herbivores. Given

the importance and significant variation in annual precipitation in these desert ecosystems, and the associated variation in diet quality, density-dependent mechanisms are difficult to observe (Wehausen 1992), but increased recruitment of young should compensate for increased rates of death resulting from harvest.

Since the hunting of Nelson bighorn sheep will occur, at most, in only ten of the State's approximately 60 populations of bighorn sheep under the alternatives considered, the removal of individual animals is not expected to have a significant effect on the statewide population of bighorn sheep. The existing populations of bighorn sheep in California are geographically separated and widely distributed, yet capable of moving among and between mountain ranges (Bleich et al. 1996). Therefore, the proposed action of providing opportunities to harvest up to 6 mature male Nelson bighorn sheep in the Newberry, Rodman and Ord Mountains, where a minimum of 62 mature males are estimated to occur, and an increase of 23 tags to the total potential statewide harvest, for a maximum of up to 42 mature Nelson bighorn rams from an estimated population of 4,000 total Nelson bighorn sheep will not have a significant adverse impact on any specific population to be hunted or on the statewide population of bighorn sheep.

The Department is committed to long-term demographic investigations of bighorn sheep populations. This research is particularly important in management units for which individual bighorn sheep are removed for translocation or harvest. To facilitate this research, animals have been telemetered and monitored in each proposed hunt zone.

The Department annually conducts fall/winter aerial surveys to count bighorn sheep within the majority of the management units being considered in this assessment, and ground counts are conducted during summer in the White Mountains Management Unit (Appendix 5). These surveys result in minimum population estimates, because many animals are missed during such surveys. Several published articles (Caughley 1974, Samuel et al. 1987, Graham and Bell 1989, Bodie et al. 1995, Bleich et al. 2001, Bernatas and Nelson 2004) have demonstrated that significant portions of populations being surveyed using aerial census techniques are not observed because of "visibility bias".

In some of the proposed hunt zones, aerial survey data are supplemented with independent ground surveys to record numbers of marked and unmarked sheep, which

are used to generate additional information on population size. This synthesis of data has made it possible to accurately assess the changes in bighorn sheep numbers, ratios of males to females or young to females, and to monitor the impacts of hunting and relocation (Wehausen 1992). Additionally, these aerial and ground survey results are used to determine tag allocations, and to ensure the proposed harvest does not exceed 15 percent of the mature rams in any of the respective management units.

Tag allocations have historically been determined by computing 15 percent of the mature rams observed during the annual surveys. These data are used to modify the range of tags to be allocated to ensure no more than 15 percent of the minimum number of mature males known to be present are harvested. The results of such surveys represent the minimum number of bighorn sheep, including mature males, present in a given population, and result in under-estimates of the true population of males and the total population. This procedure will continue to be used to generally assign tag allocations.

Independent estimates of population size and demographic parameters of bighorn sheep populations are derived using a combination of aerial census and ground observations of marked and unmarked animals in the hunt zones, and intensive ground surveys are conducted in the White Mountains. Wehausen (1990) and Jaeger et al. (1992) refer to this method as Multiple Direct Sampling (MDS). This method estimates population parameters from cumulative (or repeated) surveys that record the number of marked and unmarked animals observed, and assumes binomial sampling probabilities with replacement (Wehausen 1992).

Social Structure

Bighorn sheep demonstrate pronounced sexual segregation (rams and ewes separate) during the majority of the year (Bleich et al. 1997). During periods of segregation, competition between the sexes for food and water is limited or nonexistent. In order for density-dependent responses to occur, a reduction in competition between males and females and the offspring of those females must occur if the population size is limited by the habitat. The removal of so few rams, that likely do not compete with females and young to any appreciable extent, is unlikely to result in substantial increases in recruitment of young animals into any population. Nevertheless, enhanced body condition among males, decreased consumption of available resources by bighorn

sheep throughout the management unit, and decreased energetic costs resulting from fewer potential interactions among mature males, would be among the compensatory responses expected to occur as a result of the removal of less than 15 percent of mature Nelson bighorn rams from any particular hunt zone, as specified by State law.

The proposed action has the potential to increase the current hunter harvest by one ram each in the Marble and Clipper Mountains, and White Mountains, and by two rams in the Clark and Kingston Range, as well as establish a new hunt zone in the Newberry, Rodman, and Ord Mountains with up to six tags (up to 10 additional tags in four hunt zones). The additional harvest in the existing zones and new harvest on a previously unhunted population may alter the ratio of males to females in each of those zones. It is unlikely, however, that the proposed action will affect the survivorship of young in those populations, given that males and females live separately for the majority of the year. Moreover, removal of 55 bighorn sheep from the Marble Mountains for translocation during 1983-85 did not result in measurable responses in recruitment rates (Wehausen 1988). Thus, it is unlikely that the removal of a small number of males from the proposed hunt zones will result in a detectable increase in recruitment rates of young.

Genetics

Apollonio et al. (1989) reported that the removal of the majority of successfully breeding males from a population of lek-breeding fallow deer (*Dama dama*) resulted in a decrease of the overall productivity of the lek. Byers and Kitchen (1988) reported that in pronghorn (*Antilocapra americana*), the deaths of all mature males during a severe winter storm was followed by a mating system change from territoriality to harem defense, apparently because no males were sufficiently dominant to exclude other males from a territory. Speculation regarding the removal of large, old males of bighorn sheep, a species in which males form a tending bond with estrous females, thus warrants some consideration (Festa-Bianchet 1989).

It has been hypothesized that harvesting older males may remove the “best genes” from populations of bighorn sheep subject to “trophy hunting”. Fitzsimmons et al. (1995) reported that horn growth was higher males with greater genetic diversity, or heterozygosity, than less heterozygous rams for the 6th, 7th, and 8th years of life, and that by the end of the 8th year males exhibiting the greatest heterozygosity had higher horn volumes than males exhibiting lower heterozygosity.

The unregulated harvest of male bighorn sheep from a small, isolated population of Rocky Mountain bighorn sheep reportedly resulted in significant declines in body size and horn size (Coltman et al. 2003). Moreover, severe rates of selective harvesting (that are unlikely to be implemented by management agencies) potentially elicit an undesired evolutionary response when the targeted trait is heritable, as are size of horns or antlers (Hartl et al. 1991, 1995; Williams et al. 1994, Lukefar and Jacobson 1998, Kruuk et al. 2002). Nevertheless, the only example demonstrating the negative effects of selective harvest of ungulates in North America is that of Coltman et al. (2003), who investigated this phenomenon at Ram Mountain, Alberta, Canada. That population of Rocky Mountain bighorn sheep was small and isolated, but harvest was regulated only by a 4/5 curl regulation, and hunter opportunity essentially was unlimited. As a result, nearly every male was harvested upon attaining legal size, thereby allowing males with slow-growing horns to reach older age classes and do a disproportionate amount of the breeding. As a result, Coltman et al. (2003) concluded that the harvest rate in their study population resulted in selection against the fastest growing males before they reached their reproductive peak, and thereby reduced their genetic contribution to the population. Conversely, Coltman (2008) recognized that the selective effect reported by Coltman et al. (2003) may have been overestimated because it was not possible to account for the confounding effects of changes in population density during their study, a phenomenon that affected nutrient availability among animals in that population. Garel et al. (2007) concluded that selective harvest in a bottlenecked and genetically mixed population of mouflon (*Ovis* spp.) reduced the reproductive contribution of males that possessed a horn conformation desirable to hunters, which ultimately resulted in a selective advantage for smaller-horned males in that population. Neither of the situations described by Coltman et al. (2003) or Garel et al. (2007) are applicable to the harvest of bighorn sheep in California because of the very limited (less than 15 percent) potential harvest of mature males resulting from carefully regulated hunting opportunities.

Despite these observations, selection of large males by hunters may facilitate copulations by younger, smaller-horned males that may not encounter breeding opportunities in the presence of larger males (Hogg 1984). Resultant breeding by subdominant, smaller-horned males has the potential to increase the ratio of effective population size to census population size and, thereby, the potential to increase total genetic diversity within some populations (Singer and Zeigenfuss 2002). The effect of

an increase in the ratio of effective population size to census population size would, thus, offset the potential effects of the removal of some dominant males.

The consequences of declines in genetic diversity have also been questioned with respect to their demographic influences. Nevertheless, bighorn sheep that have been severely impacted by population bottlenecks and have resultant low genetic diversity appear not to be impacting the potential of those populations to recover in size (Wehausen and Ramey 2004). In contrast to the essentially unlimited harvest rates described by Coltman et al. (2003), harvest proposals considered in this document are extremely restricted, and remove but a very small proportion (less than 15 percent) of the minimum number of mature males from any single population, and less than 1 percent of the statewide population as a whole. As a result, the limited harvests proposed by the Department will not result in the small population sizes described by Wehausen and Ramey (2004).

Geist (1971) suggested that, if mortality of older males was related to rutting activity, younger males should be expected to suffer greater mortality if allowed to participate in the rut because of the absence of older males. Indeed, Heimer (1980), Heimer et al. (1984), and Heimer and Watson (1986) suggested that the removal of older and larger males by hunters would result in lowered survival of young males. Moreover, Heimer et al. (1984) reported that natural survival of Dall's sheep (*Ovis dalli*) males aged four to eight years was lower in areas with greater hunting pressure and a less restrictive definition of legal males.

In a specific test of Heimer's predictions, Murphy et al. (1990) reported no support for the hypothesis that reducing the number of older males had an adverse effect on the survival rate of young males. Similarly, other studies of *Ovis spp*. (Stewart 1980, Hoefs and Barichello 1984) have failed to demonstrate evidence of depressed survival of young rams in heavily hunted populations. The strongest support for the hypothesis is Heimer et al.'s (1984) study of the high rate of disappearance of young rams that had been trapped and marked, and were part of a hunted population. Murphy et al. (1990) concluded, however, that the disappearance of those young rams could be explained by dispersal and reduced sightability, rather than by reduced survivorship. Males tend to move over larger areas than do females, and their absence in areas they occupied as lambs does not mean they died. Further, Whitten (2001) concluded that sheep harvest trends were driven largely by weather patterns that affected sheep productivity, survival,

and abundance, rather than by horn curl regulations. In populations of Rocky Mountain bighorn sheep and desert bighorn sheep in which removal rates were carefully regulated and very low, Singer and Zeigenfuss (2002) concluded that young rams did not expend greater energy than young rams in non-hunted populations. Those authors concluded that there was no detectable effect on survivorship of those young rams and that harvesting of mature males did not lower survivorship of young males.

In the ten populations under consideration in the project, low harvest rates proposed should not disrupt the age structure and, hence, the social structure of these populations. An analysis of the hunter harvest indicates that the average age of all rams taken through the 2016/2017 hunting season was approximately 7 years. This mean age is lower than the life expectancy of a desert bighorn sheep, suggesting that harvests are not particularly concentrated on the oldest or largest males; hence, selective removal of the fastest growing males is an unlikely consequence of the limited opportunities being proposed.

The extremely conservative harvest rates in populations dominated by mature males have likely precluded any shift in the age structures or genetic diversity of these populations. An increase of up to 23 tags from current levels of hunting is not anticipated to have any impact on the age structure of the populations. Even with the combined removal of up to 42 mature Nelson bighorn sheep rams from ten proposed hunt zones, and with a maximum potential of 7 in any single zone, no changes in the age structure of the populations are anticipated, nor are any other adverse effects.

Habitat

As proposed by the project, the removal of up to 42 rams will slightly reduce the total number of bighorn sheep in each of the hunt zones, as well as the statewide population, until the birth of young the following spring. Under the proposed regulations, the maximum number of bighorn sheep that could be removed from any single zone is seven (the Open Zone fund-raising tag may potentially remove a ram from this zone), and that take would be limited to the Newberry, Rodman and Ord Mountains. The maximum number of mature male Nelson bighorn sheep that could be removed from any other zone ranges from three to six, and would only reflect an increase of two to four rams above current levels of hunting. Those rates of harvest could yield slight improvement in habitat conditions, particularly in areas of those hunt zones that are

utilized primarily by adult males. It is unlikely, however, that any substantial improvement in habitat conditions will result, nor that any increase in recruitment rate, will be realized. The maximum number of mature Nelson bighorn rams that would be removed during the 2019 hunting season would be 42. The proposed removal rate and the distribution of animals to be removed among 10 separate hunt zones is expected to be too low to result in any measurable change in habitat conditions.

Wehausen et al. (1987b) demonstrated a strong relationship between precipitation and recruitment rates in a Sonoran Desert bighorn sheep population. Similarly, Monson (1960) noted the relationship between precipitation and bighorn sheep populations. Beatley (1974) emphasized the relationship between precipitation and phenological events in Mojave Desert ecosystems, and Wehausen (1988, 1990) noted the apparent relationship between high recruitment in the Marble Mountains in the late 1970s and early 1980s and levels of precipitation. Thus, it is likely that timing and amount of precipitation, rather than population levels of bighorn sheep, are the primary factors determining habitat conditions in the proposed hunt zones.

A maximum of 42 hunters, their guides, and selected individuals will participate in the bighorn sheep hunt. Given the low densities of human use, any habitat loss and degradation attributable to the proposed project would be negligible. Therefore, the cumulative environmental impact of habitat loss and the proposed project will not be significant

OTHER WILDLIFE AND PLANT SPECIES

The results of the Department's previous determination that no significant impacts would be incurred by other wildlife or plant species as a result of bighorn sheep hunting, as published in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) are hereby incorporated by reference. Several plant and wildlife species listed as threatened or endangered can be found within the proposed project area. Because these areas are open year-round for public uses not limited to hiking, horseback riding, camping, hunting, photography, and bird watching, the low number of bighorn sheep hunters resulting from the proposed project is unlikely cause impacts to sensitive plant and wildlife species.

RECREATIONAL OPPORTUNITIES

Hunting Opportunities

The proposed action would authorize up to 23 additional tags, for a maximum of 42 opportunities for hunters to participate in this unique outdoor experience. This will be the 33rd such hunt in as many years. The demand for bighorn sheep hunting opportunities in California, and worldwide, is extremely high, as described in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b), and hereby incorporated by reference.

In 2018, all applicants for bighorn sheep tags paid a $7.50 nonrefundable application fee to enter a drawing, and they must possess a California hunting license. Additionally, a total of approximately $ 8.4 million has been received through the auction of fundraising tags from 1987 to 2018. The proposed action will positively impact the hunting public of the State by providing hunting opportunities consistent with sections 203.1 and 4902, FGC, and the State's wildlife conservation policy in Section 1801 of the FGC, and will provide funds specifically for conservation and restoration of bighorn sheep in California, consistent with sections 4902 and 4903 of the FGC.

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, there will be overlap of upland game (quail and chukar), rabbit, predator, and deer hunting seasons in two additional hunt areas for a portion of the year. However, due to the low numbers of sheep hunters in each area, coupled with the large areas open to hunting, it is unlikely that sheep hunters will affect the success or quality of the experience for hunters of other species of wildlife.

Because it would increase the hunting opportunity, the proposed project is not anticipated to have a significant impact on recreational hunting opportunities.

Nonhunting Opportunities

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005) and incorporated herein by reference, the non-

hunting users of the bighorn sheep resource (viewing, nature study, research, photography) are not expected to be significantly impacted by the hunting of mature bighorn sheep rams, including Nelson Bighorn Sheep (in the peninsular ranges, transverse ranges, the Mojave Desert, and the Sonoran Desert) and Sierra Nevada bighorn sheep, from a statewide population that now numbers approximately 5,400 animals. The proposed action is not expected to impair the ability of non-consumptive users to enjoy the outdoors, the bighorn sheep resource or its habitat because the non-hunting user will have opportunities to view bighorn sheep in unhunted situations indefinitely. No populations of bighorn sheep occurring in the other mountain ranges will be exposed to sheep hunting as a result of this project and, as a result, opportunities for non-hunting uses of those populations will not be affected.

ECONOMICS

Under the proposed alternative, hunters from outside the local areas would continue to visit the region and purchase goods and services from local merchants. This additional spending will generate retail sales, income, and possibly employment in businesses such as motels, restaurants, and retail stores. Spending effects would be minor, because of the small number of tags sold. Any potential effects would likely be distributed among those communities located nearest to the sheep hunt areas, including Barstow, Baker, Blythe, Cadiz, Ludlow, Indio, Morongo Valley, Desert Center, Needles, Twenty-Nine Palms, and Amboy, in Riverside, San Bernardino, Inyo, and Imperial counties. These economic effects are likely to be an insignificant positive effect on the communities. More detail is available in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b).

PUBLIC SAFETY

Since 1987, the Department has not received reports of bighorn sheep hunting related casualties in California, as discussed in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference. As with any outdoor activity, there is always risk of injury or death, however the probability of being injured while bighorn sheep hunting is extremely low. This good safety record is due, in part, to the requirement that all hunters must successfully pass a hunter safety education course prior to receiving a license. Since completion of the 2005 Environmental Document for Bighorn Sheep Hunting (California Department of

Fish and Game 2005b) the Department has not received any reports of sheep hunting related casualties in California. The Commission does not anticipate any significant adverse impacts to public safety with the proposed project

SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The proposed project allows an increase of up to 23 bighorn sheep hunters, bringing the potential harvest to a total of 42 animals distributed across 10 hunt zones, assuming the maximum number of tags is allocated. As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, this short-term use could enhance long-term productivity by reducing competition for forage. However, given the extremely limited harvest, any reduction in intraspecific competition would be negligible and likely undetectable.

If the proposed project were delayed for any reason, no significant long-term impact on the population would be expected. However, this delay would eliminate the proposed allocation of additional hunting opportunities as per the Department’s bighorn sheep management program and would not address the high demand for more recreational hunting opportunities involving bighorn sheep or be consistent with State policy regarding bighorn sheep management, or with project objectives.

The proposed increase of 23 tags, for a maximum of 42 mature Nelson bighorn sheep rams removed by hunting will not have a significant long-term adverse impact on either the specific populations to be hunted or on the statewide population of bighorn sheep.

CHAPTER 4. CUMULATIVE IMPACTS

The Commission could consider and may approve additional hunts in the future. The Commission has concluded that there will be no significant adverse cumulative effects on the State's Nelson bighorn sheep resource if the proposed project is implemented. The statutorily mandated regulation process involves review at least once every three years, Proposed recommendations for regulatory changes would be presented by the Department to the Commission along with supporting data and analysis prior to consideration of any future hunt. As with potential changes to hunting regulations for

deer, elk, and pronghorn antelope, the Commission receives recommendations regarding mammal hunting regulations from Commission members, its staff, the Department, other public agencies, and the public. More detail on this analysis is contained in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference.

HABITAT LOSS OR DEGRADATION

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the proposed project, in combination with current bighorn hunts and other factors, is not likely to cause habitat loss and degradation. Changes in habitat are not expected to be significant in the project areas in the foreseeable future, as many of the designated hunt zones and part of the proposed new hunt zone are within wilderness areas. Areas designated as wilderness have their habitat protected in perpetuity, or until Congress determines other values exceed those associated with wilderness classification

DROUGHT

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, drought can have an impact on local populations of bighorn sheep, and droughts are a natural occurrence faced by bighorn sheep throughout their evolutionary history. Further, drought conditions are generally localized, both spatially and temporally. The removal of an additional 23 mature Nelson bighorn sheep rams, for a maximum of 42 rams, would, in fact, decrease competition among males for available forage within hunt zones, but the effects of such a reduction in competition would be difficult to detect. The possibility of drought impairing the bighorn sheep population on a statewide basis is unlikely. It is anticipated that the statewide population will remain in a healthy, viable condition, even though dynamic weather patterns may affect some populations in some years. Therefore, the Commission does not anticipate any significant adverse cumulative impacts resulting from drought.

WILDFIRES

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the sparse vegetation and lack of fuel in bighorn sheep habitat makes it unlikely that wildfires have the potential to adversely affect bighorn sheep in the majority of the hunt zones. However, the San Gorgonio Wilderness occurs in an area of potential wildfires. Most research has shown burning, especially prescribed burning, to be favorable to bighorn sheep and deer. These fires maintain movement corridors, escape terrain, and provide new herbaceous vegetation, which is higher in nutrition than decadent vegetation and, ultimately, enhance nutrient availability to animals foraging in newly burned areas. Therefore, the Commission does not anticipate any significant adverse cumulative impacts resulting from wildfires.

DISEASE, ROAD KILLS AND OTHER MORTALITY

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, no data available indicate road kills, disease, predation, or natural mortality factors will act as additive impacts which, along with the mortalities associated with the limited hunting program, will have significant adverse cumulative impacts on local, regional or statewide bighorn sheep populations. The Commission does not anticipate any significant cumulative impacts resulting from disease in combination with the proposed hunting project.

ILLEGAL HARVEST

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, illegal take does not appear to be a significant factor affecting the population. The Department has documented annually approximately one to three cases of bighorn sheep being killed illegally statewide. The verified illegal take involves an extremely low proportion of the State's approximately 5,400 bighorn sheep and is widely distributed. Illegal take does not appear to be a significant factor affecting the population and, even with the potential harvest of up to 42 bighorn sheep statewide, the cumulative impacts of illegal harvest are not expected to be significant. Since the bighorn sheep outside the hunt zones are

either fully protected or State-listed species, detecting and preventing illegal take is a high priority for the Department.

DEPREDATION

The Department does not have the authority to issue kill permits for bighorn sheep causing property damage (Section 4181, Fish and Game Code). As a result, depredation does not affect the population of bighorn sheep and no potential exists for any cumulative impact with the proposed project

THE INDIVIDUAL ANIMAL

The proposed project will result in the deaths of individual bighorn sheep, and wounding losses could occur as a result of implementation of the proposed project. However, the Department is aware of only one animal having been lost after being wounded in 32 hunting seasons. Thus, the rate of wounding is extremely low, and the cumulative impacts of the potential harvest increase of 23 rams statewide, for a maximum of 42 mature Nelson bighorn sheep statewide, combined with the exceedingly low rate of wounding, would not result in an impact that could be considered to significantly impact the population of bighorn sheep inhabiting any hunt zone, or the state of California as a whole. For more discussion of wounding losses, see the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference.

GLOBAL CLIMATE CHANGE

Climate change caused by increasing atmospheric concentrations of greenhouse gases are expected to result in marked changes in climate throughout the world (deVos and McKinney 2005). Although many wildlife habitats in North America have become progressively warmer and drier in the last 12,000 years (Lane et al. 1994, Ball et al. 1998), the greatest rate of change has occurred during the last 150 years (Fredrickson et al. 1998). Predicted changes due to continued warming include increased frequency and severity of wildfires, increased frequency of extreme weather events, regional variation in precipitation, northward and upward shifts in vegetative communities, and modifications to existing biotic communities (Bachelet et al. 2001, McCarty 2001, Walther et al. 2002). These changes are expected to affect abundance, distribution, and

structure of vegetative and animal communities (Kapelle et al. 1999).

Local and specific regional changes in climate and associated changes in vegetative communities will be the determining factors regarding the distribution and abundance of bighorn sheep in California and elsewhere. Although research specific to bighorn sheep responses to climate change is limited, available information indicates those populations inhabiting the hottest, low-lying mountain ranges will be among the first to be impacted (Epps et al. 2004), but those populations inhabiting the highest and most botanically diverse desert ranges may be less affected, and serve as refugia for the species (Epps et al. 2006). Moreover, some areas occupied by bighorn sheep may experience increases in the quality of habitat (Epps et al. 2006).

Populations of bighorn sheep in California are vulnerable to any decrease in habitat quality as mediated by climate change (Epps et al. 2006, Stewart et al. 2016) For example, higher spring and summer temperatures will result in reduced diet quality for bighorn sheep (Epps 2004), and extended droughts and drying of water sources may produce die-offs of adult animals (Allen 1980). Among bighorn sheep inhabiting desert environments, diet quality or forage availability influence body condition, which affects reproduction and recruitment rates (Wehausen 2005) and, ultimately, population size. Thus, future changes in climate that result in warmer temperatures or greater aridity have the potential to result in fewer bighorn sheep in desert ecosystems (Epps et al. 2006). Nevertheless, habitat conditions in some areas currently occupied by bighorn sheep, for example the San Gabriel Mountains and other transverse ranges of California, may experience changes that will be of benefit to bighorn sheep (Epps et al. 2006) as a result of lower densities of vegetation (Epps et al. 2006). Thus, available information indicates global climate change portends both adverse and beneficial effects to bighorn sheep habitat and, ultimately, bighorn sheep populations.

Bighorn sheep hunting in California is regulated by the California Fish and Game Commission. Hunting seasons and tag quotas are proposed to the Commission for adoption on an annual basis. These seasons and quotas are based on annual population estimates as dictated by the California Legislature (Fish and Game Code Section 4902) and are adjusted each year as needed. Although the impacts of climate change on bighorn sheep in California could be positive in some instances, they most certainly will be negative in others. Nevertheless, the Department and the Commission have the ability to quickly respond to population fluctuations by increasing or decreasing

hunter opportunity in accordance with current and future management objectives for this species. Reducing one mortality factor, for example sport hunting, will not alone mitigate for impacts associated with global climate change. The ability to manage and provide adequate amounts of resources, both nutritional and otherwise, will be the factor that ultimately dictates persistence of populations. Therefore, the Commission does not anticipate that global climate change will have a significant cumulative impact on the bighorn sheep populations.

CHAPTER 5. ALTERNATIVES TO THE PROJECT

The Commission considered two alternatives to the proposed project, which would modify tag quotas, create one additional hunt zone for bighorn sheep, and reallocate a fund-raising tag.

ALTERNATIVE 1 – NO CHANGE

The "no-change" alternative would continue to provide hunting opportunities for mature Nelson bighorn rams in the nine hunt zones that currently are open to that activity. The range of tags available to hunt bighorn sheep in each of those zones would remain the same, and would not be subject to adjustment as determined by the Department's annual population estimates as specified in Section 4901 of the Fish and Game Code. One fund-raising tag, currently designated in the Kelso and Old Dad Peak Hunt Zone, would remain in place, and not used for fund-raising purposes given the disease impacts that herd unit has sustained. In short, there would be no change from the 2018 bighorn sheep hunting regulations. Because there would be no change in existing conditions or current levels of hunting activity and bighorn sheep harvest, the no-project alternative would not lead to any potential significant impacts on the environment.

ALTERNATIVE 2 – INCREASED HARVEST

The ranges of potential hunting tags available for each zone is intentionally conservative. Tag allocation is based on the number of mature rams known to exist in each zone, or on the number of mature rams estimated to be present following application of an extremely conservative correction factor (n/0.80) that assumes aerial surveys account for 80 percent of the animals present. However, Wehausen and Bleich (2007) reported aerial surveys in an ecologically similar mountain range produced

observations of less than 50 percent of the total number estimated compared to mark-resight methods.

To increase the tag range by 50 percent in the existing nine zones beyond the range of tags proposed by the Department (Appendix 2 and Table 2) could result in a violation of state law if the end result exceeded more than 15 percent of the total number of mature Nelson bighorn sheep rams known or estimated to be present in any single hunt zone. Increasing tags beyond current levels needs to be carefully considered for consistency with statutory requirements. Under the ”increased harvest” alternative, it is possible that support for bighorn sheep management programs among interested conservation groups and hunters could decline, because conservation has been at the forefront of issues affecting bighorn sheep. An increased rate of harvest would not likely be supported among bighorn sheep advocacy groups.

Because neither the proposed project nor the alternatives are anticipated to cause any significant impacts on the environment, there is no environmentally superior alternative. However, the proposed project most closely meets the objectives of Section 1801 of the FGC.

LITERATURE CITED

NOTE: these documents are generally available through university libraries. Documents prepared by governmental agencies can be obtained through those agencies.

Abella, R. K., V. C. Bleich, R. A. Botta, B. J. Gonzales, T. R. Stephenson, S. G. Torres, J. D. Wehausen. 2011. Desert Bighorn Council Transactions 51:54-68

Allen, R. W. 1980. Natural mortality and debility. *in* G. Monson and L. Sumner, editors. The desert bighorn: its life history, ecology, and management. University of Arizona Press, Tucson, Arizona, USA.

Apollonio, M., M. Festa-Bianchet and F. Mari. 1989. Effects of removal of successful males in a fallow deer lek. Ethology, 83: 320-325.

Bachelet, D., R. P. Neilson, J. M. Lenihan, and R. J. Drapek. 2001. Climate change effects on vegetation and carbon budget in the United States. Ecosystems 4:164-185.

Bailey, J. A. 1980. Desert bighorn, competition, and zoogeography. Wildlife Society Bulletin 8:208-216.

Ball, R., D. D'Amours, K. Duncan, et al. 1998. North America. *in* R. T. Watson, M. C. Zinyowera, R. H. Moss, and D. J. Dokken, editors. The regional impacts of climate change: an assessment of vulnerability. Cambridge University Press, Cambridge, United Kingdom.

Beatley, J. C. 1974. Phenological events and their environmental triggers in Mojave Desert ecosystems. Ecology. 55:856-863.

Bernatas, S., and L. Nelson. 2004. Sightability model for California bighorn sheep in canyonlands using forward-looking infrared (FLIR). Wildlife Society Bulletin 32:638-647.

Bleich, V. C. 1983. Big game guzzlers and mountain sheep. Outdoor California 44(6):10.

Bleich, V. C. 1986. Early Breeding in Free-ranging Mountain Sheep. Southwest. Natur. 31:530-531.

Bleich, V. C. 1990. Affiliations of volunteers participating in California wildlife water development projects. Pages 187-192 in G. K. Tsukamoto and S. J. Stiver, editors. Wildlife water development. Nevada Department of Wildlife, Reno, USA.

Bleich, V. C. 2006. Mountain sheep in California: perspectives on the past, and prospects for the future. Biennial Symposium of the Northern Wild Sheep and Goat Council 15:1-13.

Bleich, V. C., L. J. Coombes, and G. W. Sudmeier. 1982. Volunteer participation in California wildlife habitat management projects. Desert Bighorn Council Transactions 26:56-58.

Bleich, V. C., J. D. Wehausen, R. R. Ramey II, and J. L. Rechel. 1996. Metapopulation theory and mountain sheep: implications for conservation. Pages 353-373 *in* D. R. McCullough, editor. Metapopulations and wildlife conservation. Island Press, Washington D.C., USA.

Bleich, V. C., R. T. Bowyer, and J. D. Wehausen. 1997. Sexual segregation in mountain sheep: resources or predation? Wildlife Monographs 134:1-50.

Bleich, V. C., C. S. Y. Chun, R. W. Anthes, T. E. Evans, and J. K. Fischer. 2001. Visibility bias and development of a sightability model for tule elk. Alces 37:315-327.

Bleich, V. C., A. M. Pauli, S. G. Torres. 2010. Bighorn Sheep Management Plan: Cady Mountains. California Department of Fish and Game. http://dfg.ca.gov/wildlife/hunting/sheep/dates.html

Bleich, V. C., S. G. Torres. 2010. Bighorn Sheep Management Plan: South Bristol Mountains. California Department of Fish and Game. http://dfg.ca.gov/wildlife/hunting/sheep/dates.html

Bodie, W. L., E. O. Garton, E. R. Taylor, M. McCoy. 1995. A sightability model for bighorn sheep in canyon habitats. Journal of Wildlife Management 59:832-840.

Bolton, H. E. 1930. Anza's California expeditions. Volume IV. Font's complete diary of the second Anza expedition. University of California Press, Berkeley, California, USA.

Buechner, H. K. 1960. The bighorn sheep in the United States, its past, present, and future. Wildlife Monographs 4:1-174.

Byers, J. A. and D. W. Kitchen. 1988. Mating system shift in a pronghorn population. Behav. Ecol. Sociobiol. 22:355-360.

California Department of Fish and Game. 1983. A plan for bighorn sheep. California Department of Fish and Game, Sacramento, California, USA.

California Department of Fish and Game. 2005a. The status of rare, threatened, and endangered plants and animals of California 2000-2005. California Department of Fish and Game, Sacramento, USA.

California Department of Fish and Game. 2005b. Environmental document for bighorn sheep hunting. California Department of Fish and Game, Sacramento, California, USA. State Clearinghouse Number 2005012078.

Caughley, G. 1974. Bias in aerial survey. Journal of Wildlife Management 38:921-933.

Coltman, D. W. 2008. Molecular ecological approached to studying the evolutionary impacts of selective harvesting in wildlife. Molecular Ecology 16:221-235.

Coltman, D. W., P. O'Donoghue, J. T. Jorgenson, J. T. Hogg, C. Strobeck, and M. Festa-Bianchet. 2003. Undesirable evolutionary consequences of trophy hunting. Nature 426:655–658.

Cowan, I. McT. 1940. Distribution and variation in the native sheep of North America. American Midland Naturalist 24:505-580.

deVos, J. C., Jr., and T. McKinney. 2005. Recent trends in North American mountain lion populations: a hypothesis. Pages 297-307 in C. van Riper III and D. J. Mattson, editors. The Colorado Plateau II. University of Arizona Press, Tucson, USA.

Epps, C. W. 2004. Population processes in a changing climate: extinction, dispersal, and metapopulation dynamics of desert bighorn sheep in California. Unpublished Ph.D. dissertation, University of California, Berkeley, California, USA.

Epps, C. W., V. C. Bleich, J. D. Wehausen, and S. G. Torres. 2003. Status of bighorn sheep in California. Desert Bighorn Council Transactions 47:20-35.

Epps, C. W., D. R. McCullough, J. D. Wehausen, V. C. Bleich, and J. L. Rechel. 2004. Effects of climate change on population persistence of desert-dwelling mountain sheep in California. Conservation Biology 18:102-113.

Epps, C. W., P. J. Persboll, J. D. Wehausen, G. K. Roderick, and D. R. McCullough. 2006. Elevation and connectivity define genetic refugia for mountain sheep as climate warms. Molecular Ecology 15:4295-4302.

Festa-Bianchet, M. 1989. Survival of male bighorn sheep in southwestern Alberta. Journal of Wildlife Management, 53: 259-263.

Fitzsimmons, N. N., S. W. Buskirk, and M. H. Smith. 1995. Population history, genetic variability, and horn growth in bighorn sheep. Conservation Biology 9:314-323.

Foreyt, W. J., and D. A. Jessup. 1982. Fatal pneumonia of bighorn sheep following association with domestic sheep. Journal of Wildlife Diseases 18:163-168.

Fredrickson, E., K. M. Havstad, R. Estell, and P. Hyder. 1998. Perspectives on desertification: south-western United States. Journal of Arid Environments 39:191-207.

Garel, M., J. M. Cugnasse, D. Maillard, J.-M. Gaillard, A. J. M. Hewison, and D. Dubray. 2007. Selective harvesting and habitat loss produce long-term life history changes in a mouflon population. Ecological Applications 17:1607-1618.

Geist, V. 1970. Mountain sheep. University of Chicago Press, Chicago, Illinois, USA.

Graham, A., R. Bell. 1989. Investigating observer bias in aerial survey by simultaneous double-counts. Journal of Wildlife Management 53: 1009-1016.

Grinnell, J. 1912. The bighorn of the Sierra Nevada. University of California, Publications in Zoology 10:143-153.

Hartl, G. B., F. Klein, R. Willing, M. Apollonio, and G. Lang. 1995. Allozymes and the genetics of antler development in red deer (*Cervus elaphus*). Journal of Zoology 237:83-100.

Hartl, G. B., G. Lang, F. Klein, and R. Willing. 1991. Relationships between allozymes, heterozygosity and morphological characters in red deer (*Cervus elaphus*), and the influence of selective hunting on allele frequency distributions. Heredity 66:343-350.

Heimer, W. E. 1980. Can population quality be related to population density through nutrition? Proceedings of the Biennial Symposium of the Northern Wild Sheep and Goat Council 2:288-309.

Heimer, W. E., S. M. Watson, and T. C. Smith III. 1984. Excess ram mortality in a heavily hunted Dall sheep population. Proceedings of the Biennial Symposium of the Northern Wild Sheep and Goat Council 4:425-432.

Heimer, W. E., and S. M. Watson. 1986. Time and area specific variations in Dall sheep lamb production: an explanatory hypothesis. Proceedings of the Biennial Symposium of the Northern Wild Sheep and Goat Council 5:78-101

Hoefs, M., and N. Barichello. 1984. Comparison between a hunted and an unhunted Dall sheep population – a preliminary assessment of the impacts of hunting. Proceedings of the Biennial Symposium of the Northern Wild Sheep and Goat Council 4:433-466.

Hogg, J. T. 1984. Mating in bighorn sheep: multiple creative male strategies. Science 225:526–529.

Holl, S. A., and V. C. Bleich. 1983. San Gabriel mountain sheep: biological and management considerations. USDA Forest Service, San Bernardino National Forest, San Bernardino, California, USA.

Jaeger, J. R., J. D. Wehausen, and V. C. Bleich. 1992. Evaluation of time-lapse photography to estimate population parameters. Desert Bighorn Council Transactions 35:5-8.

Kapelle, M., M. M. I. Van Vuuren, and P. Baas. 1999. Effects of climate change on biodiversity: a review and identification of key research issues. Biodiversity and Conservation 8:1383-1397.

Kruuk, L. E. B., J. Slate, J. M. Pemberton, S. Brotherstone, F. Guinness, and T. Clutton-Brock. 2002. Antler size in red deer: heritability and selection but no evolution. Evolution 56:1683-1695.

Lane, L. J., M. H. Nichols, and H. B. Osborn. 1994. Time series analysis of global change data. Environmental Pollution 83:63-68.

Leach, H. R. 1974. At the crossroads: a report on California's endangered and rare fish and wildlife. California Department of Fish and Game, Sacramento, California, California, USA.

Lukefar, S. D., and H. A. Jacobson. 1998. Variance component analysis and heritability of antler traits in white-tailed deer. Journal of Wildlife Management 62:252-268.

McCarty, J. P. 2001. Ecological consequences of recent climate change. Conservation Biology 15:320-331.

Monson, G. 1960. Effects of climate on bighorn numbers. Desert Bighorn Council Transactions 4:12-14.

Peek, J. M. 1986. A review of wildlife management. Prentice-Hall, Englewood Cliffs, New Jersey, USA.

Samuel, M. D., E. O. Garton, M. W. Schlegel, and R. G. Carson. 1987. Visibility bias during aerial surveys of elk in northcentral Idaho. Journal of Wildlife Management 51:622-630.

Savidge, I. R., and J. S. Ziesenis. 1980. Sustained yield management. Pages 405-410 *in* S. D. Schemnitz, editor. Wildlife management techniques manual. The Wildlife Society, Washington, D.C., USA.

Singer, F. J., and L. C. Zeigenfuss. 2002. Influence of trophy hunting and horn size on mating behavior and survivorship of mountain sheep. Journal of Mammalogy 83:682-698.

Stewart J. A. E., J.H. Thorne, M. Gogol-Prokurat and S.D. Osborn. 2016. A climate change vulnerability assessment for twenty California mammal taxa, Information Center for the Environment, University of California, Davis, CA.

Stewart, S. T. 1980. Mortality patterns in a bighorn sheep population. Proceedings of the Biennial Symposium of the Northern Wild Sheep and Goat Council 2:313-331.

Tinker, B. 1978. Mexican wilderness and wildlife. University of Texas Press, Austin, Texas, USA.

Torres, S. G., V. C. Bleich, and J. D. Wehausen. 1994. Status of bighorn sheep in California, 1993. Desert Bighorn Council Transactions 38:17-28.

Torres, S. G., V. C. Bleich, and J. D. Wehausen. 1996. Status of bighorn sheep in California, 1995. Desert Bighorn Council Transactions 40:27-34.

Walther, G. R., E. Post, P. Convery, et al. 2002. Ecological response to recent climate change. Nature 416:389-395.

Weaver, R. A. 1972. California's bighorn management plan. Desert Bighorn Council Transactions 17:22-42.

Weaver, R. A. 1983. The status of bighorn sheep in California. Desert Bighorn Council Transactions 27:44-45.

Weaver, R. A., and R. K. Clark. 1988. Status of bighorn sheep in California, 1987. Desert Bighorn Council Transactions 32:20.

Wehausen, J. D. 1979. Sierra Nevada bighorn sheep: history and population ecology. Ph.D. Dissertation, University of Michigan, Ann Arbor, USA.

Wehausen, J. D. 1988. Cattle impacts on mountain sheep in the Mojave Desert: report II. Administrative Report. California Department of Fish and Game, Bishop, USA. Contract 85/86c - 1492.

Wehausen, J. D. 1990. Cattle impacts on mountain sheep in the Mojave Desert: report III. Interagency Agreement FG 7468-A1. California Department of Fish and Game, Sacramento, USA.

Wehausen, J.D. 1992. Demographic studies on mountain sheep in the Mojave Desert: report IV. Interagency agreement FG 1411. California Department of Fish and Game, Sacramento, USA.

Wehausen, J. D. 2005. Nutrient predictability, birthing seasons, and lamb recruitment for desert bighorn sheep. *in* J. Goerrissen and J. M. Andre, editors. Symposium Proceedings for the Sweeney Granite Mountains Desert Research Center 1978-2003: A Quarter Century of Research and Teaching. University of California Natural Reserve Program, Riverside, California, USA.

Wehausen, J. D., and V. C. Bleich. 2007. The effect of survey intensity on bighorn sheep helicopter counts. Desert Bighorn Council Transactions 49:23-29.

Wehausen, J. D., and R. R. Ramey II. 1993. A morphometric reevaluation of the peninsular bighorn subspecies. Desert Bighorn Council Transactions 37:1-10.

Wehausen, J. D., and R. R. Ramey II. 2000. Cranial morphometric and evolutionary relationships in the northern range of *Ovis canadensis*. Journal of Mammalogy 81:145-161.

Wehausen, J. D., and R. R. Ramey II. 2004. Microsatellite diversity in Sierra Nevada mountain sheep herds. Unpublished Contract Report, Sierra Nevada Bighorn Sheep Recovery Program, California Department of Fish and Game, Bishop, California.

Wehausen, J. D., V. C. Bleich, and R. A. Weaver. 1987a. Mountain sheep in California: a historical perspective on 108 years of full protection. Western Section of The Wildlife Society Transactions 23:65-74.

Wehausen, J. D., V. C. Bleich, B. Blong, and T. L. Russi. 1987b. Recruitment dynamics in a southern California mountain sheep population. Journal of Wildlife Management 51:86-98.

Wehausen, J. D., V. C. Bleich, and R. R. Ramey II. 2005. Correct nomenclature for Sierra Nevada bighorn sheep. California Fish and Game 91:216-218.

Williams, J. D., W. F. Krueger, and D. H. Harmel. 1994. Heritabilities for antler characteristics and body weight in yearling white-tailed deer. Heredity 73:78-83.

Appendix 1. Existing Regulatory Language for Bighorn Sheep Hunting with Proposed 2019 Changes

§362. Nelson Bighorn Sheep.

(a) Areas:

(1) Zone 1 - Marble/Clipper Mountains: That portion of San Bernardino County beginning at the intersection of Kelbaker Road and the National Trails Highway; north on Kelbaker Road to the junction with Interstate Highway 40; east on Interstate Highway 40 to the intersection with National Trails Highway; southwest on National Trails Highway to junction with Kelbaker Road.

(2) Zone 2 - Kelso Peak and Old Dad Mountains: That portion of San Bernardino County beginning at the intersection of Kelbaker Road and the Union Pacific Railroad in Kelso; southwest along the Union Pacific Railroad to intersection with unnamed road at Crucero; north on unnamed road to the merging with Mojave Road; northeast on Mojave Road to the junction with Zzyzx Road; north on Zzyzx Road to intersection with Interstate Highway 15; northeast on Interstate Highway 15 to the intersection with Cima Road; south on Cima Road to the intersection with the Union Pacific Railroad in Cima; southwest on the Union Pacific Railroad to the intersection with Kelbaker Road in Kelso.

(3) Zone 3 - Clark and Kingston Mountain Ranges: That portion of San Bernardino and Inyo counties beginning at the intersection of Interstate Highway 15 and California State Highway 127 in Baker; north on California State Highway 127 to the junction with Old Spanish Gentry Road at Tecopa; southeast on Old Spanish Gentry Road to the junction with Furnace Creek Road; southeast on Furnace Creek Road to the junction with Mesquite Valley Road; north on Mesquite Valley Road to Old Spanish Trail Highway; north and east on Old Spanish Trail Highway to California/Nevada state line; southeast on California/Nevada state line to the intersection with Interstate Highway 15; southwest on Interstate Highway 15 to the junction with California State Highway 127.

(4) Zone 4 - Orocopia Mountains: That portion of Riverside County beginning at the intersection of Interstate Highway 10 and Cottonwood Springs Road; east on Interstate Highway 10 to the junction with Red Cloud Mine Road; south on Red Cloud Mine Road to the junction with the Eagle Mountain Mining Railroad; southwest on the Eagle Mountain Mining Railroad to the junction with the Bradshaw Trail; southwest on the Bradshaw Trail to the Intersection with the Coachella Canal; west along the Coachella Canal to the junction with Box Canyon Road; northeast on Box Canyon Road to the junction with Cottonwood Springs Road; north on Cottonwood Springs Road to the intersection with Interstate Highway 10.

(5) Zone 5 - San Gorgonio Wilderness: That portion of Riverside and San Bernardino counties beginning at the intersection of Interstate Highway 10 and California State Highway 62, west on Interstate Highway 10 to the junction with California State Highway 30; north on California State Highway 30 to the junction with California State Highway 38; east and north on California State Highway 38 to the junction with Forest Service Route 1N01; east on Forest Service Route 1N01 to its joining with Pipes Road; east on Pipes Road to the junction with Pioneertown Road; southeast on Pioneertown Road to the junction with California State Highway 62; southwest on California State Highway 62 to the intersection with Interstate Highway 10.

(6) Zone 6 - Sheep Hole Mountains: That portion of San Bernardino County beginning at the junction of California State Highway 62 and Ironage Road; northwest on Ironage Road to the intersection with Amboy Road; north on Amboy Road to the intersection with National Trails Highway; east on National Trails Highway to the junction with Saltus Road; southeast on Saltus Road to the junction with unnamed road in Saltus that runs through Cadiz Valley; southeast on unnamed road to the intersection with California State Highway 62; west on California State Highway 62 to the junction with Ironage Road.

(7) Zone 7 - White Mountains: That portion of Mono County within a line beginning at U.S. Highway 6 and the Mono-Inyo county line; northward on Highway 6 to the California-Nevada State Line; southeasterly along the California-Nevada State Line to the Mono-Inyo County Line; westward along the Mono-Inyo County Line to the point of beginning.

(8) Zone 8 - South Bristol Mountains: That portion of San Bernardino County beginning at the junction of Kelbaker Road and the National Trails Highway; west on the National Trails Highway to the intersection with Interstate Highway 40; east on Interstate Highway 40 to the junction with Kelbaker Road; south on Kelbaker Road to the point of beginning.

(9) Zone 9 - Cady Mountains: That portion of San Bernardino County beginning at the junction of Interstate Highway 40 and Newberry Road; north on Newberry Road to intersection with Riverside Road; East on Riverside Road to junction with Harvard Road; north on Harvard Road to junction with Interstate Highway 15; northeast on Interstate Highway 15 to junction with Basin Road; south on Basin Road to intersection with Union Pacific Railroad; east on Union Pacific Railroad to intersection with Crucero Road; south on Crucero Road to intersection with Interstate Highway 40; west on Interstate Highway 40 to the point of beginning.

(10) Zone 10 – Newberry, Rodman and Ord Mountains: That portion of San Bernardino County beginning at the junction with Interstate 40 and Barstow Road; South on Barstow Road to the junction with Northside Road; East on Northside Road to the intersection with Camp Rock Road; Northeast on Camp Rock Road to the intersection with Powerline Road; East on Powerline Road and continue on Transmission Line Road to the

intersection with Interstate 40, West along Interstate 40, to the point of the beginning

(b) Seasons:
(1) Open Zone Fund-raising Tag: The holder of the fund-raising license tag issued pursuant to subsection 4902(d) of the Fish and Game Code may hunt:
(A) Zones 1 through 4, 6, 8 and 9: Beginning the first Saturday in November and extending through the first Sunday in February.
(B) Zone 5: Beginning the third Saturday in November and extending through the third Sunday in February.
(C) Zone 7: Beginning the first Saturday in August and extending through the last Sunday in September.
(2) Marble/Clipper/South Bristol Mountains Fund-raising Tag: The holder of the fund-raising license tag issued pursuant to subsection 4902(d) of the Fish and Game Code may hunt:
(A) Zones 1 and 8: Beginning the first Saturday in November and extending through the first Sunday in February.
(3) ~~Kelso Peak and Old Dad Mountains~~ Cady Mountains Fund-raising Tag: The holder of the fund-raising license tag issued pursuant to subsection 4902(d) of the Fish and Game Code may hunt:
(A) ~~Zone 2:~~ Zone 9: Beginning the first Saturday in November and extending through the first Sunday in February.
(4) Except as provided in subsection 362(b)(1), the Nelson bighorn sheep season in the areas described in subsection 362(a) shall be defined as follows:
(A) ~~Zones 1 through 4, 6, 8 and 9:~~ Zones 1, 2, 3, 4, 6, 8, 9, and 10: The first Saturday in December and extend through the first Sunday in February.
(B) Zone 5: The third Saturday in December and extend through the third Sunday in February.
(C) Zone 7: Beginning the third Saturday in August and extending through the last Sunday in September.
(5) Except as specifically provided in section 362, the take of bighorn sheep is prohibited.
(c) Bag and possession Limit: One mature ram defined as follows: a male Nelson bighorn sheep (Ovis canadensis nelsoni) having at least one horn, the tip of which extends beyond a point in a straight line beginning at the front (anterior) edge of the horn base, and extending downward through the rear (posterior) edge of the visible portion of the eye and continuing downward through the horn. All reference points are based on viewing the ram directly from a 90 degree angle from which the head is facing. A diagram showing the correct viewing procedure shall be distributed by the department to each successful

applicant.

d) Number of License Tags:

	Tag
Nelson Bighorn Sheep Hunt Zones	*Allocation*
Zone 1 - Marble/Clipper Mountains	~~4~~ [0-5]
Zone 2 - Kelso Peak/Old Dad Mountains	~~0~~ [0-4]
Zone 3 - Clark/Kingston Mountain Ranges	~~2~~ [0-4]
Zone 4 - Orocopia Mountains	~~1~~ [0-2]
Zone 5 - San Gorgonio Wilderness	~~2~~ [0-3]
Zone 6 - Sheep Hole Mountains	~~0~~ [0-2]
Zone 7 - White Mountains	~~3~~ [0-6]
Zone 8 - South Bristol Mountains	~~1~~ [0-3]
Zone 9 - Cady Mountains	~~4~~ [0-4]
Zone 10 – Newberry, Rodman, Ord Mountains	[0-6]
Open Zone Fund-Raising Tag	1
Marble/Clipper/South Bristol Mountains Fund-Raising Tag	1
~~Kelso Peak/Old Dad Mountains~~ Cady Mountains Fund-Raising Tag	~~0~~ 1
Total:	~~19~~ [0-42]

(e) Conditions:

(1) Nelson bighorn rams shall only be taken between one-half hour before sunrise and one-half hour after sunset.

(2) Only methods specified in sections 353 and 354, Title 14, CCR, for taking bighorn sheep may be used.

(3) Each tagholder shall possess a spotting telescope capable of magnification of 15 power (15X), which is not affixed to a rifle, while hunting.

(4) Successful general tagholders shall present the head and edible portion of the carcass of a bighorn ram to the department's checking station within 48 hours after killing the animal. All successful tagholders shall notify the department's Bishop office by telephone at (760) 872-1171 or ~~(760) 413-9596~~ (760) 872-1346 within 24 hours of killing the animal and arrange for the head and carcass to be examined.

(5) All successful bighorn sheep tagholders shall make the horns of each ram available to the department to be permanently marked in the manner prescribed by the department for identification purposes within 48 hours of killing the animal. The purpose of the permanent marking shall be to identify Nelson bighorn rams which were legally taken and

which may be transported and possessed outside the areas described in subsection 362(a).

(6) The department reserves the right to take and use any part of the tagholder's bighorn ram, except the horns, for biological analysis as long as no more than one pound of edible meat is removed.

Note: Authority cited: Sections 200, 203, 265, 1050 and 4902, Fish and Game Code. Reference: Sections 1050, 3950 and 4902, Fish and Game Code.

Appendix 2.
California Fish and Game Code
Chapter 11. Bighorn Sheep [4900-4903]

4900. Legislative Declaration of Policy to Encourage Preservation, etc.

The Legislature declares that bighorn sheep are an important wildlife resource of the state to be managed and maintained at sound biological levels. Therefore, it is hereby declared to be the policy of the state to encourage the preservation, restoration, utilization, and management of California's bighorn sheep population. The management shall be in accordance with the policy set forth in Section 1801.

(Added by Stats. 1986, Ch. 745, Sec. 3.)

4901. Determining Status and Trend

The department shall determine the status and the trend of bighorn sheep populations by management units. A plan shall be developed for each of the management units. The plan for each management unit shall include all of the following:

(a) Data on the numbers, age, sex ratios, and distribution of bighorn sheep within the management unit.

(b) A survey of range conditions and a report on the competition that may exist as a result of human, livestock, wild burro, or any other mammal encroachment.

(c) An assessment of the need to relocate or reestablish bighorn populations.

(d) A statement on the prevalence of disease or parasites within the population.

(e) Recommendations for achieving the policy objective of Section 4900.

(Added by Stats. 1986, Ch. 745, Sec. 3.)

4902. Nelson Bighorn Rams; Management, Hunting, Fees, etc.

(a) The commission may adopt all regulations necessary to provide for biologically sound management of Nelson bighorn sheep (subspecies Ovis canadensis nelsoni).

(b) (1) After the plans developed by the department pursuant to Section 4901 for the management units have been submitted, the commission may authorize sport hunting of mature Nelson bighorn rams. Before authorizing the sport hunting, the commission shall take into account the Nelson bighorn sheep population statewide, including the population in the management units designated for hunting.

(2) Notwithstanding Section 219, the commission shall not, however, adopt regulations authorizing the sport hunting in a single year of more than 15 percent of the mature Nelson bighorn rams in a single management unit, based on the department's annual estimate of the population in each management unit.

(c) The fee for a tag to take a Nelson bighorn ram shall be four hundred dollars ($400) for a resident of the state, which shall be adjusted annually pursuant to Section 713. On or before July 1, 2015, the commission shall, by regulation, fix the fee for a nonresident of the state at not less than one thousand five hundred dollars ($1,500), which shall be adjusted annually pursuant to Section 713. Fee revenues shall be deposited in the Big Game Management Account established in Section 3953 and, upon appropriation by the Legislature, shall be expended as set forth in that section.

(d) The commission shall annually direct the department to authorize not more than three of the tags available for issuance that year to take Nelson bighorn rams for the purpose of raising funds for programs and projects to benefit Nelson bighorn sheep. These tags may be sold to residents or nonresidents of the State of California at auction or by another method and shall not be subject to the fee limitation prescribed in subdivision (c). Commencing with tags sold for the 1993 hunting season, if more than one tag is authorized, the department shall designate a nonprofit organization organized pursuant to the laws of this state, or the California chapter of a nonprofit organization organized pursuant to the laws of another state, as the seller of not less than one of these tags. The number of tags authorized for the purpose of raising funds pursuant to this subdivision, if more than one, shall not exceed 15 percent of the total number of tags authorized pursuant to subdivision (b). All revenue from the sale of tags pursuant to this subdivision shall be deposited in the Big Game Management Account established in Section 3953 and, upon appropriation by the Legislature, shall be expended as set forth in that section.

(e) No tag issued pursuant to this section shall be valid unless and until the licensee has successfully completed a prehunt hunter familiarization and orientation and has demonstrated to the department that he or she is familiar with the requisite equipment for participating in the hunting of Nelson bighorn rams, as determined by the commission. The orientation shall be conducted by the department at convenient locations and times preceding each season, as determined by the commission.

(Amended by Stats. 2014, Ch. 467, Sec. 4. (AB 2105) Effective January 1, 2015.)

4903. Revenues From Fees and Expenditures

Revenue from the fees authorized by this chapter shall be deposited in the Big Game Management Account established in Section 3953 and, upon appropriation by the Legislature, shall be expended as set forth in that section. Administrative overhead shall be limited to the reasonable costs associated with the direct administration of the program. These funds shall be used to augment, and not to replace, moneys appropriated from existing funds available to the department for the preservation, restoration, utilization, and management of bighorn sheep. The department shall maintain internal accountability necessary to ensure that all restrictions on the expenditure of these funds are met.

4904. Annual Report; Content

[Repealed Stats. 2012]

Appendix 3: Public Comments Received

Name and Date	Comment
Andy Nickell 11/30/2018 Submitted via e-mail	Hello These are my comments on the bighorn sheep program in California: Because of limited numbers of bighorn sheep statewide I believe tag allocation should be based on providing maximum hunter opportunity to the greatest number of hunters. The majority of bighorn tags should be awarded in a random draw instead of using preference points. New hunters and young hunters will likely never catch up to the maximum point holders of today due to sheer numbers of hunters and low numbers of sheep, awarding 90% of sheep tags to max point holders only serves to discourage new hunters from even bothering to apply as well as driving hunters to apply out of state taking their conservation dollars elsewhere. Lack of hunter recruitment is one of many factors that will negatively impact conservation efforts in the future, and lack of opportunity is the leading cause of lack of hunter retention. Any new hunter who runs the numbers will see that with the current preference point system they have virtually no chance of hunting bighorn sheep in the state of California. To increase numbers of bighorn sheep we should look to Nevada's sheep program for guidance which has been extremely successful in restoring sheep populations statewide from a low point in the 1960s. Domestic sheep cause conflicts with bighorn sheep. Native wildlife should be given greater priority than agriculture. If this means cutting domestic grazing allotments then so be it.

	Thank you
Cliff St. Martin Dry Creek Outfitters 12/6/2018 Submitted via email	Dry Creek Outfitters and crew spend countless days every year in the desert observing BHS and working closely with California Fish and Wildlife, SCBS, and California Wild Sheep. In doing so, we see the populations of BHS throughout different units. Few units are struggling with very low lamb recruitment and also populations doing very well. I would like to recommend below, harvest numbers in each unit that would be very conservative but yet an overall increase in most units but not all units. Obviously each year this quota needs be revisited. I apologize for not listing each unit by their individual “zone number” but I’m in the field and trying to stumble through this by phone. Kelso/ Old Dads - 0 tags again this season White Mountains- 4 tags total Even though the Whites are a large unit access is limited. As a result all four tags could at the same time could be somewhat crowded. Also in the past their is interference with the sheep season opener the same date as the archery deer season. It would make for a much more enjoyable hunt for everyone to have it a split season with two tags for sheep beginning around August 1st. And running approx. 30days until first of Sept. The second season beginning the next day and running approx. 30 days until the first of October. Marble/ Clippers- 5 tags Again with a split season. Starting the first Saturday in December and splitting it in half with the second half ending as usual. Clark/Kingston’s - 2 tags Cady’s- 4 tags Orocopias-1 tag Sheep Holes- 1 tag

	San Gorgonios- 4 tags South Bristol's- 0 Also with the possibility of additional unit or units opening and having an additional auction tag (zone specific) We need to be sure the fund raising tag and zone specific tags are in separate units. The open zone tag should hold priority over all tags thus keeping the zone specific holder and the fund raising holder unable to hunt the two premier units in Calif. (Orocopias and San Gorgonios) I strongly believe we need to lengthen the season dates for the auction hunters. The auction hunter pays a great deal of money to have a great hunt and this year was not good. Sheep were scattered throughout the unit where a specific ram was being hunted just two weeks before the opener. That along with the deer season opening the same day ruined the hunters opportunity at a great ram. This particular family has purchased this tag twice in the past three years spending approx. $400,000.00 on the two tags. I think that opening the season for the zone specific and open zone tag holder could begin as early as Sept. 1 and run through March or April at least. There should be no issues about this. Only one ram will be harvested and this would be a great incentive to more potential bidders.

Appendix 4: Environmental Checklist Form

Environmental Checklist form

NOTE: The following is a sample form and may be tailored to satisfy individual agencies' needs and project circumstances. It may be used to meet the requirements for an initial study when the criteria set forth in CEQA Guidelines have been met. Substantial evidence of potential impacts that are not listed on this form must also be considered. The sample questions in this form are intended to encourage thoughtful assessment of impacts, and do not necessarily represent thresholds of significance.

1. Project title: Bighorn Sheep Hunting

2. Lead agency name and address:

   California Fish and Game Commission

   1416 9th Street

   Sacramento, CA 95814

3. Contact person and phone number: Melissa Miller-Henson, Acting Executive Director, Fish and Game Commission,

   (916) 653-4389

4. Project location: Statewide

5. Project sponsor's name and address:

   California Department of Fish and Wildlife

   Wildlife Branch, 1812 9th Street

   Sacramento, CA 95811

6. General plan designation: N/A

7. Zoning: N/A

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.) The proposed project would modify bighorn sheep hunting tag quotas, establish a new hunt zone, and reallocate a fund-raising tag.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

   The project occurs in areas in Mono, San Bernardino, and Riverside Counties.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

N/A

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

    No.

NOTE: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Geology /Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☒ Recreation
☐ Transportation/Traffic	☐ Tribal Cultural Resources	☐ Utilities/Service Systems
☐ Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

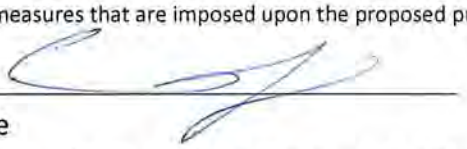
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT equivalent under the Commission's Certified Regulatory Plan is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

2/19/19

Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance

Issues:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES: Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
VII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
XI. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES.				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
recreational facilities which might have an adverse physical effect on the environment?				
c) Does the project have the potential to impact recreational activities dependent on wildlife, such as hunting or wildlife viewing?	☒	☐	☐	☐
XVI. TRANSPORTATION/TRAFFIC.				
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. TRIBAL CULTURAL RESOURCES				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape,				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XIX. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
current projects, and the effects of probable future projects)?				
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Note: Authority cited: Sections 21083 and 21083.05, 21083.09 Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21073, 21074 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21080.3.1, 21080.3.2,21082.3, 21084.2, 21084.3, 21093, 21094, 21095, and 21151, Public Resources Code; *Sundstrom v. County of Mendocino,*(1988) 202 Cal.App.3d 296; *Leonoff v. Monterey Board of Supervisors,* (1990) 222 Cal.App.3d 1337; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

Appendix 5: Desert Bighorn Sheep Surveys

Zone	Year	Survey Type	Number of Lambs	Number of Ewes	Number of Rams	Number of Unclassified	Total Counted
Marble Mountains & Clipper Mountains	2007	Helicopter	12	84	46	0	142
	2009	Helicopter	34	88	65	0	187
	2015	Helicopter	8	48	23	5	84
	2016	Ground	42	73	35	2	152
	2018	Ground	18	78	35	1	132
	2007	Helicopter	0	8	11	0	19
	2009	Helicopter	4	13	16	0	33
	2015	Helicopter	4	20	22	0	46
Clark Mountain & Kingston Range	2007	Helicopter	0	31	18	0	49
	2009	Helicopter	0	12	8	0	20
	2015	Helicopter	0	1	3	0	4
	2016	Helicopter	1	31	13	5	50
	2007	Helicopter	3	27	21	0	51
	2009	Helicopter	6	33	20	0	59
	2015	Helicopter	9	25	14	0	48
	2016	Helicopter	3	31	19	2	55
	2018	Helicopter	5	80	34	0	119
White Mountains	2008	Helicopter	16	59	52	0	127
	2009	Helicopter	16	60	29	2	107
	2015	Ground	46	69	82	20	217
	2016	Ground	26	43	9	22	100
	2018	Ground	36	124	62	1	223
Cady Mountains	2007	Helicopter	12	59	38	0	109
	2009	Helicopter	37	92	38	0	167
	2010	Helicopter	23	102	49	0	174
	2018	Helicopter	8	58	27	0	93
Newberry, Rodman and Ord Mountains	2016	Helicopter	49	70	52	0	171
	2018	Helicopter	35	95	72	0	202

STATE OF CALIFORNIA
FISH AND GAME COMMISSION
STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-adoption Statement of Reasons)

Amend Section 364
Title 14, California Code of Regulations
Re: Elk Hunts, Seasons, and Number of Tags

I. Date of Initial Statement of Reasons: November 15, 2018

II. Date of Pre-Adoption Statement of Reasons: April 4, 2019

III. Dates and Locations of Scheduled Hearings:

(a)	Notice Hearing:	Date:	December 13, 2018
		Location:	Oceanside, CA
(b)	Discussion Hearing:	Date:	February 6, 2019
		Location:	Sacramento, CA
(c)	Discussion Hearing:	Date:	April 17, 2019
		Location:	Santa Monica, CA
(d)	Adoption Hearing	Date:	May 16, 2019
		Location:	Teleconference

IV. Description of Modification of Originally Proposed Language of Initial Statement of Reasons:

The originally proposed regulatory language contained tag quota ranges for each elk hunt. A specific tag allocation is proposed for each zone within these ranges.

V. Reasons for Modification of Originally Proposed Language of Initial Statement of Reasons:

The originally proposed regulatory language contained tag quota ranges for each elk hunt. The Department's final recommendations for specific tag quotas in each hunt zone are set forth in the attached Regulatory Text. These are based on input from Department regional staff and public to address goals for the unit, including alleviating depredation concerns.

VI. Summary of Primary Considerations Raised in Opposition and in Support:
See attachment.

Updated Informative Digest/Policy Statement Overview

Current regulations in Section 364, Title 14, CCR, provide definitions, hunting zone descriptions, season dates and elk license tag quotas. In order to achieve elk herd management goals and objectives and maintain hunting quality, it is periodically necessary to adjust quotas, seasons, hunt areas and other criteria, in response to dynamic environmental and biological conditions. The proposed amendments to Section 364 will establish 2019 tag quotas, season dates, and tag distribution within each hunt adjusting for annual fluctuations in populations.

Proposed Amendments: The proposed ranges of elk tags for 2019 are presented in the Proposed Regulatory Text of Section 364.

1. Subsections 364(r) through (aa) specify elk license tag quotas for each hunt in accordance with management goals and objectives.

2. Amend and correct the Special Condition in subsection (d)(13)(B)3. East Park Reservoir General Methods Tule Elk Hunt, alerting hunters to the current Colusa County variance which permits the use of muzzleloaders.

3. Modify Season Dates. Due to military use constraints at Fort Hunter Liggett, hunt dates are annually subject to change and may be adjusted or cancelled by the base commander.

Benefits of the regulations

The proposed regulations will contribute to the sustainable management of elk populations in California. Existing elk herd management goals specify objective levels for the proportion of bulls in the herds. These ratios are maintained and managed in part by periodically modifying the number of tags. The final number of tags will be based upon findings from annual harvest, herd composition counts, and population estimates where appropriate.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government

Evaluation of incompatibility with existing regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200 and 203, has the sole authority to regulate elk hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to elk tag allocations are consistent with Title 14. Therefore, the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

The attached regulatory text and table has been amended from the version in the Initial Statement of Reasons to replace tag quota ranges with specific recommended tag quotas for each hunt.

REGULATORY TEXT

Section 364 is amended to read as follows:

§364. Elk Hunts, Seasons, and Number of Tags.

. . . [No changes subsections (a) through (d)(10)]

(11) Grizzly Island General Methods Tule Elk Hunt:
(A) Area: Those lands owned and managed by the Department of Fish and ~~Game~~ Wildlife as the Grizzly Island Wildlife Area.
(B) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.

. . . [No changes subsection (d)(12)]

(13) East Park Reservoir General Methods Tule Elk Hunt:
(A) Area: In those portions of Glenn and Colusa counties within a line beginning in Glenn County at the junction of Interstate Highway 5 and Highway 162 at Willows; west along Highway 162 (Highway 162 becomes Alder Springs Road) to the Glenn Mendocino County line; south along the Glenn-Mendocino County line to the Glenn Lake County line; east and then south along the Glenn-Lake County line to the Colusa Lake County line; west, and then southeast along the Colusa-Lake County line to Goat Mountain Road; north and east along Goat Mountain Road to the Lodoga-Stonyford Road; east along the Lodoga-Stonyford Road to the Sites-Lodoga Road at Lodoga; east along the Sites-Lodoga Road to the Maxwell-Sites Road at Sites; east along the Maxwell-Sites Road to Interstate Highway 5 at Maxwell; north along Interstate Highway 5 to the point of beginning.
(B) Special Conditions:
1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Access to private land may be restricted or require payment of an access fee.
3. A Colusa County ordinance prohibits firearms on land administered by the USDI Bureau of Reclamation in the vicinity of East Park Reservoir. ~~A variance has been requested to allow~~ A county variance currently allows for the use of muzzleloaders (as defined in Section 353) on Bureau of Reclamation land within the hunt zone, hunters are responsible for checking with county authorities for any change in the variance.

. . . [No changes subsections (d)(14) through (q)]

§	Hunt	1. Bull Tags	2. Antlerless Tags	3. Either-Sex Tags	4. Spike Tags
		5. Season			
(r) Department Administered General Methods Roosevelt Elk Hunts					
(1)(A)	Siskiyou	20	20		
		Shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.			
(2)(A)	Northwestern	15	0	3	
		Shall open on the first Wednesday in September and continue for 23 consecutive days.			
(3)(A)	Marble Mountains	35	10		
		Shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.			
(s) Department Administered General Methods Rocky Mountain Elk Hunts					
(1)(A)	Northeastern California Bull	15			
		The bull season shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days			
(B)	Northeastern California Antlerless		10		
		The antlerless season shall open on the second Wednesday in November and continue for 12 consecutive days.			
(t) Department Administered General Methods Roosevelt/Tule Elk Hunts					
(1)(A)	Mendocino	2	0		
		The season shall open on the Wednesday preceding the fourth Saturday in September and continue for 12 consecutive days.			
(u) Department Administered General Methods Tule Elk Hunts					
(1)(A)	Cache Creek Bull	2			
		The Bull season shall open on the second Saturday in October and continue for 16 consecutive days.			

(B)	Antlerless		2		
		The Antlerless season shall open on the third Saturday in October and continue for 16 consecutive days.			
(2)(A)	La Panza Period 1	6	5		
		Shall open on the second Saturday in October and extend for 23 consecutive days			
(B)	Period 2	6	6		
		Shall open on the second Saturday in November and extend for 23 consecutive days.			
(3)(A)	Bishop Period 3	0	0		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(B)	Period 4	0	0		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(C)	Period 5	0	0		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(4)(A)	Independence Period 2	1	1		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(B)	Period 3	1	1		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(C)	Period 4	0	1		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(D)	Period 5	0	0		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(5)(A)	Lone Pine Period 2	1	1		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(B)	Period 3	1	1		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			

(C)	Period 4	0	1		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(D)	Period 5	0	0		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(6)(A)	Tinemaha Period 2	0	0		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(B)	Period 3	0	0		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(C)	Period 4	0	0		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(D)	Period 5	0	0		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(7)(A)	West Tinemaha Period 1	0	0		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(B)	Period 2	0	0		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(C)	Period 3	0	0		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(D)	Period 4	0	0		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(E)	Period 5	0	0		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(8)(A)	Tinemaha Mountain Period 1	0			
		Shall open on the second Saturday in September and extend for 16 consecutive days.			

(B)	Period 2	0			
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(C)	Period 3	0			
		Shall open on the third Saturday in October and extend for 9 consecutive days			
(D)	Period 4	0			
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(E)	Period 5	0			
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(9)(A)	Whitney Period 2	0	0		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(B)	Period 3	0	0		
		Shall open on the third Saturday in October and extend for 9 consecutive days			
(C)	Period 4	0	0		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(D)	Period 5	0	0		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(10)(A)	Goodale Period 1	0	0		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(B)	Period 2	0	0		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(C)	Period 3	0	1		
		Shall open on the third Saturday in October and extend for 9 consecutive days			
(D)	Period 4	0	0		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			

(E)	Period 5	0	0		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(11)(A)	Grizzly Island Period 1	0	6		0
		Shall open on the second Tuesday after the first Saturday in August and continue for 4 consecutive days.			
(B)	Period 2	0	2		4
		Shall open on the first Thursday following the opening of period one and continue for 4 consecutive days.			
(C)	Period 3	0	6		0
		Shall open on the first Tuesday following the opening of period two and continue for 4 consecutive days			
(D)	Period 4	0	4		2
		Shall open on the first Thursday following the opening of period three and continue for 4 consecutive days.			
(E)	Period 5	0	8		0
		Shall open on the first Tuesday following the opening of period four and continue for 4 consecutive days			
(F)	Period 6	0	0		0
		Shall open on the first Thursday following the opening of period five and continue for 4 consecutive days.			
(G)	Period 7	0	8		0
		Shall open on the first Tuesday following the opening of period six and continue for 4 consecutive days			
(H)	Period 8	0	0		6
		Shall open on the first Thursday following the opening of period seven and continue for 4 consecutive days.			
(I)	Period 9	0	8		0
		Shall open on the first Tuesday following the opening of period eight and continue for 4 consecutive days.			
(J)	Period 10	0	0		0
		Shall open on the first Thursday following the opening of period nine and continue for 4 consecutive days.			
(K)	Period 11	0	8		0
		Shall open on the first Tuesday following the opening of period ten and continue for 4 consecutive days.			

(L)	Period 12	3	0		0
		Shall open on the first Thursday following the opening of period eleven and continue for 4 consecutive days.			
(M)	Period 13	0	8		0
		Shall open on the first Tuesday following the opening of period twelve and continue for 4 consecutive days.			
(12)(A)	Fort Hunter Liggett General Public Period 1	0	0		
		Shall open on the first Thursday in November and continue for 9 consecutive days.			
(B)	Period 2	0	0		
		Shall open November 22 and continue for 9 consecutive days.			
(C)	Period 3	0	0		
		Shall open on the third Saturday in December and continue for ~~16~~ 12 consecutive days.			
(13)(A)	East Park Reservoir	2	2		
		Shall open the first Saturday in September and continue for 27 consecutive days.			
(14)(A)	San Luis Reservoir	0	0	5	
		Shall open on the first Saturday in October and continue for 23 consecutive days.			
(15)(A)	Bear Valley	2	1		
		Shall open on the second Saturday in October and continue for 9 consecutive days.			
(16)(A)	Lake Pillsbury Period 1		4		
		Shall open on the Wednesday preceding the second Saturday in September and continue for 10 consecutive days.			
(B)	Period 2	2			
		Shall open Monday following the fourth Saturday in September and continue for 10 consecutive days.			
(17)(A)	Santa Clara	0	0		
		Shall open on the second Saturday in October and continue for 16 consecutive days.			
(18)(A)	Alameda	0	0		
		Shall open on the second Saturday in October and continue for 16 consecutive days.			

(v) Department Administered Apprentice Hunts					
(1)(A)	Marble Mountain General Methods Roosevelt Elk Apprentice			~~2~~ 4	
		Shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.			
(2)(A)	Northeast California General Methods Rocky Mountain Elk Apprentice			2	
		Shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days			
(3)(A)	Cache Creek General Methods Tule Elk Apprentice	1	0		
		Shall open on the second Saturday in October and continue for 16 consecutive days.			
(4)(A)	La Panza General Methods Tule Elk Apprentice	0	1		
		Shall open on the second Saturday in October and extend for 23 consecutive days.			
(5)(A)	Bishop General Methods Tule Elk Apprentice Period 2	0	0		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(6)(A)	Grizzly Island General Methods Tule Elk Apprentice Period 1		3		0
		Shall open on the second Tuesday after the first Saturday in August and continue for 4 consecutive days			
(B)	Period 2		0		2
		Shall open on the first Thursday following the opening of period one and continue for 4 consecutive days.			
(C)	Period 3		3		0
		Shall open on the first Tuesday following the opening of period two and continue for 4 consecutive days.			
(D)	Period 4		0		2
		Shall open on the first Thursday following the opening of period three and continue for 4 consecutive days.			
(7)(A)	Fort Hunter Liggett General Public General Methods Apprentice	0	0		
		Shall open on the third Saturday in December and continue for ~~16~~ 12 consecutive days.			

(w) Department Administered Archery Only Hunts						
(1)(A)	Northeast California Archery Only	0	0	10		
		Shall open on the Wednesday preceding the first Saturday in September and continue for 12 consecutive days.				
(2)(A)	Owens Valley Multiple Zone Archery Only	3	0			
		Shall open on the second Saturday in August and extend for 9 consecutive days.				
(3)(A)	Lone Pine Archery Only Period 1	0	1			
		Shall open on the second Saturday in September and extend for 16 consecutive days.				
(4)(A)	Tinemaha Archery Only Period 1	0	0			
		Shall open on the second Saturday in September and extend for 16 consecutive days.				
(5)(A)	Whitney Archery Only Period 1	0	0			
		Shall open on the second Saturday in September and extend for 16 consecutive days.				
(6)(A)	Fort Hunter Liggett General Public Archery Only Either Sex			3		
		Shall open on the last ~~Wednesday~~ Saturday in July and continue for 9 consecutive days.				
(B)	Fort Hunter Liggett General Public Archery Only Antlerless		4			
		Shall open on the ~~Tuesday preceding the fourth Thursday~~ Second Saturday in November and continue for 9 consecutive days.				
(x) Department Administered Muzzleloader Only Tule Elk Hunts						
(1)(A)	Bishop Muzzleloader Only Period 1	0	0			
		Shall open on the second Saturday in September and extend for 16 consecutive days.				
(2)(A)	Independence Muzzleloader Only Period 1	1	0			
		Shall open on the second Saturday in September and extend for 16 consecutive days.				
(3)(A)	Goodale Muzzleloader Only Period 1	0	1			
		Shall open on the second Saturday in September and extend for 16 consecutive days.				

(4)(A)	Fort Hunter Liggett General Public Muzzleloader Only	4	0		
		Shall open on the ~~third~~ forth Saturday in ~~December~~ November and continue for ~~17~~ 9 consecutive days.			
(*y*) Department Administered Muzzleloader/Archery Only Hunts					
(1)(A)	Marble Mountain Muzzleloader/Archery Roosevelt Elk			~~5~~ 10	
		Shall open on the last Saturday in October and extend or 9 consecutive days.			
(z) Fund Raising Elk Tags					
(1)(A)	Multi-zone Fund Raising Tags	1			
		Siskiyou and Marble Mountains Roosevelt Elk Season shall open on the Wednesday preceding the first Saturday in September and continue for 19 consecutive days. Northwestern Roosevelt Elk Season shall open on the last Wednesday in August and continue for 30 consecutive days. Northeastern Rocky Mountain Elk Season shall open on the Wednesday preceding the last Saturday in August and continue for 33 consecutive days. La Panza Tule Elk Season shall open on the first Saturday in October and extend for 65 consecutive days.			
(2)(A)	Grizzly Island Fund Raising Tags	1			
		Shall open on the first Saturday in August and continue for 30 consecutive days.			
(3)(A)	Owens Valley Fund Raising Tags	1			
		Shall open on the last Saturday in July and extend for 30 consecutive days.			
(aa) Military Only Tule Elk Hunts					
(1)(A)	Fort Hunter Liggett Military Only General Methods Early Season	0	0		
		The early season shall open on the second Monday in August and continue for 5 consecutive days and reopen on the fourth Monday in August and continue for 5 consecutive days			

(B)	Period 1		0		
		Shall open on the first Thursday in November and continue for 9 consecutive days.			
(C)	Period 2		0		
		Shall open November 22 and continue for 9 consecutive days.			
(D)	Period 3	0			
		Shall open on the third Saturday in December and continue for ~~16~~ 12 consecutive days.			
(2)(A)	Fort Hunter Liggett Military Only General Methods Apprentice	0	0		
		Shall open on the third Saturday in December and continue for ~~16~~ 12 consecutive days.			
(3)(A)	Fort Hunter Liggett Military Only Archery Only Either Sex			3	
		Shall open on the last ~~Wednesday~~ Saturday in July and continue for 9 consecutive days.			
(B)	Antlerless		4		
		~~Shall open on the last Wednesday in September and continue for 9 consecutive days.~~ Shall open on the Second Saturday in November and continue for 9 consecutive days.			
(4)(A)	Fort Hunter Liggett Military Only Muzzleloader Only	4			
		Shall open on the third Saturday in ~~December~~ November and continue for ~~17~~ 9 consecutive days.			

Note: Authority cited: Sections 200, 203, 203.1, 265, 332 and 1050, Fish and Game Code. Reference: Sections 332, 1050, 1570, 1571, 1572, 1573 and 1574, Fish and Game Code.

STATE OF CALIFORNIA
FISH AND GAME COMMISSION
STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-adoption Statement of Reasons)

Amend Section(s) 364.1
Title 14, California Code of Regulations
Re: Elk Hunts, Seasons, and Number of Tags

I. Date of Initial Statement of Reasons: November 15, 2018

II. Date of Pre-Adoption Statement of Reasons: April 4, 2019

III. Dates and Locations of Scheduled Hearings:

(a)	Notice Hearing:	Date:	December 13, 2018
		Location:	Oceanside, CA
(b)	Discussion Hearing:	Date:	February 6, 2019
		Location:	Sacramento, CA
(c)	Discussion Hearing:	Date:	April 17, 2019
		Location:	Santa Monica, CA
(d)	Adoption Hearing	Date:	May 16, 2019
		Location:	Teleconference

IV. Description of Modification of Originally Proposed Language of Initial Statement of Reasons:

The originally proposed regulatory language contained elk tag quota ranges for the Northwestern and Northeastern Elk zones. The Department recommends specific tag quotas within these ranges for each elk zone.

Two errors in the proposed language of the Initial Statement of Reasons require correction. Section (i)(2) listed an antlerless tag range of 0-32. It should have been 0-34. Section (j)(1) did not list a tag range for either-sex tags. It should have listed a tag range of 0-2. No other modifications were made to the amended proposed language of the Initial Statement of Reasons.

V. Reasons for Modification of Originally Proposed Language of Initial Statement of Reasons:

The originally proposed regulatory language contained elk tag quota ranges for the Northwestern and Northeastern Elk zones. The specific tag quotas have been identified after regional and public input to address depredation concerns. In the Northwestern elk zone the additional 21 antlerless and 6 bull tags will be distributed to the SHARE landowners in Del Norte and Humboldt County to help

alleviate property damage. The distribution will keep the tag allocation below 20% of the minimum counts for each area. In the Northeastern elk zone an additional four elk tags, two bull and two either-sex, will be authorized to two landowners in Shasta County to alleviate property damage. Most elk in the Northeastern elk zone are harvested out of the Devil's Garden sub-herd area. The Department's efforts would focus on new SHARE properties in the area of the Shasta Lake sub-herd.

VI. Summary of Primary Considerations Raised in Opposition and in Support:

This item will appear as an appendix to the Final Statement of Reasons.

Updated Informative Digest/Policy Statement Overview

Current regulations in Section 364.1, SHARE Elk Hunts, T14, CCR, specify elk tag quotas for each hunt area. In order to achieve elk herd management goals and objectives and maintain hunting quality, it is periodically necessary to adjust quotas in response to dynamic environmental and biological conditions.

Preliminary tag quota ranges are indicated pending final 2019 tag allocations in accordance with elk management goals and objectives. Survey data collected between August 2018, and March 2019, will be the basis for the number of tags recommended to the Commission at the April 2019 adoption hearing.

The preliminary tag quota ranges for 2019 are found in the proposed Regulatory Text of Section 364.1

Benefits of the regulations:

The proposed regulations will contribute to the sustainable management of elk populations and to relieve depredation damage to landowners in California. The final number of tags will be based upon findings from annual harvest and herd composition counts where appropriate

Non-monetary benefits to the public:

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Evaluation of Incompatibility with existing regulations:

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200 and 203, has the sole authority to regulate elk hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to elk tag allocations are consistent with Title 14. Therefore, the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

The following table has been amended from the version in the Initial Statement of Reasons. The Department requests FGC authorize a 15-day notice extending the ranges for the Northwestern Elk Hunting Zone (subsection 364.1(i)(2)) from 0-32 to 34 antlerless tags and the Northeast California Elk Hunting Zone subsection 364.1(j)(1)) from 0 to 2 either sex tags. These amendments correct what is accurately reflected in the project as described in the Environmental Document. The corrected tag range in the table below and the final number of tags in the proposed regulatory text and table reflect a proposed increase of 20 tags in the Northwestern elk zone in Section 364. The tag range for either sex tags in the Northeast California Hunt Zone was inadvertently left out of the Initial Statement

of Reasons and is consistent with the approved tag quota ranges previously analyzed in the 2010 Environmental Document.

§	(A) Hunts	1. Bull Tags	2. Antlerless Tags	3. Either-Sex Tags	4. Spike Tags
		(B) Area			
(i) Department Administered SHARE Roosevelt Elk Hunts					
(1)	Siskiyou	2	2		
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(1)(A).			
(2)	Northwestern	~~7~~ 13	~~13 [0-3234]~~ **34**	0	
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(2)(A).			
(3)	Marble Mountain	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(3)(A).			
(*j*) Department Administered General Methods SHARE Rocky Mountain Elk Hunts					
(1)	Northeast California	~~0~~ 2	0	~~0~~ **2**	
		(B) Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).			
(k) Department Administered SHARE Roosevelt/Tule Elk Hunts					
(1)	Mendocino	2	4		
		(B) Area: The tag shall be valid in the area described in subsection 364(c)(1)(A).			
(*l*) Department Administered SHARE Tule Elk Hunts					
(1)	Cache Creek	1	1		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(1)(A).			
(2)	La Panza	5	10		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(2)(A).			
(3)	Bishop	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(3)(A).			
(4)	Independence	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(4)(A).			
(5)	Lone Pine Period 2	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(5)(A).			
(6)	Tinemaha	0	0		

§	(A) Hunts	1. Bull Tags	2. Antlerless Tags	3. Either-Sex Tags	4. Spike Tags
		(B) Area			
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(6)(A).			
(7)	West Tinemaha	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(7)(A).			
(8)	Tinemaha Mountain	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(8)(A).			
(9)	Whitney	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(9)(A).			
(10)	Goodale	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(10)(A).			
(11)	Grizzly Island	0	0		0
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).			
(12)	Fort Hunter Liggett	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).			
(13)	East Park Reservoir	1	1		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(13)(A).			
(14)	San Luis Reservoir	2	3		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(14)(A).			
(15)	Bear Valley	1	1		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(15)(A).			
(16)	Lake Pillsbury	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(16)(A).			
(17)	Santa Clara	0			
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(17)(A).			
(18)	Alameda	0			
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(18)(A).			

REGULATORY TEXT

Section 364.1 is amended to read:

§ 364.1. Department Administered Shared Habitat Alliance for Recreational Enhancement (SHARE) Elk Hunts

. . . [No changes subsections (a) through (h)]

§	(A) Hunts	1. Bull Tags	2. Antlerless Tags	3. Either-Sex Tags	4. Spike Tags
		(B) Area			
(i) Department Administered SHARE Roosevelt Elk Hunts					
(1)	Siskiyou	2	2		
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(1)(A).			
(2)	Northwestern	~~7~~ 13	~~13~~ **34**	0	
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(2)(A).			
(3)	Marble Mountain	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(3)(A).			
(*j*) Department Administered General Methods SHARE Rocky Mountain Elk Hunts					
(1)	Northeast California	~~0~~ 2	0	~~0~~ **2**	
		(B) Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).			
(k) Department Administered SHARE Roosevelt/Tule Elk Hunts					
(1)	Mendocino	2	4		
		(B) Area: The tag shall be valid in the area described in subsection 364(c)(1)(A).			
(*l*) Department Administered SHARE Tule Elk Hunts					
(1)	Cache Creek	1	1		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(1)(A).			
(2)	La Panza	5	10		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(2)(A).			
(3)	Bishop	0	0		
		(B) Area: The tag shall be valid in the area described in			

§	(A) Hunts	1. Bull Tags	2. Antlerless Tags	3. Either-Sex Tags	4. Spike Tags
		(B) Area			
		subsection 364(d)(3)(A).			
(4)	Independence	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(4)(A).			
(5)	Lone Pine Period 2	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(5)(A).			
(6)	Tinemaha	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(6)(A).			
(7)	West Tinemaha	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(7)(A).			
(8)	Tinemaha Mountain	0			
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(8)(A).			
(9)	Whitney	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(9)(A).			
(10)	Goodale	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(10)(A).			
(11)	Grizzly Island	0	0		0
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).			
(12)	Fort Hunter Liggett	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).			
(13)	East Park Reservoir	1	1		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(13)(A).			
(14)	San Luis Reservoir	2	3		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(14)(A).			
(15)	Bear Valley	1	1		

§	(A) Hunts	1. Bull Tags	2. Antlerless Tags	3. Either-Sex Tags	4. Spike Tags
		(B) Area			
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(15)(A).			
(16)	Lake Pillsbury	0	0		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(16)(A).			
(17)	Santa Clara	0			
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(17)(A).			
(18)	Alameda	0			
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(18)(A).			

Note: Authority Cited: Sections 332 and 1050, Fish and Game Code. Reference: Sections 332, 1050 and 1574, Fish and Game Code.

DRAFT SUPPLEMENTAL ENVIRONMENTAL DOCUMENT

Section 364, 364.1, 555, and 601
Title 14, California Code of Regulations

Regarding

ELK HUNTING

SCH 2018112037

February 14, 2019

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND WILDLIFE
on behalf of the California Fish and Game Commission

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CHAPTER 1. SUMMARY

PROPOSED PROJECT AND ALTERNATIVES

The proposed project involves modifications to the current elk hunting regulations for the 2019-2020 elk hunting season and subsequent seasons until the Fish and Game Commission (Commission) adopts new regulations modifying tag limits. Specifically, the Commission proposes to:

- Increase the tag quota range (by 20 tags) in the Northwestern Elk Zone.
- Increase the individual quotas in the other zones, but within previously analyzed quota ranges
- Modify season dates for Fort Hunter Liggett consistent with section 3453 of the Fish and Game Code (FGC). No changes in tag quotas are proposed.

The analysis in the 2018 Draft Supplemental Environmental Document (DSED) focuses on the potential for any new significant or substantially more severe environmental impacts from the increase in tag quota range in the Northwestern Elk Zone. Impacts from any tag modifications within other zones in the state are analyzed within the 2010 Environmental Document (incorporated by reference, April, 2010 Final Environmental Document, SCH#200912083, available at 1812 9th Street, Sacramento, CA 95811). The Commission finds the analysis in the 2010 Environmental Document still contains informational value and is appropriate to use as a basis for the proposed quota changes in zones other than the Northwestern Elk Zone.

The Department of Fish and Wildlife (Department) also provides, and the Commission is considering, three alternatives to the proposed project that could feasibly attain the basic objectives of the project. Alternative 1 (no change) would maintain the existing analyzed harvest for the hunt zone without change. Alternative 2 (increased harvest) involves an increase of 60 tags (three times that of the proposed project). Alternative 3 (reduced harvest) involves a harvest increase of 10 tags (half that of the proposed project). Current and proposed harvest strategies generally allow for population growth through time. However, under the Increased Harvest alternative, population growth might be curtailed and/or decline slightly over time.

SUMMARY OF IMPACTS AND MITIGATION

Table 1 summarizes the Commission findings of no significant long-term adverse impacts associated with the proposed project or any of the project alternatives considered for the 2019-20 elk hunting regulations.

Table 1. Impact Summary

Alternative	Description	Significant Impact	Mitigation
Proposed Project	Increase the tag quota range for the Northwestern Elk Zone by 20 tags	No	N/A
Alternative 1. No Project	No change from the 2018-19 hunting regulations	No	N/A
Alternative 2. Increase Tag Quota (3 x proposed project)	Increase the tag quota range for the Northwestern Elk Zone by up to 60 tags	No	N/A
Alternative 3. Reduced Proposal (half of Proposed Project)	Increase the tag quota range for the Northwestern Elk Zone by 10 tags	No	N/A

Based on success rates from previous years, the Department expects that the actual harvest will range from 80-95 percent of the elk tags allocated for 2019 (CDFW, 2018).

State role in establishing elk hunting regulations

The DSED is intended to support the actions of the Commission as it considers regulations pertinent to conservation and providing public recreational opportunities. The Commission has prepared this document to analyze the potential of any new significant or substantially more severe environmental impacts than were previously disclosed in an Environmental Document prepared in 2010. These actions are consistent with the wildlife conservation policy adopted by the Legislature as set forth in Section 1801, FGC. The State's wildlife conservation policy, among other things, specifies an objective of providing hunting opportunities consistent with maintaining healthy wildlife populations.

Elk hunting regulations adopted by the Commission are set forth in Sections 364, 364.1, and 555, Title 14, California Code of Regulations (CCR), and enforced by the Department. These regulations are authorized under the following statutes:

Section 203, FGC, authorizes the Commission to regulate game mammals in the state.

Section 203.1, FGC, requires the Commission to consider populations, habitat, food supplies, the welfare of individual animals, and other pertinent facts when adopting hunting regulations for elk.

Section 332, FGC, provides that the Commission may determine and fix the area or areas, the seasons and hours, the bag and possession limit, and the number of elk that may be taken under rules and regulations that the commission may adopt from time to time.

Sections 3950 -3952, FGC, designate elk (genus *Cervus*) as a game mammal in California; authorizes the Commission to regulate take (harvest) of elk; and requires the Department to prepare an elk management plan.

FGC Section 3952 was adopted in 2003 and requires the Department to develop a statewide approach for management of elk. FGC Section 1801 is the Department's Conservation of Wildlife Resources Policy, to encourage preservation, conservation and maintenance of wildlife resources under the jurisdiction and influence of the state. This section also provides objectives for the policy that include:

- Providing for the beneficial use and enjoyment of wildlife
- Perpetuating all species for their intrinsic value
- Providing aesthetic, educational and non-appropriative uses
- To maintain diversified recreational uses
- To provide economic contributions
- To alleviate economic losses

FGC Section 1802 gives the Department jurisdiction over the conservation, protection and management of fish, wildlife and native plants, and the habitat necessary for biologically sustainable populations of those species. FGC Section 3952 directs the Department to develop a statewide elk management plan, consistent with the Conservation of Wildlife Resources Policy, and maintain sufficient elk populations in perpetuity, while considering the following:

- Characteristics and geographic range of each elk subspecies within the state, including Roosevelt elk, Rocky Mountain elk, and tule elk
- Habitat conditions and trends within the state
- Major factors affecting elk within the state, including, but not limited to, conflicts with other land uses
- Management activities necessary to achieve the goals of the plan and to alleviate property damage
- Identification of high priority areas for elk management
- Methods for determining population viability and the minimum population level needed to sustain local herds
- Description of the necessary contents for individual herd management plans prepared for high priority areas

An Elk Conservation and Management Plan (CDFW 2018) describes historical and current geographic range, habitat conditions and trends, and major factors affecting

Roosevelt, Rocky Mountain and tule elk in California. It identifies, delimits and describes high priority areas and actions for elk management, referred to as Elk Management Units (EMUs) and establishes broad conservation and management objectives. The plan provides guidance and direction to help set priorities statewide, and establishes general policies, goals and objectives, on a statewide scale. Individual EMU documents address issues specific to the units, establish population objectives and future management direction.

The 2018 Elk Hunting DSED sets forth the findings of the Commission, based on recommendations from the Department, and the Commission's proposal for regulatory changes.

TRIBAL COORDINATION

The Department is committed to developing and maintaining an effective, positive and cooperative relationship with California federally recognized Tribes (Tribes) regarding elk management. In order to achieve the goals regarding California's elk populations, innovative management actions and collaboration will be required, and guidance from a statewide elk management plan (management plan) is necessary to help mediate competing and conflicting interests and assure the conservation, protection, restoration, enhancement and reestablishment of California's elk populations and habitat. This is critical to providing cultural, scientific, educational, recreational, aesthetic and economic benefits for present and future generations of Californians.

A letter to Tribal Representatives on November 7, 2018 provided notification of the Department's proposal to amend hunting regulations for elk pursuant to the California Environmental Quality Act (CEQA), Public Resources Code Section 21080.3.1. The letter described opportunities to provide input to the proposed regulations through consultation pursuant to Public Resources Code sections 21080.3.1 and 21030.3.2, or during the public comment period for release of this Draft Supplemental Environmental Document.

AREAS OF CONTROVERSY

A Notice of Preparation (NOP) for the proposed project was prepared and circulated on November 13, 2018. The Department presented information on potential changes to elk hunting regulations at the September 20, 2018 Wildlife Resources Committee (WRC) meeting held in Sacramento. One scoping meeting, held from 12:00 P.M. to 1:00 P.M. on Friday November 30, 2018 was also conducted at the Department's Wildlife Branch located at 1812 9th Street, Sacramento CA 95811.

The WRC meeting provided information to the Committee, public and Commission staff about potential changes being considered and evaluated. The scoping meeting solicited input from the public and interested public agencies regarding the nature and sc*ope of the environmental impacts to be addressed in the DSED. At the beginning of

each meeting, staff presented an overview of the existing program, the objectives of the proposed project, the legal background leading to this DSED, and the CEQA process generally. During the scoping meeting, participants also were encouraged to submit written comments, or to submit additional comments by mail or email before close of the comment period on December 14, 2018. Three members of the public attended the meeting. No areas of controversy regarding the proposed project were identified at the meeting.

Attendees:

Name	**Affiliation**	**Email**
Victoria Barr	CDFW	Victoria.barr@wildlife.ca.gov
Brad Burkholder	CDFW	Brad.burkholder@wildlife.ca.gov
Nick Villa	CRPA	nvilla@CRPA.ORG
Joe Hobbs	CDFW	Joe.hobbs@wildlife.ca.gov
Rose Sanchez	CSUS	rosesanchez@csus.edu
Ari Cornman	FGC	ari.cornman@fgc.ca.gov
Jessica Whalen	None	jnw179@humboldt.edu
Jon Fischer	CDFW	Jon.fischer@wildlife.ca.gov
Regina Vu	CDFW	Regina.vu@wildlife.ca.gov
Julie Garcia	CDFW	Julie.garcia@wildlife.ca.gov
Andrew Trausch	CDFW	Andrew.trausch@wildlife.ca.gov

Oral Comments

Nick Villa requested more junior only elk hunts. No other comments were received during the scoping meeting.

Written Comments Received During 30-Day Comment Period

In total, three emails and three letters were received from six distinct individuals during the scoping process. Individual letters or emails often contained more than one scoping-related comment; these have been separated out and grouped accordingly.

1) Two emails requested completion of the statewide elk management plan before changes to the current elk hunting program were implemented.
2) One email requested: to please provide to the requestor as well as the public scientific research that supports the Department's proposal to kill more elk is biologically sound.
3) One email stated: a majority of elk tags should be awarded through random draw instead of using preference points; lack of hunter recruitment and retention is one of many factors that will negatively impact conservation efforts in the future; a lack of opportunity is the leading cause of lack of hunter retention; and I am not sure what it would take to markedly improve the number of elk in California, but

whatever habitat work or predator control that can be done to increase elk numbers should be taken into consideration and made a top priority.

4) One letter outlined the CEQA requirements the Department needs to comply with.
5) One email stated: Tribal hunting should be the first and highest priority for existing hunting tags; Separate the Northwestern Elk Zone into two elk zones, Del Norte County and Humboldt County; and Roosevelt elk in the Northwest, CA Hunt Zone are genetically pure or unique They also requested:
    a) Present in detail, all elk population data collected to date and used as a basis for any proposed increase in hunting tags.
    b) Present all data showing how many elk are actually killed each year in each program including PLM and SHARE, Tribal hunts, and including poached elk (e.g. recent 2018 poaching in Redwood National & State Parks; 2018 apprehended poachers in Gilbert Creek area) and road kill. Please show respective locations on a map, or at least break out by County and general areas within counties.
    c) We request improved transparency throughout the process. Proposed numbers of tags and categories for all hunts: General, SHARE, PLM, Apprentice, Tribal, etc. should easily accessible such that a given agency, region or county can grasp and analyze the impacts to their region, county or neighborhood. These proposed quotas should be locally published well before the Commissioners' meeting dates so communities have a greater opportunity to voice their support or concerns.
    d) Indicate which elk population data are based on actual field counts, surveys and other methods involving actual sighting or handling of the elk by authorized personnel -- and which population data are projected from field data by mathematical formulas and other methods in use by the Humboldt State University (HSU) /CDFW team (and/or other experts consulted by this team).
    e) Explain clearly which of these methods for projecting elk population numbers are being used; where else and by whom these methods are in use, and to what extent these projection methods have been published and peer-reviewed.
    f) Note if any portion of the population counts/data is based directly on reports/counts from the public (or local businesses or ranches etc.).
    g) Chart the progression or changes in estimated elk population numbers and/or databased population numbers over the last 10 years, and over the last 150 years.
    h) Explain how proposed hunting tag increases will fulfill the existing or draft Elk Management Plan population goals for this region.
    i) Discuss how elk are significantly impacted by recent fires in surrounding areas of Southern Oregon and Northern California, and how this combined with any proposed increased hunting pressure impacts the elk in the Northwestern CA Hunt Zone.

j) We should compensate by allowing elk to increase their numbers and find refuge in nearby areas such as ours, to compensate for losses in elk or elk habitat.
k) Explain all reason(s) including biological justification for the proposed increase in elk tags when the HSU/CDFW data gathering and studies are not complete, have not been published, released, or peer-reviewed.
l) CDFW is proposing for the 2018 Elk Tag Allocation adjustments within the quota ranges allowed under the old outdated elk management plan, a plan not supported by scientific evidence.
m) Show how the proposed increase in tags is spread over the categories of General Hunt; PLM; SHARE, and the allocation for Tribal Hunts/Tags. Please show respective locations on a map, or at least break out by County and general areas within counties.

Note: No comments were received that pertained directly to Aesthetics, Agriculture and Forestry Resources, Air Quality, Cultural Resources, Geology/Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use/Planning, Mineral Resources, Noise, Population/Housing, Public Services, Recreation, Transportation/Traffic, Tribal Resources, or Utilities/Service Systems.

RESOURCE AREAS ANALYZED IN THIS DOCUMENT

This DSED analyzes the potential for significant impacts to Biological Resources and Recreation, as well as Cumulative Impacts. After using an initial study (Appendix 1), in combination with the comments received during the scoping period, to evaluate the potential environmental impacts of the project, the other resource areas were eliminated based on the Commission's determination that there was no potential for significant impact in those areas.

ISSUES TO BE RESOLVED

As provided by existing law, the Commission is the decision-making body (lead agency) considering the proposed project, while the Department has responsibility for management activities, such as hunting, translocating elk to suitable historic range, and preparing management plans. The primary issue for the Commission to resolve is whether to change elk hunting regulations as an element of elk management. If such changes are authorized, the Commission will specify the areas, seasons, methods of take, bag and possession limit, number of elk to be taken, and other appropriate special conditions.

FUNCTIONAL EQUIVALENCY

The California Environmental Quality Act (CEQA) requires all public agencies in the State to evaluate the environmental impacts of projects they approve, including

regulations, which may have a potential to significantly affect the environment. The Department, on behalf of the Commission has prepared this DSED, which is the functional equivalent of a Supplemental Draft Environmental Impact Report (as discussed in Public Resources Code section 21166). The DSED provides the Commission, other agencies, and the general public with an objective assessment of the potential new significant or substantially more severe environmental impacts than were previously disclosed in the 2010 Environmental Document effects.

Generally, the Commission's CEQA review of proposed project adopting a regulatory change is conducted in accordance with the Commission's certified regulatory program (CRP) approved by the Secretary for the California Resources Agency pursuant to Public Resources Code section 21080.5 (See generally CCR Title 14, sections 781.5, and 15251(b)). The 2010 Environmental Document fell under the Commission's CRP. Because Public Resources Code section 21166 does not fall within the limited exception for CRPs provided by section 21080.5, the Commission has prepared this DSED and conducted related environmental review of the proposed program in accordance with CEQA generally, also following the rulemaking process for regulations as set forth in the Commission's CRP and the Administrative Procedure Act (Government Code Section 11340 et seq.).

In addition, pursuant to Section 15087 of the CEQA Guidelines, this DSED is available for public review for 45 days. During the review period, the public is encouraged to provide written comments regarding the environmental document to the Department of Fish and Wildlife, Wildlife Branch, 1812 9th Street, Sacramento, California 95811. Comments must be received by the Department by 5:00 p.m. on April 5, 2019.

Written and oral comments received in response to the DSED will be addressed in a Response to Comments document, which, together with the DSED, will constitute the Final Supplemental Environmental Document. In addition, the Commission will consider the comments received pursuant to the Administrative Procedure Act addressing the proposed regulations. The rulemaking process under the Administrative Procedure Act to promulgate regulations is running concurrently with this environmental review pursuant to CEQA. Once completed, the Final Supplemental Environmental Document will inform the Commission's exercise of discretion as lead agency under CEQA in deciding whether or how to approve the proposed project as described in this document and the proposed regulations.

CHAPTER 2. THE PROPOSED ACTION

The proposed project being considered consists of the following modification to existing elk hunting regulations.

1. Increase the Tag Range in the Northwestern Elk Zone

In order to maintain hunting quality in accordance with management goals and objectives, it is periodically necessary to adjust quotas in response to dynamic environmental and biological conditions. This proposed project adjusts the elk tag range (Appendix 2) to account for fluctuations in population numbers, increased property damage, and hunting pressure.

The increase in tags will allow the Department to distribute hunting pressure to address landowner concerns over elk damage and increase opportunity while providing a biologically appropriate harvest within the Northwestern elk zone. Bull (0-28), antlerless (0-34), and either-sex (0-3) tags would be available to the public during the Northwestern elk hunt and through the SHARE Program.

Elk Pop (Smith and Updike 1987) is a microcomputer-based model developed by the Department for the purpose of analyzing harvest alternatives. Elk Pop was used to assess effects of the proposed project (and project alternatives) on the specific Roosevelt elk herd where increased tags are proposed. The model allows the user to vary carrying capacity to reflect real-world changes in habitat. Population age and sex ratios (observed and estimated) are primary inputs to the model. Elk Pop allows analysis of multiple harvest alternatives simultaneously and is easily adapted to most herd situations.

Elk Pop utilizes data on age and sex composition of the herd, maximum calf survival, estimated population numbers, nonhunting mortality, and hunting mortality. Age and sex composition and maximum calf survival figures used in the model are based on observed and estimated rates. Population level and nonhunting mortality rates were estimated. Estimates of nonhunting mortality rates were considered valid representations of actual nonhunting mortality rates when the model predicted the observed herd composition ratios for 10 consecutive years. Effects of various harvest scenarios were then predicted on the basis of composition ratios and estimated nonhunting mortality rates. The computer model runs for various harvest scenarios (proposed project and the alternatives) for the Northwestern elk zone can be found in Appendix 3.

2. Changes in tag quotas for other hunting zones in the state

Proposed changes to tag quotas in other hunting zones in the state fall within the tag quota ranges that were analyzed within the 2010 Environmental Document. The analysis in this DSED focuses on any new significant or substantially more severe

environmental effects from increasing the tag quota ranges in the Northwestern Elk Zone. There are no anticipated significant or substantially more severe environmental effects for the other hunting zones than were previously evaluated in the 2010 document.

BACKGROUND AND EXISTING CONDITIONS

THE MANAGEMENT OF ELK IN CALIFORNIA

There are three subspecies of elk in California: Roosevelt, Rocky Mountain, and tule elk. Roosevelt elk occupied the Cascade and Coast mountain ranges as far south as San Francisco (Harper et al. 1967), and eastward at least to Mount Shasta (Murie 1951). Tule elk were distributed throughout the Central, Sacramento and San Joaquin valleys and the grasslands and woodlands of central California's Coast Range (McCullough 1969). Although there appears to be disagreement regarding their subspecific status, both Murie (1951) and McCullough (1969) included portions of Shasta, Siskiyou and Modoc counties in northeastern California within the historical range of Rocky Mountain elk. Further clarification of the historical and current subspecific status of elk in northeastern California is unlikely because of the translocation of Rocky Mountain elk to the Pit River area in the early 1900s. However, predictions of genetic flow across the landscape supported by the journal entries of early American explorers suggest that elk have been endemic to northeastern California for thousands of years. Locations where historical specimens of Rocky Mountain elk have been recovered have helped scientists map the probable routes taken by these highly mobile ungulates as they populated North America (McCullough 1969).

Because of their large body size and the availability of smaller prey, it is unlikely that Native Americans had a significant impact on elk populations in California. Early explorers also had little direct impact on elk populations. Apparently they preferred domestic livestock to elk (McCullough 1969). However, these early explorers were responsible for the introduction of exotic annual grasses and domestic livestock, both of which had long-term, deleterious impacts on California's elk populations. Livestock competed directly with elk for forage and contributed to the conversion of the native perennial grasslands to annual grasslands, which resulted in the loss of important forage plants used by elk during the summer and fall months.

Historical Perspective of Roosevelt Elk Management

Although once widely distributed throughout northern California, by the late 1800s, Roosevelt elk were extirpated throughout much of their historic California range. Barnes (1925a, 1925b) reported that by 1925, Roosevelt elk range in California was reduced to one small area in Humboldt and Del Norte counties. Mining, logging, agriculture, and market shooting were factors that contributed to the decimation of Roosevelt elk in much of California. Because of their large body size and herding

behavior, elk were vulnerable to market shooting. Harper et al. (1967) discussed the historical distribution of Roosevelt elk in California and reported that by 1967 the population was increasing in size and in no danger of extinction.

Based on the current distribution of Roosevelt elk in California (Appendix 4), population growth and range expansion has continued since 1967. Through U.S. Forest Service and Bureau of Land Management district planning, habitat management efforts have resulted in significant Roosevelt elk population increases during the 20th century. Roosevelt elk herds in California are now healthy and viable. Populations of Roosevelt elk currently exist in the coastal areas of Mendocino, Humboldt, and Del Norte counties, in addition to the Cascade and Klamath mountain ranges in Siskiyou and Trinity counties. Some of these populations were established when the Department (in cooperation with other State and Federal agencies) relocated elk to suitable historic range. Other populations were established when elk moved into California from Oregon. Additionally, new populations have become established through the dispersal of elk from existing populations to adjacent suitable areas. The Department currently estimates the statewide Roosevelt elk population at approximately 5,700 individuals. This estimate is based on field observations, and professional judgment and experience obtained in studying elk throughout California. The Department has determined this estimate of total population size is reasonable.

Roosevelt elk use forested habitat types, where they are often impossible to see from a helicopter because of the dense forest canopy. For this reason, helicopter-assisted capturing of Roosevelt elk is generally not effective in California. Nevertheless, successful Roosevelt elk translocations have occurred when large groups have been captured in Redwood National Park or on winter range in Oregon. Since 1985, the Department has translocated more than 280 Roosevelt elk to reestablish populations in portions of southern Humboldt, Mendocino, Siskiyou, and Trinity counties.

Existing conditions regarding elk hunting

Regulated public hunting for Roosevelt elk has occurred annually in California since 1986, whereas annual hunting for Rocky Mountain elk began in 1987. Public tule elk hunting has been authorized by the Commission annually since 1989. Additional public hunts for Roosevelt, Rocky Mountain and tule elk have been established subsequent to 1986, and annual elk hunting began within portions of the Northwestern Unit in 1993. Appendix 5 lists the verbatim for the current elk hunting regulations in California.

PLM Hunts (Section 601, Title 14, CCR)

The PLM Program was authorized by the Legislature to protect and improve wildlife habitat by encouraging private landowners to manage their property to benefit fish and wildlife. Economic incentives are provided to landowners through biologically sound yet flexible seasons for game species, resulting in high-quality hunting opportunities which may be marketed by the landowner in the form of fee hunting and other forms of

recreation. Section 601, Title 14, CCR, contains regulations adopted by the Commission pertaining to the program, and sections 3400-3409, FGC, contain the subject statutes.

Landowners have the right to charge access fees for hunting, fishing, and other recreation on their property. The Department carefully reviews each plan to ensure that required habitat improvement efforts benefit many species of wildlife and that harvest strategies comply with accepted goals and objectives for management of the game species involved. The PLM Program further allows the Commission to authorize hunting and fishing seasons and bag limits specific to licensed PLM areas pursuant to approved management plans.

The PLM Program currently is an element of the Department's elk management program. During 2018, nine landowners offered opportunities to hunt Roosevelt elk through the PLM Program in Del Norte and Humboldt counties. The proposed project does not involve increasing elk tags in the PLM Program (Appendix 6).

Cooperative Elk Hunting Area hunts (Section 555, Title 14, CCR)

To encourage protection and enhancement of elk habitat and provide eligible landowners an opportunity for limited elk hunting on their lands, the department may establish cooperative elk hunting areas and issue license tags to allow the take of elk (Appendix 7 - Section 555, Title 14, CCR). In 2018, three Cooperative Elk Hunting Area elk tags were issued in the Northwestern elk zone.

POLICY CONSIDERATIONS

The Legislature formulates laws and policies regulating the management of fish and wildlife in California. The general wildlife conservation policy of the State is to encourage the conservation and maintenance of wildlife resources under the jurisdiction and influence of the State (Section 1801, FGC). The policy includes several objectives, as follows:

1. To provide for the beneficial use and enjoyment of wildlife by all citizens of the State;
2. To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to man;
3. To provide for aesthetic, educational, and non-appropriative uses of the various wildlife species;
4. To maintain diversified recreational uses of wildlife, including hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with the maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience;
5. To provide for economic contributions to the citizens of the State through the recognition that wildlife is a renewable resource of the land by which

economic return can accrue to the citizens of the State, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resource;

6. To alleviate economic losses or public health and safety problems caused by wildlife; and
7. To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the above-stated objectives.

GLOBAL CLIMATE CHANGE

Climate changes caused by increasing atmospheric concentrations of greenhouse gases are expected to result in marked changes in climate throughout the world (deVos, and McKinney, 2007). Although many wildlife habitats in North America have become progressively warmer and drier in the last 12,000 years, the greatest rate of change has occurred during the last 150 years (Fredrickson et al. 1998). Predicted changes due to continued warming include increased frequency and severity of wildfires, increased frequency of extreme weather events, regional variation in precipitation, northward and upward shifts in vegetative communities, and replacements of biotic communities. These changes are expected to affect abundance, distribution, and structure of animal and vegetative communities.

Local and specific regional changes in climate and associated changes in vegetative communities will be the determining factors regarding the distribution and abundance of elk in California. Although research specific to elk responses to climate change is limited, what information does exist indicates that both adverse and beneficial effects - depending on a variety of local/regional factors such as latitude, elevation, topography, and aspect – can be expected to result. For example, in the Rocky Mountain National Park where snow accumulation currently limits elk winter range, computer simulations suggest a reduction in future snow accumulations of up to 25-40%. An expansion of winter range would serve to increase over-winter survival and recruitment of juveniles into the adult population, leading to an increase of the overall elk population in that area (Hobbs et al. 2006). Conversely, research in Banff National Park, Canada indicates climate change will result in colder winter temperatures, increased snowfall, and a higher frequency of winter storms (Hebblewhite 2005). These factors would result in a decrease in over-winter survival and recruitment, leading to an overall reduction of the elk population for that area.

Hunting seasons and tag quotas are proposed to the Commission who has the authority for adopting regulations on an annual basis. These seasons and quotas are based on annual population and harvest data, annual population model results, and area-specific population/harvest objectives. Although the impact of climate change on California's elk population is difficult to predict and warrants continued study, the Department and the Commission have the ability to quickly respond to population fluctuations (positive or negative) by increasing or decreasing hunter opportunity in accordance with current and

future management objectives for this species. However, reducing one mortality factor (sport hunting) will not alone mitigate for impacts associated with global climate change; the ability to manage and provide adequate amounts of required habitats is the ultimate deciding factor in wildlife populations.

POTENTIAL FOR SIGNIFICANT EFFECTS

The Commission has determined the proposed project will not have any long-term significant impact on the environment. The analysis included here and discussed below addresses the potential for significant effects on the gene pool, impacts on social structure, effects on habitat, effects on recreational opportunities, effects on other wildlife species, effects on public safety, growth inducing impacts, short-term uses and long term productivity, significant irreversible environmental changes, welfare to the individual animal, and cumulative impacts. Although not a resource category where CEQA requires analysis, for informational value the Commission has also analyzed the potential for effects on economics from the proposed project. Each of these areas are discussed in more detail below.

The proposed project allows an increase in already limited public hunting of Roosevelt elk in portions of Del Norte and Humboldt counties. In 2018, 88 elk tags were issued in Del Norte and Humboldt through the General Draw, PLM, SHARE and the Cooperative Elk Hunting Program. Table 2 shows the 2018 harvest including PLM, SHARE, and Cooperative Elk Hunting. The proposed project will result in increasing the total tags to allow removal of up to 108 Roosevelt elk.

Table 2. 2018 Northwestern Elk Zone Total Tags and Reported Harvest (Includes General, SHARE, Cooperative, and PLM)

2018 Elk Tags Issued					
	Issued			**Harvested**	
	Bull	**Antlerless**	**Either-sex**	**Bull**	**Antlerless**
General	15	0	3	18	0
PLM	21	19	0	19	16
SHARE	5	22	0	5	19
Cooperative	3	0	0	3	0
Totals	**44**	**41**	**3**	**45**	**35**

Elk hunting will result in the death of individual animals. The removal of individual animals from selected herds, which are relatively large and healthy, will not significantly reduce herd size on a long-term basis. Production and survival of young animals within each herd will replace the animals removed by hunting (Fowler 1985, Racine et al. 1988). Analysis of current levels of take is contained in the 2010 Environmental Document, and found to have no significant impact for all levels of take within the analyzed quota range. Since the changes proposed in this project will only increase

public elk hunting in one of the State's elk hunt zones, removal of individuals will have little influence on the statewide elk population. Therefore, the proposed action of increasing the tag quotas by 20 removing no more than approximately 68 elk by public hunting (general, SHARE, and Cooperative hunts) and 40 elk through the PLM Program will not have a significant adverse impact on either local or statewide elk populations. The Department does not anticipate issuing up to the maximum number of tags in most hunt zones but the Commission has assumed the maximum level of take in its analysis of the potential impact under the proposed project.

As discussed in more detail below, the Commission has concluded the proposed project will not have a significant adverse effect on the environment. No mitigation measures for the proposed project or alternatives are necessary.

Methodology

A computer model which simulates herd performance (Smith and Updike 1987) was used to assess effects of the proposed action and alternatives (Appendix 3) on the elk hunt zones where a tag change is proposed.

A variety of natural and human-induced factors combine to affect the status of a wildlife population. Natural factors affecting elk populations include, but are not limited to, such things as predation, starvation, disease, and parasitism. Environmental factors (e.g., precipitation) can affect food quantity and quality, thereby affecting elk populations. Theoretically, competition among members of the same species and between different species (e.g., deer, elk) also can affect elk populations. Catastrophic events (e.g., wildfires) can affect localized populations on a short-term basis. Human-induced factors, such as urbanization and agricultural development, also affect elk populations. Hunting can affect a population in various ways, depending on the intensity and level of harvest.

Modern wildlife management uses models to analyze, understand, and predict the outcomes and complex interactions of the natural environment. Like many other technical fields that affect society, such as chemical engineering, aerospace technology, and climatology, the science of wildlife management has found that the use of models is invaluable for predicting the effects of human-induced and natural events on wildlife and their habitat.

Population models can range from simple word models (the statement "elk are born, grow up, reproduce and die" is a grossly simple word model of a population process) to highly complex and sophisticated mathematical abstractions. Some models are empirical (that is, based on observed data), and others are theoretical. Many models are useful in helping to frame conceptualizations of population processes, resulting in testable predictions about the subject at hand. Nevertheless, the goal of a model is to aid in analyzing known facts and relationships that would be too cumbersome or time consuming to analyze manually. Some of these models describe specific systems in a

very detailed way, and others deal with general questions in a relatively abstract fashion. All share the common purpose of helping to construct a broad framework within which to assemble an otherwise complex mass of field and laboratory observations. Though we often think of models in terms of equations and computers, they can be defined more generally as any physical or abstract concepts of the structure and function of "real systems" or natural occurrences.

Key in the development and use of any model is its reliability. The models used in this document have been developed based on field observation, published literature, and/or expert opinion. They have been tested against known results and are consistent.

Compensatory Response

The Stock-Recruitment model (Ricker 1954, McCullough 1984) is useful for conceptualizing compensatory mechanisms and density-dependent responses that are believed to occur in wildlife populations. This model shows population responses to changes in density in terms of net recruitment (i.e., the survival of calves). It has the advantage of not requiring assumptions about internal birth and death rates, and it can be empirical.

The fundamental assumption of the Stock-Recruitment model is that calf survival is a function of population density and decreases as density increases (the converse is also true). There is a large body of evidence indicating that this is the case among populations of elk (McCullough 1979, Clutton-Brock et al. 1982). Thus, density can be measured in either absolute or relative terms, and with net recruitment one can begin to build a model that will allow predictions of the population's response to changes in density.

At a low population size, even with a high recruitment rate, few new individuals enter the population, but their survival is higher. As population size increases, so does the number of recruits, up to a certain level. The rate of recruitment decreases as a result of reduced survival of young. The degree of elk harvest necessary to achieve maximum sustained yield (MSY) can be expected to result in low population densities. Objectives to maximize residual population size and MSY are necessarily mutually exclusive. This has important implications for harvest management, as harvesting to achieve MSY suppresses the total population below its maximum potential. Spring population size (after calves are born) is thus below the carrying capacity of the range (McCullough 1984).

At high densities, the pre-mortality population will temporarily exceed carrying capacity (if an area is at carrying capacity – few of California’s elk populations are believed to be at carrying capacity), resulting in possible habitat damage. When population sizes are at or near the range carrying capacity, yield will be low (proportionately), because recruitment of calves is low relative to herds at lower density. In such cases, increases

in harvest result in increased net recruitment, and the population will stabilize at a new population size if the new harvest level remains fixed (McCullough 1984).

Elk Pop (Smith and Updike 1987) is a microcomputer-based model which was developed by the Department for the purpose of analyzing harvest alternatives. Elk Pop was used to assess effects of the proposed project (and project alternatives) on the specific Roosevelt elk herds where hunting is proposed. The model allows the user to vary carrying capacity to reflect real-world changes in habitat capability. Observed population age and sex ratios are primary input to the model. Elk Pop allows analysis of multiple harvest alternatives simultaneously and is easily adapted to most herd situations.

Elk Pop utilizes data on age and sex composition of the herd, maximum calf survival, estimated population numbers, nonhunting mortality, and hunting mortality. Age and sex composition and maximum calf survival figures used in the model are based on actual observed rates. Population level and nonhunting mortality rates were estimated. Estimates of nonhunting mortality rates were considered valid representations of actual nonhunting mortality rates when the model predicted the observed herd composition ratios for 10 consecutive years. Effects of various harvest scenarios were then predicted on the basis of observed composition ratios and estimated nonhunting mortality rates. The computer model runs for various harvest scenarios (proposed project and the alternatives) for each elk herd where hunting is proposed can be found in Appendix 3.

IMPACTS OF HUNTING ON ELK POPULATIONS

Elk hunting will result in the death of individual animals. The removal of individual animals from selected herds which are relatively large and healthy will not significantly reduce herd size on a long-term basis. Production and survival of young animals within each herd will replace the animals removed by hunting (Fowler 1985, Racine et al. 1988). Analysis of current levels of take, as well as the proposed levels of take for hunt zones statewide is contained in the 2010 Environmental Document, and found to have no significant impact for all levels of take within the analyzed quota range. Since the changes proposed in this project will only increase public elk hunting in one of the State's elk hunt zones, removal of individuals will have little influence on the statewide elk population. Therefore, the proposed action of increasing the tag quotas by 20 (removing no more than approximately 68 elk by public hunting (general, SHARE, and Cooperative hunts) and removing no more than 40 elk through the PLM Program will not have a significant adverse impact on either local or statewide elk populations.

Numbers of elk harvested by hunters in the PLM, public and Cooperative Elk Hunting programs in Del Norte and Humboldt counties during 2018 are reported in Table 2.

Northwestern Roosevelt Elk Herds (Del Norte and Humboldt)

The proposed project for the Northwestern zone could result in an increase in 20 elk being harvested (for a maximum of 108) including, General, PLM, SHARE, and Cooperative elk tags. Computer simulation runs of this harvest scenario predict population numbers would increase (Appendix 3), based on the current conservative population estimate of 1,600 elk. The bull-to-cow ratio would remain stable, while the calf-to-cow ratio would increase.

The Commission, based on information provided by the Department, does not anticipate this proposed harvest scenario will result in adverse impacts to the Northwestern Roosevelt elk herd. Since 2016, the Department has been working towards implementation of systematic elk surveys in this zone. While development and implementation of those surveys to improve population assessments are ongoing, initial counts suggest a healthy and growing population. Direct counts within a portion of the zone from 2016 to 2017 resulted in a minimum count of 990 elk in 22 distinct groups (CDFW 2018). Over the past two years, efforts looking at movements of GPS collared elk, composition counts, and calf survival suggest a ten percent increase in the total number of elk in portions of the Northwestern elk hunt zone. In addition, the calf:cow ratio has been stable at 32 and 34 calves to 100 cows, and the bull:cow ratio has increased from 21 to 31 bulls to 100 cows. Within this portion of the zone, consisting of primarily private lands where conflicts and property damage continue to increase, the Department collared 58 calves from 2017 to 2018 to investigate calf survival. Initial analysis suggests juvenile survival was high, and when combined with the increase in observed count data, and the high calf:cow ratio, it indicates a growing population.

Allocation of tags through the SHARE program to focus recreational harvest in certain areas can help alleviate landowner conflicts, and the harvest in recent years has occurred primarily in these areas of the hunt zone. Increasing population trends suggest the population can sustain the proposed level of hunting and continue to grow. Through landowner cooperation, the SHARE program results in harvest totaling up to nearly half the total general tags available. As currently designed, the SHARE program allows focused elk harvest restricted to specific ranches or farms rather than across the entire hunt zone.

To simulate effects of the proposed quota increase for Northwestern California, the Department, using the minimum count of 990 from only a portion of the entire zone, conservatively assumes the current population size is 1,600 elk and carrying capacity is estimated at 1,760 elk across the entire zone. Elk populations are growing and expanding within the unit and both current population size and biological carrying capacity are likely much larger than these respective estimates.

Other Hunting Zones Statewide

The levels of take for all other hunting zones statewide are analyzed in the 2010 Environmental Document. The Commission finds there are no new significant or substantially more severe environmental effects than were previously evaluated in that document, and were determined to be insignificant.

IMPACTS ON THE GENE POOL

The Department estimates there are a minimum of 5,700 Roosevelt elk distributed throughout several areas of northern California. The proposed project would allow an increased statewide take of 20 Roosevelt elk (for total statewide take of approximately 318 Roosevelt elk). Assuming a condition where all tagholders are successful, this would result in a short-term reduction of approximately six percent of the statewide Roosevelt elk population. This does not constitute a significant impact to the statewide gene pool and is well within the population's ability to maintain or increase size over the long term.

It is expected that not more than 255 elk (Rocky Mountain, Roosevelt, and Tule elk combined) will be taken by hunters under the PLM Program during 2019. This constitutes just over two percent of the statewide elk population and is well within the population's ability to maintain or increase size over the long term. Any population reduction from the PLM Program would be short term and would not constitute a significant impact to the gene pool.

The ability of elk populations to experience a given level of hunting mortality without a reduction in health or viability is described by Savidge and Ziesenis (1980) as sustained-yield management. Sustained-yield management is closely related to the compensatory responses in reproduction discussed previously.

Elk hunting in California currently involves herds at separate locations in the State that are at or above herd management objectives. Because the proposed project will not significantly reduce statewide population levels, the Commission concludes that there will not be an adverse impact to the gene pool, either locally or statewide.

IMPACTS ON SOCIAL STRUCTURE

Elk are gregarious and tend to form groups or aggregates. Elk do not mate for life. Males do not invest time or energy in the care of young, but generally form separate bachelor groups. Except for a short breeding period, most adult males generally remain separate from cow-calf groups during the remainder of the year. Therefore, removal of bulls by hunting will have a minimal effect on the social structure of the populations, provided that minimum herd objective bull ratios are maintained. Proposed harvest levels for each herd have been established to maintain or exceed minimum herd

objective bull ratios and to provide for genetic variability, fertilization of cows, and public viewing opportunities of bull elk.

During the nonbreeding period, cow-calf groups generally contain few, if any, adult bulls. However, immature bulls are tolerated in cow-calf groups (Geist 1982). Newborn calves are initially completely dependent upon their dams but quickly adjust to the cow-calf group and form nursery groups within the larger group. Nursery groups briefly fixate and respond to a succession of adult females (Geist 1982). During the first 2.5 months of life, calves nurse extensively (Bubenik 1982). Nursing declines by August for most elk in California, when the proposed project would begin in some areas. There is no indication that calves orphaned at this time have been severely impacted; at Grizzly Island, tule elk calves orphaned in August remained within the social structure of the groups.

Generally, the proposed project has the potential to increase the ratio and number of calves in the hunted elk populations. The increase in calf survival results in a shift of age structure of the elk population from older to prime-age individuals (five to seven years). These prime-age individuals tend to provide higher recruitment rates (calf survival) for the population (Hines et al. 1985). Historical data (Fowler 1985, Botti and Koch 1988, Racine et al. 1988), computer simulation modeling (Smith and Updike 1987), and information from the literature (Taber et al. 1982) indicate that the removal of elk from the population (due to hunting, trapping for reintroduction, or high winter mortality) in one year results in a larger number of calves recruited into the population the following year.

Computer simulation modeling of the populations proposed to be hunted indicates that the removal of elk from these populations by hunting (in addition to nonhunting mortalities) will result in an increased survival of calves born the following spring for most areas (Appendix 3). As an example, in August of 1980 the observed calf ratio for the Bishop subherd was 20 calves per 100 cows. In December of 1980, the Department relocated 75 elk from the Bishop subherd. The following August (1981), the observed calf ratio was 43 calves per 100 cows. This type of increased calf survival (recruitment) is expected and has been observed numerous times in the Owens Valley (Racine et al. 1988) and at Grizzly Island (Botti and Koch 1988).

Most western states establish a goal for a post hunt ratio of at least 20 bulls per 100 cows (the proportion of bulls to cows in the population). Some states have goals as low as six bulls per 100 cows, while other states have goals of 25 bulls per 100 cows in trophy hunt areas (Mohler and Toweill 1982). The Department's management objective for most hunted populations is to maintain at least 25 bulls per 100 cows (the objective ratio for the Northwestern Unit is 15 bulls per 100 cows).

Most tag quotas provide for take of both male and female elk. Achieving and/or maintaining herd objective bull-to-cow ratios is accomplished most readily by harvest of both sexes, because harvesting only male elk can skew the sex ratio towards females;

and, conversely, harvesting only female elk can result in a population skewed towards males (Mohler and Toweill 1982).

Based on the computer simulation analysis of expected harvest rates, the post-hunt bull-to-cow ratios are expected to increase and/or remain above the Department's management objective. Additionally, computer simulation modeling indicates that the proposed take is within sustained-yield management levels. That is, under the proposed harvest levels, the population will be able to maintain itself over the long term at existing or higher population levels.

As discussed earlier, female pregnancy rates and calf survival are inversely related to the density of the elk herd in relationship to the condition of the available habitat. Management that provides for frequent reductions in female and young of the year elk in areas where elk have exceeded their herd size objective encourages age structure dominated by reproductively successful females (Hines et al. 1985).

Based on computer simulation modeling, the proposed project has the potential to increase calf survival rates for the hunted herds, resulting in improved general health of the hunted populations. Also, computer simulation modeling predicts minimal changes in bull-to-cow ratios as a result of the proposed project; such ratios for most hunted herds are predicted to increase or remain near the minimum objective ratio. Bull-to-cow ratios are predicted to remain significantly above corresponding ratios for other western states with hunting programs. Thus, it is unlikely that adverse impacts to the social structure of hunted herds will occur as a result of the proposed project. By increasing calf-to-cow ratios, the proposed project would improve herd condition and could thus have a positive effect on herd social structure.

EFFECTS ON HABITAT

The removal an additional 20 Roosevelt elk through public hunting is not expected to significantly change elk population levels on a long term basis. If no major changes occur in the elk population levels, no major changes in elk-caused effects on habitat (e.g., elk foraging pressure on plants) would be expected. Therefore, the proposed project is not expected to have an impact on habitat in the hunt areas.

The typical technique used to hunt elk within the proposed hunt areas involves spotting animals at a distance and/or quietly approaching them on foot to within a reasonable shooting range. Hunting from a motorized vehicle is illegal. Some hunters may use horses to cover greater distances searching for elk. In any case, the relatively low intensity of hunting effort (because of the low number of elk hunters in the field) within these areas is not expected to produce major effects on habitat. The increase in tags proposed by the Commission is not expected to cause any large increase in activity, or any additional significant impacts.

Both public and private lands occur within the hunt areas. On public lands, the Department provides input to the USFS regarding actions to improve the condition of elk herds and their habitat. Further, the USFS is mandated to incorporate wildlife needs, including elk, into their planning process, as required by the National Forest Management Act. In general, current timber harvest practices on public land benefit elk by creating a diverse mosaic of early successional and mature forest habitat types. Most of the public lands proposed to be open to elk hunting within Del Norte and Humboldt counties are currently open to the public on a year-round basis. These lands also are used for other outdoor recreational activities, such as fishing, photography, hiking, hunting, bird watching and general nature viewing. Due to the large size of the hunt areas (each area is several hundred square miles in size) and existing human use levels of the hunt areas, it is unlikely that the harvest of an additional 20 elk will individually or cumulatively negatively impact the habitat in the hunt areas.

EFFECTS ON RECREATIONAL OPPORTUNITIES

Hunting Opportunities

The proposed project continues to authorize public hunting of Roosevelt elk providing opportunities to harvest up to 108 elk by hunters who will participate in this unique outdoor experience. The demand for elk hunting opportunities is extremely high in California. In 2018, 39,829 individuals applied for an opportunity to hunt elk in California. In 1988, for the first time, a nonrefundable fee of $5 was charged to apply for an elk hunt. Despite the new fee, almost 10,000 licensed hunters applied for elk license tags in 1988 with the number growing almost every year to date. The proposed project benefits the hunting public by providing hunting opportunities consistent with the State's Wildlife Conservation Policy and FGC sections 332 and 1801.

The season dates for the Northwestern elk hunts coincide, at least partially, with the B-1 and B-4 deer seasons. However, it is unlikely that deer hunters will be adversely impacted by the low number of elk hunters that may be in the field during the deer season. The Northwestern season dates will also coincide with bear season and the year round wild pig season. Due to the large areas open to hunting and the relatively short elk season, elk hunters will not affect the success or quality of experience for hunters of other species of wildlife.

Some individuals have expressed concern that the hunting regulations of other states might have adverse effects on elk hunting in California (presumably by causing an influx or exodus of hunters.) For the most part, non-resident public elk hunting opportunities on California are very limited (only up to one elk tag per year is available for non-residents to draw; non-residents may purchase one of the three fund-raising elk tags, and are eligible to purchase elk tags through the PLM Program). The Commission does not expect that the hunting regulations of other states will have an adverse effect on elk hunting in California.

Nonhunting Opportunities

Non-hunting users of the elk resource (viewing, nature study, and photography) will not be significantly impacted by the take of an additional 20 elk from the Northwestern Hunting Zone. Nor will the proposed project impair non-hunters' ability to enjoy the outdoors, the elk resource, or its habitat, due to the availability of opportunities to view elk herds in areas where hunting does not occur, such as within federal or state parks. Three of the State's 22 tule elk herds are maintained in a penned situation where no hunting is contemplated. These herds provide the public an opportunity to enjoy tule elk in their native habitat. Additionally, the proposed action does not provide hunting opportunities at Point Reyes National Seashore, which has a large population of tule elk and is accessible to the public for the enjoyment of elk and other wildlife in the area. General elk hunting seasons vary from four to 23 days. Based on hunter tag returns from 2018, elk hunters only spend, on average, four days hunting elk. This indicates that even for those hunted herds, a majority of time can be spent viewing elk without hunters in the field.

The proposed action will not impact the non-hunting public, because the number of hunters in the field at any one time (established by the quotas for each hunt), in conjunction with the areas open to hunting, will result in very low hunter density. Historically, all areas open for hunting have been open for other types of hunting (waterfowl, upland game birds, rabbit, wild pigs, black bear, etc.) during the same timeframe as the proposed elk hunts. For non-hunters concerned about being in the field during proposed elk hunts, large areas of similar habitats adjacent to or near all hunt areas may be used for non-hunting activities during the short elk hunting period.

EFFECTS ON OTHER WILDLIFE SPECIES

Although some overlap of food habits exists, competition between deer and elk has not been a documented problem in California. Nelson and Leege (1982) stated, "It would appear, therefore, that neither the elk nor the mule deer is affected seriously by the other, mainly because of differences in primary forage species and habitat choice." This also appears to be the case in California. Potential for competition between elk and deer can exist on critical winter ranges shared by the two species. However, there is no scientific evidence to indicate that removal of elk through a hunting program will adversely impact the local or statewide deer resource.

During the last few years, the potential for competition between deer and elk has received greater attention in the western states and provinces of North America. Many states and provinces have reported a decline in deer population numbers, coinciding with an increase in elk numbers. It has not been proven that elk displace deer or are a significant factor in suppressing their numbers throughout a broad geographic region. In considering the potential for competitive interaction between deer and elk, a variety of factors may be important, such as predation, climate, digestive physiology, energetics, vegetation succession, livestock, and human-related factors. Lindzey et al. (1997)

discussed these and other factors in reviewing the potential for competition between deer and elk throughout the west, and compiled an extensive list of references regarding this subject. They concluded it is appropriate to question whether the growth of elk populations has contributed to apparent deer decline, but found no consistent trends in geographic areas used sympatrically to suggest a cause-and effect relationship.

Due to their large body size, adult elk experience limited predation. Cases of lion predation on adult elk have been documented (Taber et al. 1982, Booth et al. 1988, Racine et al. 1988). Results of fall surveys have documented several confirmed lion-killed elk since 1988. However, there is no scientific evidence to indicate mountain lion predation significantly affects elk statewide in California as demonstrated by increases in elk numbers.

Coyotes, black bears, wolves, and mountain lions prey on elk and/or elk calves. It is possible, as a result of removing adult elk from elk herds, calf production will increase the following spring. This could provide additional prey for predators. Historical herd performance data collected on elk herds indicate that calf recruitment will increase after an elk removal, regardless of the existence of predators in the area (Racine et al. 1988). Based on a review of available information discussed in this document, it is reasonable to assume the proposed project will not have measurable short-term or long-term effects on other local wildlife populations, including deer, mountain lions, black bears, wolves, and coyotes.

A number of endangered, threatened or locally unique animals and plants may occur within the elk hunt areas. The Department is charged with the responsibility to determine if any hunting regulations will impact threatened or endangered species. It complies with this mandate by consulting internally and with the Commission when establishing elk hunting regulations to ensure that the implementation of the proposed project and existing hunting regulations do not affect these species. It is unlikely that adverse impacts to rare, endangered, threatened, or locally unique species associated with the proposed hunt areas will occur as a result of the proposed project. Most rare, endangered, threatened, or locally unique species associated with the hunt areas either are associated with habitats where elk hunting is not likely to occur or use these areas during a time (season) different from when the proposed project will occur. The proposed project will involve a minimal number of hunters using areas, that for the most part, are open to the public for a variety of uses, including hunting. The Department has concluded that, based on conditions of the proposed project and existing hunting regulations, differences in size, coloration, distribution, and habitat use between the listed species and elk, the proposed project will not jeopardize these species.

EFFECTS ON ECONOMICS

The proposed project will not result in changes to the environment, either directly or indirectly, which would produce significant negative environmental effects. Therefore,

no CEQA review of economic effects is necessary. However, the proposed project has the potential to result in minor economic effects on the communities where elk hunting is proposed.

The effects of the Elk hunting regulations on the local economy may involve increases in economic activity near the hunt areas, as visiting hunters purchase goods and services from local merchants. This additional spending would generate additional retail sales, business spending, and income that could in turn, contribute to employment in motels, restaurants, and retail stores.

EFFECTS ON PUBLIC SAFETY

Since 1989, the Department has received no reports of elk hunting-related casualties in California. This does not diminish the fact that people have died or been wounded while hunting other big game animals. Based on the total number of licensed hunters in California and the annual number of accidents, there is roughly a 0.00425-0.005 percent chance of being killed or wounded while hunting deer. Additionally, Department records show that no non-hunting injuries or deaths have occurred as a result of elk hunting. As with any outdoor activity, there is always a risk of injury or death. However, the probability of being injured while hunting elk is extremely low, especially in comparison to other recreational activities. This good safety record is due, in part, to the requirement that all hunters must successfully pass a hunter safety education course prior to receiving a hunting license. It is unlikely that the proposed project will result in adverse impacts to public safety.

GROWTH-INDUCING IMPACTS

There are no growth-inducing impacts associated with the proposed project. As discussed in "Effects on Economics" in this chapter, minor increases in retail sales, income, and possibly employment are anticipated in the regions where the proposed hunt areas exist. However, the small number of public tags available is unlikely to create growth-inducing impacts in a State with a total human population of over 30 million.

SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The proposed project will not affect a variety of short-term uses currently available to the public. Additionally, the proposed project will provide for public hunting opportunity without adversely affecting long-term productivity of statewide or local elk populations, based on predictions of simulation modeling.

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

No significant irreversible environmental changes are expected to occur as a result of the proposed project. The proposed harvest levels were selected to avoid adversely

impacting hunted populations and to reach or maintain herd management objectives. The proposed project is designed to avoid significant adverse impacts to other wildlife species, their habitat, and listed or locally unique species. As discussed previously, adverse impacts to economics and public uses (including safety) are not expected.

WELFARE OF THE INDIVIDUAL ANIMAL

Analysis of welfare of the individual animal was presented on page 120 (incorporated by reference, April, 2006 Final Environmental Document, SCH#2003112075, available at 1812 9th Street, Sacramento, CA 95811). The project has been designed to limit wounding through the specification of minimum performance requirements for archery equipment and firearms. It is expected that some wounding may nevertheless occur. The methods of take are not one hundred percent lethal. Lethality is largely a function of hunter skill and accuracy. The Department has evaluated the welfare of the individual animal and has specified minimum performance requirements for archery equipment and firearms in existing regulations.

CUMULATIVE IMPACTS

The proposed project provides for a specific level of public elk hunting in specified areas during 2019, and it is reasonably foreseeable that the Commission would consider and approve hunts in these areas in the future. Because of this potential, the Department modeled population performance of hunted herds for a 10-year period. Potential effects of cumulative factors identified in this section were considered with the model runs. It must be emphasized that the model runs specify the same level of harvest (expressed as a percentage of the population) each year. The statutorily mandated regulation process involves review and appropriate regulation changes based on the condition of a population. Data collected by the Department during the year following the approval or denial of the proposed project would be examined, and appropriate, biologically sound recommendations would be presented by the Department to the Commission prior to approval of any future hunt.

Section 255, FGC, identifies the steps required for the Commission to adopt, amend or repeal regulations relating to mammal hunting. This law requires that the Commission receive recommendations regarding mammal hunting regulations from Commission members, its staff, the Department, other public agencies, and the public. The process is analogous to the Commission establishing specific harvest quotas for the deer and pronghorn antelope hunting seasons. The system has worked well over time in adjusting the hunting program to maintain healthy wildlife populations.

Effects of Private Lands Wildlife Habitat Enhancement and Management (PLM) Area Program

To become licensed in the PLM Program, landowners are required to submit an application package which includes a management plan. This plan must contain, among other things, habitat enhancement goals and objectives to be accomplished over the term of the five-year license. The habitat projects outlined in the plan are directed toward improving habitat for both game and nongame species. The ultimate goal of these habitat improvement practices is to enhance or stabilize (under adverse ecological conditions) populations of various wildlife species present on the area. Once licensed, the PLM is reviewed annually by the Commission to ensure compliance with all regulations and administrative procedures.

The PLM Program has been successful as an incentive for landowners to protect and improve wildlife habitat. Habitat improvements implemented under approved management plans on licensed areas include conducting controlled burns to improve forage conditions, reducing livestock grazing to reduce competition with wildlife, protecting wildlife fawning/nesting sites and riparian areas, developing wetland/marsh areas, constructing brush piles, improving water sources, and planting forage and cover crops for wildlife. The projects directly benefit deer, elk, bear, antelope, wild pigs, waterfowl, turkeys, quail, and a wide variety of nongame wildlife, including threatened and endangered species. Habitat improvements accomplished specifically for game species (such as riparian improvement, protection, and enhancement) directly benefit hundreds (approximately 331 species in hardwood-dominated habitats) of nongame wildlife species.

The anticipated PLM harvest was modeled as part of the overall (public and PLM) harvest simulation model run (Appendix 3). As discussed previously, no adverse impacts are expected, based on the simulation model runs. The simulation models (Appendix 3) indicate previous harvest levels have been below the maximum sustainable yield. Because the expected harvest under the PLM Program is less than the maximum sustainable yield (harvest), the Department has determined that the PLM Program, together with the proposed project, will not have a significant adverse cumulative effect on elk populations in California.

Nine licensees participated in the PLM Program for elk in the Northwestern elk zone in 2018 (Appendix 6). The Department recommends issuing no more than 40 elk tags through these nine PLM properties for 2019. Previous total elk harvests under the PLM program have been below these levels (35 elk were harvested in 2018 under the PLM program in the Northwestern elk zone). Expected harvest under the PLM program is anticipated to be below the maximum PLM quota. Thus, harvest under the PLM program, either alone, or combined with the proposed public harvest, will not have a significant adverse cumulative effect on statewide or local populations of elk.

Effects of Drought

Drought cycles are part of the ecological system in California and elk are adapted to low water years. Still, multi-year droughts can reduce elk populations on a local scale. Drought conditions can impact elk in a variety of ways including: degraded habitat quality (less vegetation growth) and reduced food production (both natural and agricultural). California has a "Mediterranean climate," meaning that over the long-term, the State receives the bulk of its precipitation during the cool fall and winter months, while warm spring and summer months are generally dry. In other words, California undergoes a "summer drought" each year. However, extreme variation in precipitation occurs in the State on an annual basis. For example, the northwest coast receives a great deal of precipitation, while southern deserts receive very little precipitation. Additionally, topographic features, such as the Sierra Nevada, influence climate by creating a rain shadow, whereby most of the precipitation falls on the west side of the range, extracting most of the moisture from clouds by the time they reach the east side of the range. The amount of precipitation in California is extremely variable on a geographic basis within a year and extremely variable in any one area among years.

Throughout much of the State, stream courses, natural lakes, ponds, springs, and reservoirs were affected by the recent drought. As far as terrestrial wildlife are concerned, prolonged drought in areas with scarce water, such as in the desert and south coast ranges, may affect production and survival of young for a variety of species in future years. Droughts are cyclic long-term, and all wildlife species and their habitats in California have evolved under conditions of periodic drought (Bakker 1972, Munz and Keck 1973, Oruduff 1974, Burcham 1975, Barbour and Major 1977). Since the 1800s, California has experienced several drought cycles lasting two to five consecutive years (Department of Water Resources 2015). Because of this natural variation in water availability, vegetation communities have evolved and adapted with associated changes in soil moisture (Barbour and Major 1977). Many of California's plant communities (e.g., desert, chaparral, grassland, oak-woodland, etc.) are drought tolerant. However, drought can affect plant species. Growth and vigor of forage plants may be severely reduced during drought, due to reduced germination of annual plants, and reduced growth of shrubs and trees adapted to conserve water. Consequently, the quantity and quality of forage for herbivores is reduced during periods of drought.

While drought effects on vegetation communities can be unpredictable, some studies have been conducted. One study measured acorn production (a primary food of many wildlife species) in five oak species occurring at a site in Monterey County from 1980-89 (Koenig et al. 1991). That study determined that acorn production was highly variable among oak species from year-to-year and that climatic variables generally did not correlate with annual variation in acorn production. The study also indicated that local acorn crop failures may have detrimental effects on local populations. However, total crop failures on a community-wide basis among all species are rare, even during drought years. Similarly, acorn production data from a four-year period in Tehama County (Barrett, unpublished data) indicate that annual production was approximately

60 percent, 20 percent, five percent, and 180 percent, respectively, of the mean annual crop between 1987 and 1990.

Alternatively, in vegetation communities comprised of annual plants, lack of fall germinating rains, or minimal spring rains can preclude germination of forbs and grasses, which are important sources of forage, primarily during the fall, winter, and spring. The seeds lie dormant in the soil until germinating conditions are suitable. Drought may also weaken resistance of plants to disease, fungus, and insect damage, cyclically affecting vegetation.

Hence, during drought, some plant species respond in ways that benefit wildlife (e.g., increased acorn production), while others respond in ways detrimental to wildlife (e.g., reduced grass and forb growth).

Native game mammals in California have evolved to withstand both drought and flood extremes within their ranges. Before human intervention, these ranges likely varied in response to periods of prolonged drought or wet conditions. Currently, however, remaining habitats are, to a large extent, managed and affected by humans. Water management has likely resulted in greater stability in modern wildlife populations in many cases due, in part, to the advent of water wells, sites developed to enhance water for wildlife (e.g., guzzlers), irrigation, and reservoirs. In many areas, water is more available to wildlife, regardless of drought, than it would have been prior to large-scale human development in California.

The reduced quantity of vegetative cover due to prolonged drought in some areas could affect thermal and hiding cover important to wildlife. However, such effects are not yet reflected in population data.

Significant impacts to wildlife due to drought in some areas of the State may occur if drought conditions persist for more than several years. Potential impacts include reduced habitat quality and quantity, resulting in reduced reproductive success and survival of individuals in a population. As a result, periodic drought conditions may produce short-term effects due to less available forage, but may have little, if any, long-term effects on the abundance of most species.

Effects of drought on wildlife species would be reflected in poorer physical condition of individual animals, decreased survival of individuals, declining reproduction and survival of young, and reduced population size. While fluctuations may occur annually in some areas, the large-scale effects of significant drought events could be felt statewide.

Effects of drought conditions on elk populations have been recorded in the Owens Valley and in the Cache Creek area (Fowler 1985, Booth et al. 1988, Racine et al. 1988). While drought may result in increased mortality among individuals in an elk population (primarily reduced calf survival), the proposed project is based on data collected on populations with exposure to periodic drought conditions and will not affect

viability of local populations. Records of drought prior to 1988 indicate the Grizzly Island tule elk herd was not affected (Botti and Koch 1988). Based on the above information the possibility of drought impairing the statewide tule elk population is very unlikely.

The Department's evaluation of conditions and trends of elk herds and habitats is an ongoing facet of the Department's elk management program (CDFW 2018). Information collected by the Department and other sources will inform future recommendations for elk hunting programs and other management activities, such as habitat improvement or acquisition projects. The impacts, if any, of a catastrophic event on elk populations would be addressed in carrying out any future management actions. In addition, the Commission has the regulatory authority (Section 314, FGC) to take emergency action to cancel or suspend one or more proposed elk hunts if a catastrophic event occurred which, in conjunction with a hunting program, could significantly impact the elk population. Thus, the Commission does not anticipate adverse impacts will occur as a result of drought in combination with the proposed project.

Effects of Wildfire

One aspect of prolonged drought that would affect wildlife habitat is an increased risk of wildfire due to extremely dry conditions. However, wildfire can be a problem in extremely wet years due to increased fuel loads. Consequently, it can be difficult to conclude that drought years predispose some vegetation communities to wildfire more than wet years. In forested communities, woody plant communities affected by prolonged drought may experience increased plant mortality and decreased moisture content, increasing their susceptibility to wildfire.

Catastrophic events, such as wildfire and drought, have affected elk throughout their evolution. Although effects of drought and wildfire can have an impact on local populations of elk, historical data collected by the Department (McCullough 1969, Fowler 1985, Racine et al. 1988) indicate that there is no evidence that drought, wildfires, or other catastrophic events have resulted in the extirpation of an elk population.

Wildfires are a natural occurrence in elk range. Plant species in the hunt areas have evolved with fire, and many species of plants require fire to complete their life cycle. Fire is not known to have negative long-term effects on elk populations, and considerable information indicates fire can significantly improve elk habitat (Lyon and Ward 1982). Within the Northwestern Hunt Zone, the climate is heavily marine influenced and moist, minimizing risk of wildfire which is not expected to be prevalent.

Wildfires have the potential to positively impact elk populations. Iinitially, fire may displace elk for a short time period (two to three months). However, elk often return to burned areas immediately following fire. Longer-term impacts may have significant

positive effects on local populations. For example, a wildfire may burn habitat used by elk, causing short-term loss of some forage and cover. However, elk move back into the burned areas quickly to utilize the young nutritious forage growing in the burned areas (T. Burton, Department of Fish and Wildlife, Yreka, personal communication). Also, since elk are primarily grazing animals, eating mostly grasses, fires thatburn brush and trees open areas to allow more grasses to grow, and thus benefit elk (Lyon and Ward 1982).

Based on the above information, the possibility of wildfires impairing the statewide Roosevelt, Rocky Mountain, or tule elk populations from persisting in a healthy, viable condition is very unlikely. Evaluation of elk herd and habitat conditions and trends is an ongoing element of the Department's elk management program. Information collected by the Department and other sources will be used to modify any future recommendations for hunting programs and to recommend other management activities, such as habitat improvement or acquisition projects. The impacts, if any, of a catastrophic event on elk populations would be addressed in carrying out any future management actions. In addition, the Commission has the regulatory authority (Section 314, FGC) to take emergency action to cancel or suspend elk hunting if a catastrophic event occurs which, in conjunction with a hunting program, could significantly impact the elk population. Thus, the Commission does not anticipate adverse impacts will occur as a result of wildfire in combination with the proposed project.

Effects of Disease

Historical data indicate elk are remarkably free of disease (Fowler 1985, Booth et al. 1988, Botti and Koch 1988, and Racine et al. 1988). However, Roosevelt elk tested in the Prairie Creek area of Humboldt County showed signs of heavy parasite levels and poor body condition in 1960 and 1982 (Department of Fish and Game files). The Department routinely collects blood samples from the majority of elk captured. Over the last 20 years, the Department has analyzed approximately 900 tule elk and 200 Roosevelt elk blood samples to systematically determine the prevalence of disease and assess the general health of the State's elk.

Recent concern has grown about effects of Chronic Wasting Disease (CWD) on deer and elk in North America (Williams et al., 2002). CWD is a fatal, contagious transmissible spongiform encephalopathy infecting the brains of deer and elk. It has been diagnosed within numerous states and provinces of North America. The Department began a surveillance program in 1999 and has tested more than 900 samples from California deer for CWD. All results to date have been negative. California is considered a low risk state for CWD; game ranching of cervids is not allowed (except for fallow deer), and importing live cervids is severely restricted. CWD is not currently known to be naturally transmitted to humans or animals other than deer and elk. On August 30, 2002, the Fish and Game Commission adopted emergency regulations placing conditions on the importation of hunter-harvested deer and elk into California. Those restrictions, which prohibit the importation and/or possession of brain

matter or spinal cord of a deer, elk or cervid from another state, were made permanent. The Department has established a task force to expand its disease monitoring efforts and improved surveillance for CWD (and other diseases) to improve preparedness should CWD emerge in California.

There is no indication of a potential for the State's elk populations (either statewide or locally) to be significantly impacted by a major disease outbreak. There are no data available to indicate that disease, road kills, predation or other natural mortality factors will act as additive impacts which, along with the proposed hunting program, will have a significant adverse cumulative impact on local or statewide elk populations.

Effects of Habitat Loss and Degradation

The proposed project is not likely to cause habitat loss and degradation. The removal of individuals may actually improve elk habitat by decreasing grazing intensity. The elk hunting season is short, and most of the hunting areas are generally open to the public for other uses year-round. The effects on habitat loss and degradation by hunters during the elk hunting season would be negligible.

On private land, there are potential changes in land ownership which may result in land-use changes. No major changes in private land-use patterns are expected in the near future. The long-term outlook for elk habitat on public lands in California is stable to improving. The cumulative impacts of habitat modification plus hunting are not expected to have a significant adverse impact on elk populations. In combination with the proposed project, potential habitat modification/ degradation is unlikely to have significant adverse cumulative effects.

Effects of Illegal Harvest

Illegal harvest of game mammals is difficult to quantify. It is likely that elk have been taken illegally from proposed hunt areas, as well as from other herds where hunting is not proposed. Department records indicate at least three citations per year involving illegal take/possession of elk were issued in 1997 and 1998. At least three citations involving elk were issued each year in 2000 and 2001. Illegal harvest of subspecies other than Roosevelt elk has occurred in California and other western states (Potter 1982).

Illegal take of tule elk has occurred in the Owens Valley, at Grizzly Island and Fort Hunter Liggett during recent tule elk seasons. One hunter at Grizzly Island was cited for taking two and one cited for taking a spike elk while possessing an antlerless tag. Similar incidents occurred in sporadically in the past. Such incidents of unintentional illegal take have occurred with other game animals in California and other western states. The Department conducts mandatory hunter orientations for some tule elk hunt sin California and emphasizes avoiding incidents of unintentional illegal take and distributes informational material to all elk tag holders. The Department will continue

this emphasis in future orientations; additionally, the Department will continue to issue citations to individuals for illegally taking elk, regardless of whether or not such take is intentional. Even with such measures, however, some level of unintentional illegal take is expected to continue. Nevertheless, there is no indication that illegal harvest will, in combination with the proposed project, have significant adverse cumulative effects.

Effects of Depredation

Private property conflicts involving effects of elk on agricultural crops, fences, and other personal property have occurred, and are likely to continue wherever elk and humans coexist. Section 4181, FGC, provides for the killing of elk when private "property is being damaged or is in danger of being damaged or destroyed." However, current Department policy is to attempt all reasonable and practical means of nonlethal control prior to issuing a depredation permit for elk.

Issuing depredation (kill) permits is considered as the final measure to alleviate localized private property conflicts involving elk; and the Department issued no elk depredation permits from 1989 until 2002. However, as elk populations have increased and distribution has expanded, conflicts on private property have increased in severity. Since 2002, the Department has issued approximately 19 elk depredation permits.

With the establishment of the SHARE Program, the Department offers recreational hunting opportunities in partnership with landowners to help alleviate effects of elk on private lands. This program provides incentives to to allow public access on private lands. The resulting hunting pressure helps alleviate some of the conflict and provides important recreational opportunities, which function as a tool for elk management.

In response to the increasing private property conflicts involving elk, the State Legislature passed Assembly Bill 1420 (AB1420, Laird; Chaptered September 4, 2003). Among other things, AB 1420 directs the Department to prepare a statewide elk management plan that identifies management activities necessary to alleviate private property damage caused by elk. The statewide Elk Conservation and Management Plan was completed and released in December 2018 (CDFW 2018). Prior to issuing an elk depredation permit, AB1420 requires the Department to verify damage caused by elk, provide a written summary of corrective measures to alleviate the problem, determine the viability of the subject elk herd and the minimum population numbers needed to sustain it, and finally to ensure that a permit will not reduce the herd below the minimum population level.

To alleviate private property conflicts involving elk, the Department will investigate the potential for expanding hunting opportunities. Because of the constraints in AB1420, the Commission does not anticipate adverse cumulative impacts to elk populations resulting from combined effects of the proposed project and issuance of depredation permits.

Effects of Vehicle-Caused Mortality

The number of elk killed by vehicles is not well documented. Unlike deer, very few elk in California appear to be killed by automobiles each year. Vehicle-caused elk mortalities have been reported (specifically with Roosevelt elk in Del Norte and Humboldt counties and tule elk in the Owens Valley and at Cache Creek) since 1990. Unreported incidents cannot be quantified. However, the Commission believes effects of vehicle-caused mortality on statewide and localized elk populations are minimal.

Conclusion

The Department has examined a variety of factors that might affect Roosevelt elk populations in the Northwestern elk zone. The Department does not anticipate adverse cumulative impacts to the local elk populations will occur as a result of the proposed project in combination with any factor discussed. However, if some unforeseen cataclysmic event should occur that threatens the welfare of either statewide elk populations or individual hunted populations, the Commission has the authority to take appropriate action, which may include emergency closure of seasons and/or reduction of future hunting opportunities.

Although hunting elk will result in the death of individual elk, limited tag quotas, short seasons, bag limits, and close monitoring of hunter activity in the field, will result in removing elk at a level below the individual herds' sustained-yield capabilities. The elk herds proposed for hunting will be maintained within specified management plan objective ranges. Statewide population levels for Roosevelt elk will remain stable. Therefore, significant adverse effects, individually or cumulatively, to elk populations are not expected to result from the proposed project. Additionally, no impacts from two or more separate factors have been identified where, when viewed alone would be minor, but whose combined effect would be significant. Because individual and cumulative negative impacts are not expected to occur, specific mitigation measures are unnecessary.

CHAPTER 3 - ALTERNATIVES

ALTERNATIVE 1 - NO PROJECT (NO CHANGE- MAINTAIN CURRENT CONDITION)

Other than annual tag quota modifications proposed in response to herd productivity, implementation of the No Project Alternative would result in no change from the 2010 tag quota range for Northwestern California. The Department does not expect age and sex ratios to change appreciably under this alternative. Herd size is expected to remain stable, or increase if currently below carrying capacity (Appendix 3). Since this alternative presents no changes to current levels of hunting activity and elk harvest, the no-project alternative would not lead to any potential significant impacts on the environment.

ALTERNATIVE 2 – INCREASED HARVEST

Alternative 2 represents management options that will achieve an increased harvest (IH) for Northwestern California by increasing the available tags to 60 instead of 20 in the proposed alternative. IH refers to a harvest strategy that maximizes the number of animals that can be harvested from a population, commensurate with the goals and objectives stated for that herd, for at least the following year. A potential issue with an IH management strategy is risk of overharvest. If overharvest occurs under an IH program, more conservative management strategies would be necessary the following year to address it. Based on the Department's current understanding of elk populations in the Northwestern Hunt Zone and the scenarios run in Elk Pop, an IH scenario may affect the ability to meet the statewide objective to increase populations by ten percent. While calf ratios are expected to increase in response to increased harvest under an IH program, herd growth in Northwestern California may be limited if an IH program is maintained for a ten-year period (Appendix 3). While impacts to the environment and the sustainability of California's elk population are not anticipated to be significant with this level of harvest, it may not achieve the Department's management objective of increasing the population by ten percent in suitable areas where depredation conflicts are minimal. Although the Northwestern Hunt Zone has experienced a significant increase in landowner conflicts, the Department does not recommend an IH strategy at this time but recognizes the importance and need for continued evaluation.

ALTERNATIVE 3 – REDUCED HARVEST

Alternative 3 represents management options for Northwestern California that will produce a relatively small increase in harvest by adding ten additional tags rather than 20. This reduced harvest (RH) is a strategy that provides hunting opportunities at reduced levels from those proposed under either IH or the proposed project. Calf ratios may increase slightly, whereas bull ratios are not expected to change appreciably under this alternative. Herd size is expected to remain stable, or increase if currently below carrying capacity (Appendix 3). Since this alternative would reduce hunting opportunity, it does not achieve the Department's management objective of providing for diversified recreational opportunities for enjoyment of wildlife, within sustainable levels.

There are no significant long-term adverse impacts associated with the proposed project or any of the three alternatives described above. However, the Department recommends the proposed project because it is most compatible with objectives of population growth (Objective 1.2), increasing hunting opportunities (Objective 3.1), and reducing human-elk conflicts on private property (Objective 4.1) in the Department's Elk Conservation and Management plan (CDFW 2018). Alternative 1 would not increase hunting opportunities or help alleviate conflicts on private property. Alternative 2 (IH) may be warranted, and additional research efforts to improve understanding of elk distribution and population dynamics are necessary to consider that level of increase. The Department recognizes continued elk population growth and increasing human-elk conflicts as it works in partnership with other agencies, non-profits and landowners to develop long-term solutions consistent with management plan objectives. Whereas Alternative 3 (RH) may also achieve these objectives, it does not optimize public hunting opportunities or alleviation of conflicts on private property.

LITERATURE CITED

Bakker, E. 1972. An island called California. Univ. of California Press, Berkeley.

Barbour, M.G., and J. Major, eds. 1977. Terrestrial vegetation of California. John Wiley and Sons, New York.

Barnes, E. P. 1925a. Elk in Del Norte County. California Fish and Game 11:90.

_____. 1925b. A few Roosevelt elk still exist in Del Norte County. California Fish and Game 11:142.

Booth, J., J. Swanson, and D. Koch. 1988. Management plan for the Cache Creek tule elk management unit. California Department of Fish and Game. Sacramento, California.

Botti, F. and D. Koch. 1988. Management plan for the Grizzly Island tule elk management unit. California Department of Fish and Game. Sacramento, California.

Bubenik, A.B. 1982. Physiology. Pp. 125-179 *in* J. W. Thomas and D.E. Toweill eds. Elk of North America, ecology and management. Stackpole Books, Harrisburg, PA 698 pp.

Burcham, L.T. 1975. Climate, structure, and history of California's annual grassland ecosystem. Pages 7-14 *in* R.M. Love, ed. The California annual grassland ecosystem. Univ. of California, Davis, Inst. of Ecology Publ. No. 7.

California Department of Fish and Game. 2004. Final Environmental Document, Section 364, Title 14, California Code of Regulations, Regarding Elk Hunting. State of California, The Resources Agency, Department of Fish and Game. 300 pp.

California Department of Fish and Game. 2010. Final Environmental Document, Section 364, Title 14, California Code of Regulations, Regarding Elk Hunting. State of California, The Resources Agency, Department of Fish and Game. 48 pp.

California Department of Fish and Wildlife, 2018. Elk Conservation and Management Plan. State of California, The Resources Agency, Department of Fish and Wildlife. 471 pp.

California Department of Water Resources, 2015. California's Most Significant Droughts: Comparing Historical and Recent Conditions. State of California, The Resources Agency, Department of Water Resources. 136 pp.

Clutton-Brock, T.H., F.E. Guiness, and S.D. Albon. 1982. Red deer: behavior and ecology of two sexes. Univ. Chicago Press. 378 pp.

deVos, J. C., Jr. and T. McKinney. 2003. Recent trends in North American mountain lion populations: a hypothesis. Pages 297-307 *in* C. van Riper III and D. J. Mattson, editors. The Colorado Plateau II, University of Arizona Press, Tucson.

Fowler, G.S. 1985. Tule elk in California: history, current status, and management recommendations. California Department of Fish and Game, 1416 Ninth Street. Sacramento, California 95814. Interagency Agreement #C-698.

Fredrickson, E., K. M. Havstad, R. Estell, and P. Hyder. 1998. Perspectives on desertification: south-western United States. Journal of Arid Environments 39:191-207.

Geist, V. 1982. Adaptive behavioral strategies. Pp. 219-277 in J. W. Thomas and D. E. Toweill eds. Elk of North America, ecology and management. Stackpole Books, Harrisburg, PA 698 pp.

Harper, J.A., J.H. Harn, W.W. Bentley, and C.F. Yocom. 1967. The status and ecology of the Roosevelt elk in California. Wildlife Monographs No. 16. Washington D.C. The Wildlife Society. 49 pp.

Hebblewhite, M. 2005. Predation by wolves interacts with the North Pacific Oscillation (NPO) on a western North American elk population. Journal of Animal Ecology 74:226-233.

Hines, W., J. Lemos, and N. Hartmen. 1985. Male breeding efficiency in Roosevelt elk of southwestern Oregon. Wildlife Research Report Number 15. Oregon Department of Fish and Wildlife, P.O. Box 3503, Portland, Oregon 97208.

Hobbs, N.T., J.S. Baron, D.J. Cooper, M.B. Coughenour, A. Covich, J. Dickens, H. Galbraith, L. Landrum, J. Loomis, M. McDuff, D. Ojima, D.M. Theobold, and S. Weiler. 2006. An integrated assessment of the effects of climate change on Rocky Mountain National Park and its gateway community: interactions of multiple stressors. Final report to the U.S. Environmental Protection Agency

Koenig, W.D., W.J. Carmen, M.T. Stanback, and R.L. Mumme. 1991. In press. Determinants of acorn productivity among five species of oaks in central coastal California. Symposium on California's Oak Woodlands and Hardwood Rangeland.

Lindzey, F.G., W.G. Hepworth, T.A. Mattson and A.F. Reeves 1997. Potential for competition interactions between mule deer and elk in the Western United States and Canada: A Review. Wyoming Cooperative Fisheries and Wildlife Research Unit, Laramie, WY. 84pp.

Lyon, J. and L. Ward. 1982. Elk and land management. Pp. 443-477 *in* J. W. Thomas and D.E. Toweill (eds.). Elk of North America, ecology and management. Stackpole Books. Harrisburg, Pennsylvania. 698 pp.

McCullough, D.R. 1969. The Tule Elk: Its History, Behavior and Ecology. University of California Publ. in Zoology. No. 88. University of California Press. Berkeley, California. 209 pp.

McCullough, D.R. 1979. The George Reserve deer herd: population ecology of a selected species. Univ. Michigan Press. Ann Arbor. 271 pp.

McCullough, D.R. 1984. Lessons from the George Reserve. Pp. 211-242. *in* L. K. Halls (ed.). White-tailed deer: ecology and management. Stackpole Books. Harrisburg, Pennsylvania. 870 pp.

Mohler, L. and D.E. Toweill. 1982. Regulated elk populations and hunter harvests. Pp. 561-598 *in* J. W. Thomas and Dale E. Toweill (eds.). Elk of North America, ecology and management. Stackpole Books. Harrisburg, Pennsylvania. 698 pp.

Munz, P.A. and D.D. Keck. 1973. A California flora with supplement. Univ. of California Press, Berkeley.

Murie, O.J. 1951. The Elk of North America. Wildlife Management Institute. Stackpole Books, Harrisburg, PA. 376 pp.

Nelson, J. and T.A. Leege. 1982. Nutritional requirements and food habits. Pp. 323-368 in J. W. Thomas and D.E. Toweill (eds.). Elk of North America, ecology and management. Stackpole Books. Harrisburg, Pennsylvania. 698 pp.

Ornduff, R. 1974. Introduction to California plant life. University of California Press, Berkeley.

Potter, D.R. 1982. Recreational use of elk. Pp. 509-559 in J.W. Thomas and D.G. Toweill eds. Elk of North America, ecology and management. Stackpole Books. Harrisburg, PA. 698 p.

Racine, D., T. Blankinship, and D. Koch. 1988. Management plan for the Owens Valley tule elk management unit. California Department of Fish and Game. Sacramento, California.

Ricker, W.E. 1954. Stock and Recruitment. Journal of the Fisheries Resources Board Canada. 11:559-623.

Savidge, I.R. and J.S. Ziesenis. 1980. Sustained yield Management. Pp. 405-410 *in* Sanford D. Schemnitz (ed.). Wildlife Management Techniques Manual. The Wildlife Society. Washington, D.C. 686 pp.

Smith, D. and D. Updike. 1987. Elk Pop, unpublished computer population simulation model. Department of Fish and Game, 1416 Ninth Street, Sacramento, California 95814.

Taber, R.D., K. Raedeke, and D.A. McCaughran. 1982. Population characteristics. Pp. 279-300 in J. W. Thomas and D. E. Toweill (eds.). Elk of North America, ecology and management. Stackpole Books. Harrisburg, Pennsylvania. 698 pp.

Williams, E.S., M.W. Miller, T.J. Kreeger, R.H. Kahn, and E.T. Thorne. 2002. Chronic wasting disease of deer and elk: a review with recommendations for management. Journal of Wildlife Management, 66(3): 551-563.

Appendix 1. CEQA Environmental Checklist Form

CEQA Appendix G:
Environmental Checklist form

NOTE: The following is a sample form and may be tailored to satisfy individual agencies' needs and project circumstances. It may be used to meet the requirements for an initial study when the criteria set forth in CEQA Guidelines have been met. Substantial evidence of potential impacts that are not listed on this form must also be considered. The sample questions in this form are intended to encourage thoughtful assessment of impacts, and do not necessarily represent thresholds of significance.

1. Project title: Elk Hunting
2. Lead agency name and address:
   California Fish and Game Commission
   1416 9th Street, Suite 1320
   Sacramento, CA 95814
3. Contact person and phone number: Kari Lewis, Chief, Wildlife Branch - (916) 445-3789
4. Project location: Statewide
5. Project sponsor's name and address:
   California Department of Fish and Wildlife
   Wildlife Branch, 1812 9th Street
   Sacramento, CA 95811
6. General plan designation: N/A
7. Zoning: N/A
8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.) The proposed project would increase the tag quota range (by 20 tags) in the Northwestern Elk Zone.
9. Surrounding land uses and setting: Briefly describe the project's surroundings:
   The project occurs in areas in Del Norte and Humboldt Counties open to elk hunting.
10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)
    N/A
11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

    No.

    NOTE: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Geology /Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☒ Recreation
☐ Transportation/Traffic	☐ Tribal Cultural Resources	☐ Utilities/Service Systems
☐ Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT equivalent under the Commission's Certified Regulatory Plan is required.

☒ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT equivalent under the Commission's Certified Regulatory Plan is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date 2/19/19

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance

Issues:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
VII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
XI. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
project expose people residing or working in the project area to excessive noise levels?				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES.				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC.				
Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. TRIBAL CULTURAL RESOURCES				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒
VIII. UTILITIES AND SERVICE SYSTEMS. Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XIX. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Note: Authority cited: Sections 21083 and 21083.05, 21083.09 Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21073, 21074 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21080.3.1, 21080.3.2,21082.3, 21084.2, 21084.3, 21093, 21094, 21095, and 21151, Public Resources Code; *Sundstrom v. County of Mendocino,*(1988) 202 Cal.App.3d 296; *Leonoff v. Monterey Board of Supervisors,* (1990) 222 Cal.App.3d 1337; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

Appendix 2 - 2019 Proposed Elk Tag Allocation for the Northwest Zone. Tags will be distributed between general draws and SHARE hunts.

	2018 Tag Allocation	2018 Tag Range	2019 Tag Range (Proposed)
Bull	20	0-20	0-28
Antlerless	22	0-22	0-34
Either-sex	3	0-3	0-3

Appendix 3. Computer Model Runs (Elk Pop) Harvest

NORTHWESTERN CALIF. ELK HERD SIMULATION- GENERAL, PLM, SHARE TAGS, 2019
(Combined Harvest for Del Norte and Humboldt cos)
Ratio = 37/100/32 - Maximum Calf Survival = 40%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITIONS = NO CHANGE. GENERAL, COOP ELK, SHARE AND PLM TAGS TO HARVEST APPROXIMATELY 44 BULLS AND 21 ANTLERLESS ELK

HERD SIZE	1600	ELK
% BULLS LOST TO NON HUNTING CAUSES	23.5	%
% COWS LOST TO NON HUNTING CAUSES	11.9	%
% OF BULLS KILLED BY HUNTERS	12.55	%
% OF COWS KILLED BY HUNTERS	2.2	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	350	947	303	1600	1600	|	44	21
YEAR 1	"	350	949	301	1600	1600	|	44	21
YEAR 2	"	349	950	300	1600	1600	|	44	21
YEAR 3	"	349	951	300	1600	1600	|	44	21
YEAR 4	"	348	952	300	1600	1600	|	44	21
YEAR 5	"	348	952	300	1600	1600	|	44	21
YEAR 6	"	347	953	300	1600	1600	|	44	21
YEAR 7	"	347	953	300	1600	1600	|	44	21
YEAR 8	"	347	953	300	1600	1600	|	44	21
YEAR 9	"	347	953	300	1600	1600	|	44	21
YEAR 10	"	347	954	300	1600	1600	|	44	21

		BULL RATIO	CALF RATIO
START		37	32
POST HUNT YR	1	33	32
POST HUNT YR	2	33	32
POST HUNT YR	3	33	32
POST HUNT YR	4	33	32
POST HUNT YR	5	33	32
POST HUNT YR	6	33	32
POST HUNT YR	7	33	32
POST HUNT YR	8	33	32
POST HUNT YR	9	33	32
POST HUNT YR	10	33	32

(Combined Harvest for Del Norte and Humboldt cos)

Ratio = 37/100/32 - Maximum Calf Survival = 40%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITIONS = NO CHANGE. GENERAL, COOP ELK, SHARE AND PLM TAGS TO HARVEST APPROXIMATELY 44 BULLS AND 21 ANTLERLESS ELK

HERD SIZE	1600	ELK
% BULLS LOST TO NON HUNTING CAUSES	23.5	%
% COWS LOST TO NON HUNTING CAUSES	11.9	%
% OF BULLS KILLED BY HUNTERS	12.55	%
% OF COWS KILLED BY HUNTERS	2.2	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	350	947	303	1600	1600	|	44	21
YEAR 1	"	350	949	370	1670	1760	|	44	21
YEAR 2	"	376	981	371	1728	1760	|	47	22
YEAR 3	"	393	1009	358	1760	1760	|	49	22
YEAR 4	"	400	1027	333	1760	1760	|	50	23
YEAR 5	"	395	1031	333	1760	1760	|	50	23
YEAR 6	"	392	1036	333	1760	1760	|	49	23
YEAR 7	"	389	1039	332	1760	1760	|	49	23
YEAR 8	"	387	1041	331	1760	1760	|	49	23
YEAR 9	"	386	1043	331	1760	1760	|	48	23
YEAR 10	"	385	1045	331	1760	1760	|	48	23

		BULL RATIO	CALF RATIO
START		37	32
POST HUNT YR	1	33	40
POST HUNT YR	2	34	39
POST HUNT YR	3	35	36
POST HUNT YR	4	35	33
POST HUNT YR	5	34	33
POST HUNT YR	6	34	33
POST HUNT YR	7	34	33
POST HUNT YR	8	33	33
POST HUNT YR	9	33	32
POST HUNT YR	10	33	32

Ratio = 37/100/32 - Maximum Calf Survival = 40%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

INCREASED PROPOSAL: ADD 24 BULL AND 36 ANTLERLESS (SHARE) TAGS TO HARVEST APPROXIMATELY 68 BULLS AND 57 ANTLERLESS ELK

HERD SIZE	1600	ELK
% BULLS LOST TO NON HUNTING CAUSES	23.5	%
% COWS LOST TO NON HUNTING CAUSES	11.9	%
% OF BULLS KILLED BY HUNTERS	19.55	%
% OF COWS KILLED BY HUNTERS	6	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	350	947	303	1600	1600	|	44	21
YEAR 1	"	350	949	301	1600	1600	|	68	57
YEAR 2	"	331	918	351	1600	1600	|	65	55
YEAR 3	"	338	915	345	1598	1600	|	66	55
YEAR 4	"	340	910	344	1594	1600	|	66	55
YEAR 5	"	341	905	342	1588	1600	|	67	54
YEAR 6	"	341	900	340	1581	1600	|	67	54
YEAR 7	"	340	896	339	1574	1600	|	66	54
YEAR 8	"	339	891	337	1566	1600	|	66	53
YEAR 9	"	337	886	335	1558	1600	|	66	53
YEAR 10	"	336	881	333	1550	1600	|	66	53

		BULL RATIO	CALF RATIO
START		37	32
POST HUNT YR	1	32	34
POST HUNT YR	2	31	41
POST HUNT YR	3	32	40
POST HUNT YR	4	32	40
POST HUNT YR	5	32	40
POST HUNT YR	6	32	40
POST HUNT YR	7	32	40
POST HUNT YR	8	33	40
POST HUNT YR	9	33	40
POST HUNT YR	10	33	40

THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

INCREASED PROPOSAL: ADD 24 BULL AND 36 ANTLERLESS (SHARE) TAGS TO
HARVEST APPROXIMATELY 68 BULLS AND 57 ANTLERLESS ELK

HERD SIZE	1600	ELK
% BULLS LOST TO NON HUNTING CAUSES	23.5	%
% COWS LOST TO NON HUNTING CAUSES	11.9	%
% OF BULLS KILLED BY HUNTERS	19.55	%
% OF COWS KILLED BY HUNTERS	6	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	350	947	303	1600	1600	|	44	21
YEAR 1	"	350	949	370	1670	1760	|	68	57
YEAR 2	"	357	949	357	1663	1760	|	70	57
YEAR 3	"	356	943	357	1656	1760	|	70	57
YEAR 4	"	356	938	355	1649	1760	|	70	56
YEAR 5	"	355	933	353	1641	1760	|	69	56
YEAR 6	"	353	928	351	1632	1760	|	69	56
YEAR 7	"	352	923	349	1624	1760	|	69	55
YEAR 8	"	350	918	347	1615	1760	|	68	55
YEAR 9	"	348	913	345	1607	1760	|	68	55
YEAR 10	"	346	909	343	1598	1760	|	68	55

		BULL RATIO	CALF RATIO
START		37	32
POST HUNT YR	1	32	42
POST HUNT YR	2	32	40
POST HUNT YR	3	32	40
POST HUNT YR	4	32	40
POST HUNT YR	5	33	40
POST HUNT YR	6	33	40
POST HUNT YR	7	33	40
POST HUNT YR	8	33	40
POST HUNT YR	9	33	40
POST HUNT YR	10	33	40

NORTHWESTERN CALIF. ELK HERD SIMULATION- GENERAL, PLM,SHARE TAGS, 2019
(Combined Harvest for Del Norte and Humboldt cos)
Ratio = 37/100/32 - Maximum Calf Survival = 40%
THIS PROGRAM CALCULATES CHANGES IN HERD

CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

PROPOSED PROJECT: ADD 8 BULL AND 12 ANTLERLESS (SHARE) TAGS TO HARVEST APPROXIMATELY 52 BULLS AND 33 ANTLERLESS ELK

HERD SIZE	1600	ELK
% BULLS LOST TO NON HUNTING CAUSES	23.5	%
% COWS LOST TO NON HUNTING CAUSES	11.9	%
% OF BULLS KILLED BY HUNTERS	14.9	%
% OF COWS KILLED BY HUNTERS	3.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	350	947	303	1600	1600	|	44	21
YEAR 1	"	350	949	301	1600	1600	|	52	33
YEAR 2	"	343	939	318	1600	1600	|	51	33
YEAR 3	"	345	939	317	1600	1600	|	51	33
YEAR 4	"	346	937	317	1600	1600	|	51	33
YEAR 5	"	346	937	317	1600	1600	|	52	33
YEAR 6	"	347	936	317	1600	1600	|	52	33
YEAR 7	"	347	935	317	1600	1600	|	52	33
YEAR 8	"	347	935	317	1600	1600	|	52	33
YEAR 9	"	348	935	318	1600	1600	|	52	33
YEAR 10	"	348	935	318	1600	1600	|	52	33

		BULL RATIO	CALF RATIO
START		37	32
POST HUNT YR	1	33	33
POST HUNT YR	2	32	35
POST HUNT YR	3	32	35
POST HUNT YR	4	33	35
POST HUNT YR	5	33	35
POST HUNT YR	6	33	35
POST HUNT YR	7	33	35
POST HUNT YR	8	33	35
POST HUNT YR	9	33	35
POST HUNT YR	10	33	35

NORTHWESTERN CALIF. ELK HERD SIMULATION- GENERAL, PLM,SHARE TAGS, 2019
(Combined Harvest for Del Norte and Humboldt cos)

Ratio = 37/100/32 - Maximum Calf Survival = 40%

THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

PROPOSED PROJECT: ADD 8 BULL AND 12 ANTLERLESS (SHARE) TAGS TO HARVEST APPROXIMATELY 52 BULLS AND 33 ANTLERLESS ELK

HERD SIZE	1600	ELK
% BULLS LOST TO NON HUNTING CAUSES	23.5	%
% COWS LOST TO NON HUNTING CAUSES	11.9	%
% OF BULLS KILLED BY HUNTERS	14.9	%
% OF COWS KILLED BY HUNTERS	3.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	350	947	303	1600	1600	44	21
YEAR 1	"	350	949	370	1670	1760	52	33
YEAR 2	"	370	970	366	1706	1760	55	34
YEAR 3	"	381	986	374	1741	1760	57	35
YEAR 4	"	391	1003	366	1760	1760	58	35
YEAR 5	"	394	1014	352	1760	1760	59	35
YEAR 6	"	391	1017	352	1760	1760	58	36
YEAR 7	"	389	1020	351	1760	1760	58	36
YEAR 8	"	388	1021	351	1760	1760	58	36
YEAR 9	"	387	1023	350	1760	1760	58	36
YEAR 10	"	386	1024	350	1760	1760	57	36

		BULL RATIO	CALF RATIO
START		37	32
POST HUNT YR	1	33	40
POST HUNT YR	2	34	39
POST HUNT YR	3	34	39
POST HUNT YR	4	34	38
POST HUNT YR	5	34	36
POST HUNT YR	6	34	36
POST HUNT YR	7	34	36
POST HUNT YR	8	33	36
POST HUNT YR	9	33	36
POST HUNT YR	10	33	35

NORTHWESTERN CALIF. ELK HERD SIMULATION- GENERAL, PLM, SHARE TAGS, 2019
(Combined Harvest for Del Norte and Humboldt cos)

Ratio = 37/100/32 - Maximum Calf Survival = 40%

THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

REDUCED PROPOSAL: ADD 4 BULL AND 6 ANTLERLESS (SHARE) TAGS TO HARVEST APPROXIMATELY 48 BULLS AND 27 ANTLERLESS ELK

HERD SIZE	1600	ELK
% BULLS LOST TO NON HUNTING CAUSES	23.5	%
% COWS LOST TO NON HUNTING CAUSES	11.9	%
% OF BULLS KILLED BY HUNTERS	13.8	%
% OF COWS KILLED BY HUNTERS	2.85	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	350	947	303	1600	1600	|	44	21
YEAR 1	"	350	949	301	1600	1600	|	48	27
YEAR 2	"	346	945	309	1600	1600	|	48	27
YEAR 3	"	346	945	309	1600	1600	|	48	27
YEAR 4	"	347	945	309	1600	1600	|	48	27
YEAR 5	"	347	945	309	1600	1600	|	48	27
YEAR 6	"	347	944	309	1600	1600	|	48	27
YEAR 7	"	347	944	309	1600	1600	|	48	27
YEAR 8	"	347	944	309	1600	1600	|	48	27
YEAR 9	"	347	944	309	1600	1600	|	48	27
YEAR 10	"	347	944	309	1600	1600	|	48	27

		BULL RATIO	CALF RATIO
START		37	32
POST HUNT YR	1	33	33
POST HUNT YR	2	32	34
POST HUNT YR	3	33	34
POST HUNT YR	4	33	34
POST HUNT YR	5	33	34
POST HUNT YR	6	33	34
POST HUNT YR	7	33	34
POST HUNT YR	8	33	34
POST HUNT YR	9	33	34
POST HUNT YR	10	33	34

NORTHWESTERN CALIF. ELK HERD SIMULATION- GENERAL, PLM, SHARE TAGS, 2019
(Combined Harvest for Del Norte and Humboldt cos)

Ratio = 37/100/32 - Maximum Calf Survival = 40%

THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

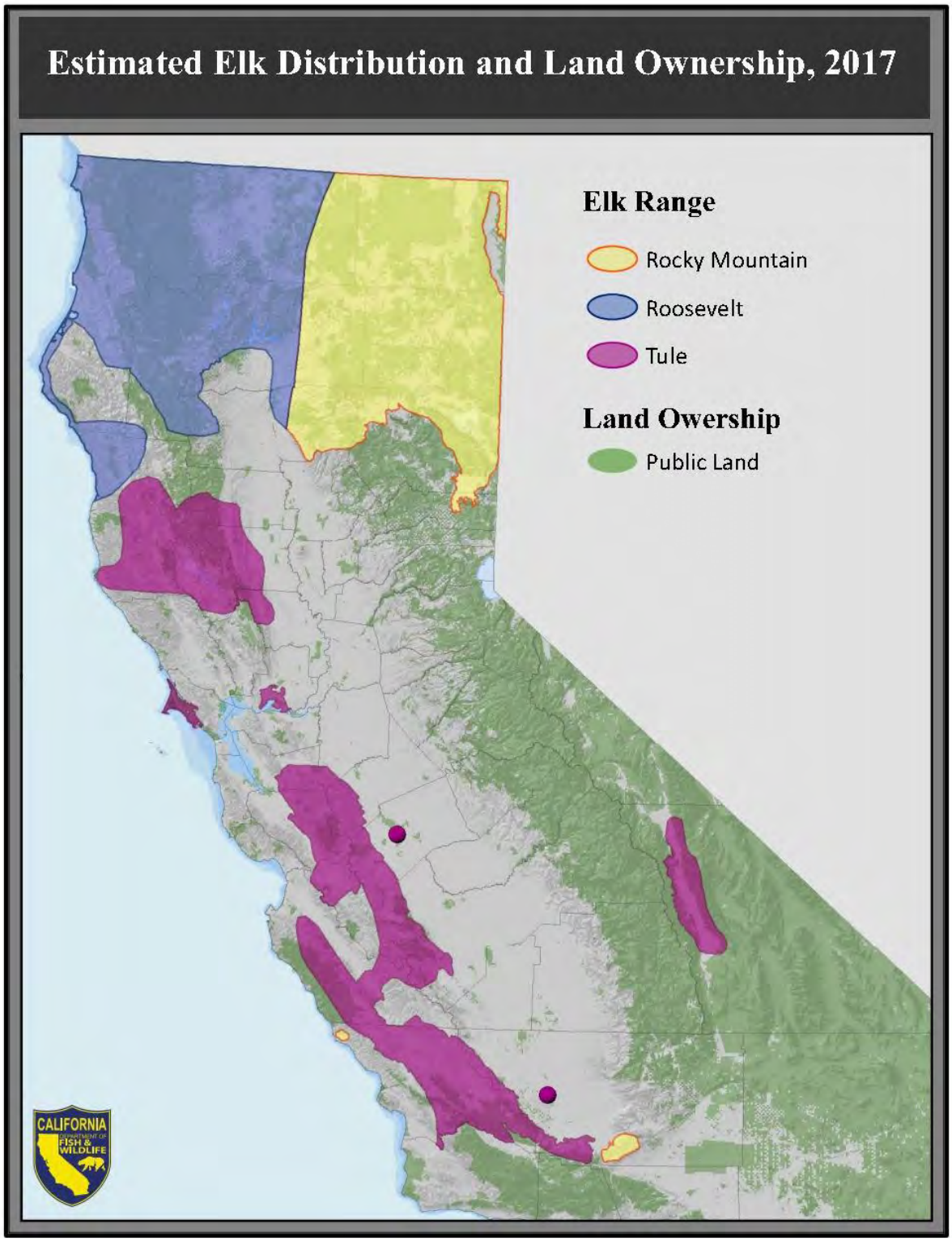
REDUCED PROPOSAL: ADD 4 BULL AND 6 ANTLERLESS (SHARE) TAGS TO HARVEST APPROXIMATELY 48 BULLS AND 27 ANTLERLESS ELK

HERD SIZE	1600	ELK
% BULLS LOST TO NON HUNTING CAUSES	23.5	%
% COWS LOST TO NON HUNTING CAUSES	11.9	%
% OF BULLS KILLED BY HUNTERS	13.8	%
% OF COWS KILLED BY HUNTERS	2.85	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	350	947	303	1600	1600	|	44	21
YEAR 1	"	350	949	370	1670	1760	|	48	27
YEAR 2	"	373	975	369	1717	1760	|	51	28
YEAR 3	"	387	997	376	1760	1760	|	53	28
YEAR 4	"	399	1019	342	1760	1760	|	55	29
YEAR 5	"	394	1023	343	1760	1760	|	54	29
YEAR 6	"	391	1027	342	1760	1760	|	54	29
YEAR 7	"	389	1030	342	1760	1760	|	54	29
YEAR 8	"	387	1032	341	1760	1760	|	53	29
YEAR 9	"	386	1033	341	1760	1760	|	53	29
YEAR 10	"	385	1035	341	1760	1760	|	53	29

		BULL RATIO	CALF RATIO
START		37	32
POST HUNT YR	1	33	40
POST HUNT YR	2	34	39
POST HUNT YR	3	34	39
POST HUNT YR	4	35	35
POST HUNT YR	5	34	35
POST HUNT YR	6	34	34
POST HUNT YR	7	34	34
POST HUNT YR	8	33	34
POST HUNT YR	9	33	34
POST HUNT YR	10	33	34

Appendix 4. Estimated Elk Distribution and Land Ownership, 2017



Appendix 5. Current Elk Hunting Regulations

§364, Title 14, CCR. Elk.

- (a) Department Administered General Methods Roosevelt Elk Hunts:
  - (1) Siskiyou General Methods Roosevelt Elk Hunt:
    - (A) Area: In that portion of Siskiyou County beginning at the junction of Interstate Highway 5 with the California-Oregon state line; east along the state line to Hill Road at Ainsworth Corner; south along Hill Road to Lava Beds National Monument Road; south along Lava Beds National Monument Road to USDA Forest Service Road 49; south along USDA Forest Service Road 49 to USDA Forest Service Road 77; west along USDA Forest Service Road 77 to USDA Forest Service Road 15 (Harris Spring Road); south along USDA Forest Service Road 15 to USDA Forest Service Road 13 (Pilgrim Creek Road); southwest along USDA Forest Service Road 13 to Highway 89; northwest along Highway 89 to Interstate Highway 5; north along Interstate Highway 5 to the point of beginning.
  - (2) Northwestern California Roosevelt Elk Hunt:
    - (A) Area: In those portions of Humboldt and Del Norte counties within a line beginning at the intersection of Highway 299 and Highway 96, north along Highway 96 to the Del Norte-Siskiyou county line, north along the Del Norte-Siskiyou county line to the California-Oregon state line, west along the state line to the Pacific Coastline, south along the Pacific coastline to the Humboldt-Mendocino county line, east along the Humboldt-Mendocino county line to the Humboldt-Trinity county line, north along the Humboldt-Trinity county line to Highway 299, west along Highway 299 to the point of beginning.
  - (3) Marble Mountains General Methods Roosevelt Elk Hunt
    - (A) Area: In those portions of Humboldt, Tehama, Trinity, Shasta and Siskiyou counties beginning at the intersection of Interstate Highway 5 and the California-Oregon state line; west along the state line to the Del Norte County line; south along the Del Norte County line to the intersection of the Siskiyou-Humboldt county lines; east along the Siskiyou-Humboldt county lines to Highway 96; south along Highway 96 to Highway 299; south along Highway 299 to the Intersection of the Humboldt/Trinity County line; south along the Humboldt Trinity County Line to the intersection of Highway 36; east along Highway 36 to the intersection of Interstate 5; north on Interstate Highway 5 to the point of beginning.
- (b) Department Administered General Methods Rocky Mountain Elk Hunts:
  - (1) Northeastern California General Methods Rocky Mountain Elk Hunt:
    - (A) Area: Those portions of Siskiyou, Modoc, Lassen, and Shasta counties within a line beginning in Siskiyou County at the junction of the California-Oregon state line and Hill Road at Ainsworth Corner; east along the California-Oregon state line to the California-Nevada state line; south along the California-Nevada state line to the Tuledad-Red Rock-Clarks Valley Road (Lassen County Roads 506, 512 and 510); west along the Tuledad-Red Rock-Clarks Valley Road to Highway 395 at Madeline; west on USDA Forest Service Road 39N08 to the intersection of Highway 139/299 in Adin; south on Highway 139 to the intersection of Highway 36 in Susanville; west on Highway 36 to the intersection of Interstate 5 in Red Bluff; north on Interstate 5 to Highway 89; southeast along Highway 89 to USDA Forest Service Road 13 (Pilgrim Creek Road); northeast along USDA Forest Service Road 13 to USDA Forest Service Road 15 (Harris Spring Road); north along USDA Forest Service Road to USDA Forest Service Road 77; east along USDA Forest Service Road 77 to USDA Forest Service Road 49; north along USDA Forest Service Road 49 to Lava Beds National Monument Road; north along Lava Beds National Monument Road to Hill Road; north along Hill Road to the point of beginning.
- (c) Department Administered General Methods Roosevelt/Tule Elk Hunts:
  - (1) Mendocino General Methods Roosevelt/Tule Elk Hunt:
    - (A) Area: Those portions in Mendocino County within a line beginning at the Pacific Coastline and the Mendocino/Humboldt County line south of Shelter Cove; east along

the Mendocino/Humboldt County line to the intersection of the Humboldt, Mendocino, and Trinity County lines; south and east along the Mendocino/Trinity County line to the intersection of the Mendocino, Trinity, and Tehama County lines; south along the Mendocino County line to the intersection of Highway 20; north and west along Highway 20 to the intersection of Highway 101 near Calpella; south along Highway 101 to the intersection of Highway 253; southwest along Highway 253 to the intersection of Highway 128; north along Highway 128 to the intersection of Mountain View Road near the town of Boonville; west along Mountain View Road to the intersection of Highway 1; south along Highway 1 to the intersection of the Garcia River; west along the Garcia River to the Pacific Coastline; north along the Pacific Coastline to the point of beginning.

- (d) Department Administered General Methods Tule Elk Hunts:
  - (1) Cache Creek General Methods Tule Elk Hunt:
    - (A) Area: Those portions of Lake, Colusa and Yolo counties within the following line: beginning at the junction of Highway 20 and Highway 16; south on Highway 16 to Reiff-Rayhouse Road; west on Reiff-Rayhouse Road to Morgan Valley Road; west on Morgan Valley Road to Highway 53; north on Highway 53 to Highway 20; east on Highway 20 to the fork of Cache Creek; north on the north fork of Cache Creek to Indian Valley Reservoir; east on the south shore of Indian Valley Reservoir to Walker Ridge-Indian Valley Reservoir Access Road; east on Walker Ridge-Indian Valley Reservoir Access Road to Walker Ridge Road; south on Walker Ridge Road to Highway 20; east on Highway 20 to the point of beginning.
  - (2) La Panza General Methods Tule Elk Hunt:
    - (A) Area: In those portions of San Luis Obispo, Kern, Monterey, Kings, Fresno, San Benito, and Santa Barbara counties within a line beginning in San Benito County at the junction of Highway 25 and County Highway J1 near the town Pacines, south along Highway 25 to La Gloria road, west along La Gloria road, La Gloria road becomes Gloria road, west along Gloria road to Highway 101 near Gonzales, south along Highway 101 to Highway 166 in San Luis Obispo County; east along Highway 166 to Highway 33 at Maricopa in Kern County; north and west along Highway 33 to Highway 198 at Coalinga in Fresno County, north along Highway 33 to Interstate 5 in Fresno County, north along Interstate 5 to Little Panoche road/County Highway J1, southwest along Little Panoche road/County Highway J1 to the intersection of Little Panoche road/County Highway J1 and Panoche road/County Highway J1 in San Benito County, northwest along Panoche road/County Highway J1 to the point of beginning.
    - (B) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.
  - (3) Bishop General Methods Tule Elk Hunt:
    - (A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Highway 6 in the town of Bishop; north and east along Highway 6 to the junction of Silver Canyon Road; east along Silver Canyon Road to the White Mountain Road (Forest Service Road 4S01); south along the White Mountain Road to Highway 168 at Westgard Pass; south and west along Highway 168 to the junction of Highway 395; north on Highway 395 to the point of beginning.
  - (4) Independence General Methods Tule Elk Hunt:
    - (A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Aberdeen Station Road; east on Aberdeen Station Road to its terminus at the southern boundary of Section 5, Township 11S, Range 35E; east along the southern boundary of sections 5, 4, 3, and 2, Township 11S, Range 35E to the Papoose Flat Road at Papoose Flat; south and east on Papoose Flat Road to Mazourka Canyon Road; south and then west on Mazourka Canyon Road to Highway 395; north along Highway 395 to the point of beginning.
  - (5) Lone Pine General Methods Tule Elk Hunt:
    - (A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Mazourka Canyon Road; east and then north on Mazourka Canyon Road to the Inyo National Forest Boundary at the junction of the southern boundary of Township 12S

and the northern boundary of Township 13S; east along the southern boundary of Township 12S to Saline Valley Road; south on Saline Valley Road to Highway 190; north and then southwest on Highway 190 to the junction of Highway 395 at Olancha; north on Highway 395 to the point of beginning.

- (6) Tinemaha General Methods Tule Elk Hunt:
  - (A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Highway 168 in the town of Big Pine; north and east along Highway 168 to the junction of the Death Valley Road; south and east along the Death Valley Road to the junction of the Papoose Flat Road; south along the Papoose Flat Road to the southern boundary of Section 2, Township 11S, Range 35E; west along the southern boundaries of sections 2, 3, 4 and 5 to the terminus of the Aberdeen Station Road in Section 5, Township 11S, Range 35E; south and west along the Aberdeen Station Road to Highway 395; north along Highway 395 to the point of beginning.
- (7) West Tinemaha General Methods Tule Elk Hunt:
  - (A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Highway 168 in the town of Big Pine; south along Highway 395 to the north junction of Fish Springs Road; south along Fish Springs Road to the junction of Highway 395; south along Highway 395 to Taboose Creek in Section 14, Township 11S, Range 34E; west along Taboose Creek to the Inyo County line; north and west along the Inyo County line to the intersection of Tinemaha Creek; east along Tinemaha Creek to the intersection of McMurray Meadow Road; north on McMurray Meadow Road to the intersection of Glacier Lodge Road; north and east on Glacier Lodge Road to Crocker Avenue; east along Crocker Avenue to Highway 395; north along Highway 395 to the point of beginning.
- (8) Tinemaha Mountain General Methods Tule Elk Hunt:
  - (A) Area: In that portion of Inyo County with a line beginning at the intersection of Glacier Lodge Road (9S21) and McMurray Meadow Road (9S03); south on McMurray Meadow Road to Tinemaha Creek; west along Tinemaha Creek to the Inyo County line; north and west along the Inyo County line to the southeast corner of Section 23, Township 10S, Range 32E; north along the eastern boundaries of sections 23, 14, 11, 2, Township 10S, Range 32E, and the eastern boundary of Section 36, Township 9S, Range 32E to Glacier Lodge Road; east along Glacier Lodge Road to the beginning.
- (9) Whitney General Methods Tule Elk Hunt:
  - (A) Area: In that portion of Inyo County with a line beginning at the intersection of Highway 395 and Onion Valley Road; south on Highway 395 to the intersection of Whitney Portal Road; west along Whitney Portal Road to the northern boundary of Section 36, Township 15S, Range 34E; west along the northern boundary of sections 36, 35, 34 and 33 Township 15S, Range 34 E to the Inyo County Line; north along the Inyo County Line to the intersection of Section 27 Township 13S, range 33E; east along the southern boundary of sections 27, 26 and 25 Township 13S, Range 33E; north along the eastern boundary of Section 25 Township 13S, Range 33E to the intersection of Onion Valley Road; east along Onion Valley Road to the point of beginning.
- (10) Goodale General Methods Tule Elk Hunt:
  - (A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Onion Valley Road; west along Onion Valley Road to the intersection of the Section 25 Township 13S, Range 33E; south along the eastern boundary of Section 25 Township 13S, Range 33E to the southern boundary of Section 25 Township 13S, Range 33E; west along the southern boundary of sections 27, 26, 25 Township 13S, Range 33E to the Inyo County line; North along the Inyo County Line to Taboose Creek; east along Taboose Creek to the intersection of Highway 395; south along Highway 395 to the point of beginning.
- (11) Grizzly Island General Methods Tule Elk Hunt:
  - (A) Area: Those lands owned and managed by the Department of Fish and Game as the Grizzly Island Wildlife Area.

        - (B) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
- (12) Fort Hunter Liggett General Public General Methods Tule Elk Hunt:
    - (A) Area: That portion of Monterey County lying within the exterior boundaries of Fort Hunter Liggett, except as restricted by the Commanding Officer.
    - (B) Fort Hunter Liggett Special Conditions: See subsection 364(p).
- (13) East Park Reservoir General Methods Tule Elk Hunt:
    - (A) Area: In those portions of Glenn and Colusa counties within a line beginning in Glenn County at the junction of Interstate Highway 5 and Highway 162 at Willows; west along Highway 162 (Highway 162 becomes Alder Springs Road) to the Glenn-Mendocino County line; south along the Glenn-Mendocino County line to the Glenn-Lake County line; east and then south along the Glenn-Lake County line to the Colusa-Lake County line; west, and then southeast along the Colusa-Lake County line to Goat Mountain Road; north and east along Goat Mountain Road to the Lodoga-Stonyford Road; east along the Lodoga-Stonyford Road to the Sites-Lodoga Road at Lodoga; east along the Sites-Lodoga Road to the Maxwell-Sites Road at Sites; east along the Maxwell-Sites Road to Interstate Highway 5 at Maxwell; north along Interstate Highway 5 to the point of beginning.
    - (B) Special Conditions:
        - 1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
        - 2. Access to private land may be restricted or require payment of an access fee.
        - 3. A Colusa County ordinance prohibits firearms on land administered by the USDI Bureau of Reclamation in the vicinity of East Park Reservoir. A variance has been requested to allow use of muzzleloaders (as defined in Section 353) on Bureau of Reclamation land within the hunt zone.
- (14) San Luis Reservoir General Methods Tule Elk Hunt:
    - (A) Area: In those portions of Merced, Fresno, San Benito, and Santa Clara counties within a line beginning in Merced County at the junction of Highway 152 and Interstate 5 near the town of Santa Nella, west along Highway 152 to Highway 156 in Santa Clara County, southwest along Highway 156 to Highway 25 near the town of Hollister in San Benito County, south along Highway 25 to the town of Paicine, south and east along J1 to Little Panoche Road, North and east along Little Panoche Road to Interstate 5 in Fresno County, north along Interstate 5 to the point of beginning.
- (15) Bear Valley General Methods Tule Elk Hunt:
    - (A) Area: in those portions of Colusa, Lake, and Yolo counties within a line beginning in Colusa County at the junction of Interstate Highway 5 and Maxwell Sites Road at Maxwell; west along Maxwell Sites Road to the Sites Lodoga Road; west along the Sites Lodoga Road to Lodoga Stonyford Road; west along Lodoga Stonyford Road to Goat Mountain Road; west and south along Goat Mountain Road to the Colusa-Lake County line; south and west along the Colusa-Lake County line to Forest Route M5; south along Forest Route M5 to Bartlett Springs Road; east along Bartlett Springs Road to Highway 20; east on Highway 20 to the fork of Cache Creek; north on the north fork of Cache Creek to Indian Valley Reservoir to Walker Ridge-Indian Valley Reservoir Access Road; east on Walker Ridge-Indian Valley Reservoir Access Road to Walker Ridge Road; south on Walker Ridge Road to Highway 20; east on Highway 20 to Highway 16; south on Highway 16 to Rayhouse Road; south and west on Rayhouse Road to the Yolo-Napa County line; east and south along the Yolo-Napa County line to Road 8053; east on Road 8053 to County Road 78A; east on County Road 78A to Highway 16; east on Highway 16 to Route E4 at Capay; north and east on Route E4 to Interstate Highway 5; north on Interstate Highway 5 to the point of beginning.
- (16) Lake Pillsbury General Methods Tule Elk Hunt:
    - (A) Area: in those portions of Lake County within a line beginning at the junction of the Glenn-Lake County line and the Mendocino County line; south and west along the

Mendocino-Lake County line to Highway 20; southeast on Highway 20 to the intersection of Bartlett Springs Road; north and east along Bartlett Springs Road to the intersection of Forest Route M5; northwest on Forest Route M5 to the Colusa-Lake County Line; northwest and east on the Colusa-Lake County Line to the junction of the Glenn-Colusa County Line and the Lake-Glenn County Line; north and west on the Lake-Glenn County Line to the point of beginning.

- (17) Santa Clara General Methods Tule Elk Hunt:
  - (A) Area: Those portions of Merced, Santa Clara, and Stanislaus Counties within the following line: beginning at the intersection of the Interstate 5 and the San Joaquin/Stanislaus County line; southeast along Interstate 5 to the intersection of Highway 152; west along Highway 152 to the intersection of Highway 101 near the town of Gilroy; north along Highway 101 to the intersection of Interstate 680 near San Jose; north along Interstate 680 to the intersection of the Alameda/Santa Clara County line; east along the Alameda/Santa Clara County line to the intersection of the San Joaquin, Stanislaus, Alameda, Santa Clara County lines; northeast along the San Joaquin/Stanislaus County line to the point of beginning.
- (18) Alameda General Methods Tule Elk Hunt:
  - (A) Area: Those portions of Alameda and San Joaquin Counties within the following line: beginning at the intersection of the Interstate 5 and the San Joaquin/Stanislaus County line; southwest along the San Joaquin/Stanislaus County line to the intersection of the San Joaquin, Stanislaus, Alameda, Santa Clara County lines; west along the Alameda/Santa Clara County Line to the intersection of Interstate 680; north along Interstate 680 to the intersection of Interstate 580; east and south along Interstate 580 to the intersection of Interstate 5; south along Interstate 5 to the point of beginning.

- (e) Department Administered General Methods Apprentice Elk Hunts:
  - (1) Marble Mountains General Methods Roosevelt Elk Apprentice Hunt:
    - (A) Area: The tag shall be valid in the area described in subsection 364(a)(3)(A).
    - (B) Special Conditions: Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
  - (2) Northeastern California General Methods Rocky Mountain Elk Apprentice Hunt:
    - (A) Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).
    - (B) Special Conditions: Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt License tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
  - (3) Cache Creek General Methods Tule Elk Apprentice Hunt:
    - (A) Area: The tag shall be valid in the area described in subsection 364(d)(1)(A).
    - (B) Special Conditions:
      - 1. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
  - (4) La Panza General Methods Tule Elk Apprentice Hunt:
    - (A) Area: The tag shall be valid in the area described in subsection 364(d)(2)(A).
    - (B) Special Conditions:
      - 1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
      - 2. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunter tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
  - (5) Bishop General Methods Tule Elk Apprentice Hunt:
    - (A) Area: The tag shall be valid in the area described in subsection 364(d)(3)(A).

        - (B) Special Conditions: Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
    - (6) Grizzly Island General Methods Tule Elk Apprentice Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
        - (B) Special Conditions:
            - 1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
            - 2. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
    - (7) Fort Hunter Liggett General Methods General Public Tule Elk Apprentice Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).
        - (B) Special Conditions: See subsection 364(p).
        - (C) Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
- (f) Department Administered Archery Only Elk Hunts:
    - (1) Northeastern California Archery Only Rocky Mountain Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).
        - (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
    - (2) Owens Valley Multiple Zone Archery Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in areas described in subsections 364(d)(3)(A), (d)(4)(A), (d)(5)(A), and (d)(10)(A).
        - (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
    - (3) Lone Pine Archery Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(5)(A).
        - (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
    - (4) Tinemaha Archery Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(6)(A).
        - (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
    - (5) Whitney Archery Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(9)(A).
        - (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
    - (6) Fort Hunter Liggett General Public Archery Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).
        - (B) Special Conditions: See subsection 364(p).
        - (C) Elk may be taken with Archery Equipment only as specified in Section 354.
- (g) Department Administered Muzzleloader Only Elk Hunts:
    - (1) Bishop Muzzleloader Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(3)(A).
        - (B) Special Conditions: Elk may be taken with muzzleloader equipment only as specified in Section 353.
    - (2) Independence Muzzleloader Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(4)(A).
        - (B) Special Conditions: Elk may be taken with muzzleloader equipment only as specified in Section 353.
    - (3) Fort Hunter Liggett General Public Muzzleloader Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).
        - (B) Special Conditions: See subsection 364(p).

        - (C) Elk may be taken with Muzzleloader Equipment only as specified in Section 353.
- (h) Department Administered Muzzleloader/Archery Only Elk Hunts:
    - (1) Marble Mountains Muzzleloader/Archery Only Roosevelt Elk Hunt.
        - (A) Area: The tag shall be valid in the area described in subsection 364(a)(3)(A).
        - (B) Special Conditions: Elk may be taken with archery or muzzleloader equipment only as specified in Sections 353 and 354.
- (i) Fund Raising Elk Hunts:
    - (1) Multi-zone Fund Raising Elk Hunt.
        - (A) Area: The tag shall be valid in the areas described in subsections 364(a)(1)(A), (a)(2)(A), (a)(3)(A), (b)(1)(A), and (d)(2)(A).
    - (2) Grizzly Island Fund Raising Tule Elk Hunt.
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
        - (B) Special Conditions: Advance reservations required by contacting the Grizzly Island Wildlife Area by telephone at (707) 425-3828.
    - (3) Owens Valley Fund Raising Tule Elk Hunt
        - (A) Area: The tag shall be valid in areas described in subsections 364(d)(3)(A), (d)(4)(A), (d)(5)(A), (d)(6)(A), (d)(7)(A), (d)(8)(A), (d)(9)(A), and (d)(10)(A).
- (j) Military Only Elk Hunts. These hunts are sponsored and tag quotas are set by the Department. The tags are assigned and the hunts are administered by the Department of Defense.
    - (1) Fort Hunter Liggett Military Only General Methods Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).
        - (B) Special Conditions: See subsection 364(p).
    - (2) Fort Hunter Liggett Military Only General Methods Tule Elk Apprentice Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).
        - (B) Special Conditions: See subsection 364(p).
        - (C) Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
    - (3) Fort Hunter Liggett Military Only Archery Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).
        - (B) Special Conditions: See subsection 364(p).
        - (C) Elk may be taken with Archery Equipment only as specified in Section 354.
    - (4) Fort Hunter Liggett Military Only Muzzleloader Only Tule Elk Hunt:
        - (A) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).
        - (B) Special Conditions: See subsection 364(p).
- (k) Bag and Possession Limit: Each elk tag is valid only for one elk per season and only in the hunt area drawn.
- (l) Definitions:
    - (1) Bull elk: Any elk having an antler or antlers at least four inches in length as measured from the top of the skull.
    - (2) Spike bull: A bull elk having no more than one point on each antler. An antler point is a projection of the antler at least one inch long and longer than the width of its base.
    - (3) Antlerless elk: Any elk, with the exception of spotted calves, with antlers less than four inches in length as measured from the top of the skull.
    - (4) Either-sex elk: For the purposes of these regulations, either-sex is defined as bull elk, spike elk, or antlerless elk.
- (m) Method of Take: Only methods for taking elk as defined in Sections 353 and 354 may be used.
- (n) Tagholder Responsibilities:
    - (1) No tagholder shall take or possess any elk or parts thereof governed by the regulations except herein provided.
    - (2) The department reserves the right to use any part of the tagholder's elk for biological analysis as long as the amount of edible meat is not appreciably decreased.
    - (3) Any person taking an elk which has a collar or other marking device attached to it shall provide the department with such marking device within 10 days of taking the elk.
- (o) The use of dogs to take or attempt to take elk is prohibited.
- (p) Fort Hunter Liggett Special Conditions:

- (1) All tagholders hunting within the exterior boundaries of Fort Hunter Liggett will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.
- (2) Tagholders hunting within the exterior boundaries of Fort Hunter Liggett shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
- (3) All successful tagholders hunting within the exterior boundaries of Fort Hunter Liggett will be required to have their tags validated on Fort Hunter Liggett prior to leaving.
- (4) Due to military operations and training, the specified season dates within the exterior boundaries of Fort Hunter Liggett are subject to further restriction, cancellation, or may be rescheduled, between August 1 and January 31, by the Commanding Officer.

- (q) [subsection reserved]

(r) Department Administered General Methods Roosevelt Elk Hunts

Hunt	1. Bull Tags	2. Antlerless Tags	3 Either-Sex Tags	4. Spike Tags	5. Season
(1)(A) Siskiyou	20	20			Shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.
(2)(A) Northwestern	15	0	3		Shall open on the first Wednesday in September and continue for 23 consecutive days.
(3)(A) Marble Mountains	35	10			Shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.

(s) Department Administered General Methods Rocky Mountain Elk Hunts

Hunt		1. Bull Tags	2. Antlerless Tags	3 Either-Sex Tags	4. Spike Tags	5. Season
(1)	(A) Northeastern California Bull	15				The bull season shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days.
	(B) Northeastern California Antlerless		10			The antlerless season shall open on the second Wednesday in November and continue for 12 consecutive days.

(t) Department Administered General Methods Roosevelt/Tule Elk Hunts					
Hunt	**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**5. Season**
(1)(A) Mendocino	2	0			The season shall open on the Wednesday preceding the fourth Saturday in September and continue for 12 consecutive days.

(u) Department Administered General Methods Tule Elk Hunts						
Hunt		**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**5. Season**
(1)	Cache Creek					
	(A) Bull	2				The Bull season shall open on the second Saturday in October and continue for 16 consecutive days.
	(B) Antlerless		2			The Antlerless season shall open on the third Saturday in October and continue for 16 consecutive days.
(2)	La Panza					
	(A) Period 1	6	5			Shall open on the second Saturday in October and extend for 23 consecutive days.
	(B) Period 2	6	6			Shall open on the second Saturday in November and extend for 23 consecutive days.
(3)	Bishop					
	(A) Period 3	0	0			Shall open on the third Saturday in October and extend for 9 consecutive days.
	(B) Period 4	0	0			Shall open on the first Saturday in November and extend for 9 consecutive days.
	(C) Period 5	0	0			Shall open on the first Saturday in December and continue for 9 consecutive days.
(4)	Independence					

	(A) Period 2	1	1			Shall open on the first Saturday in October and extend for 9 consecutive days.
	(B) Period 3	1	1			Shall open on the third Saturday in October and extend for 9 consecutive days.
	(C) Period 4	0	1			Shall open on the first Saturday in November and extend for 9 consecutive days.
	(D) Period 5	0	0			Shall open on the first Saturday in December and continue for 9 consecutive days.
(5)	Lone Pine					
	(A) Period 2	1	1			Shall open on the first Saturday in October and extend for 9 consecutive days.
	(B) Period 3	1	1			Shall open on the third Saturday in October and extend for 9 consecutive days.
	(C) Period 4		0			Shall open on the first Saturday in November and extend for 9 consecutive days.
	(D) Period 5	0	0			Shall open on the first Saturday in December and continue for 9 consecutive days.
(6)	Tinemaha					
	(A) Period 2	0	0			Shall open on the first Saturday in October and extend for 9 consecutive days.
	(B) Period 3	0	0			Shall open on the third Saturday in October and extend for 9 consecutive days.
	(C) Period 4	0	0			Shall open on the first Saturday in November and extend for 9 consecutive days.
	(D) Period 5	0	0			Shall open on the first Saturday in December and continue for 9 consecutive days.
(7)	West Tinemaha					
	(A) Period 1	0	0			Shall open on the second Saturday in September and extend for 16 consecutive days.

	(B) Period 2	0	0			Shall open on the first Saturday in October and extend for 9 consecutive days.
	(C) Period 3	0	0			Shall open on the third Saturday in October and extend for 9 consecutive days.
	(D) Period 4	0	0			Shall open on the first Saturday in November and extend for 9 consecutive days.
	(E) Period 5	0	0			Shall open on the first Saturday in December and continue for 9 consecutive days.
(8)	Tinemaha Mountain					
	(A) Period 1	0				Shall open on the second Saturday in September and extend for 16 consecutive days.
	(B) Period 2	0				Shall open on the first Saturday in October and extend for 9 consecutive days.
	(C) Period 3	0				Shall open on the third Saturday in October and extend for 9 consecutive days.
	(D) Period 4	0				Shall open on the first Saturday in November and extend for 9 consecutive days.
	(E) Period 5	0				Shall open on the first Saturday in December and continue for 9 consecutive days.
(9)	Whitney					
	(A) Period 2	0	1			Shall open on the first Saturday in October and extend for 9 consecutive days.
	(B) Period 3	0	0			Shall open on the third Saturday in October and extend for 9 consecutive days.
	(C) Period 4	0	0			Shall open on the first Saturday in November and extend for 9 consecutive days.
	(D) Period 5	0	0			Shall open on the first Saturday in December and continue for 9 consecutive days.
(10)	Goodale					

	(A) Period 1	0	0			Shall open on the second Saturday in September and extend for 16 consecutive days.
	(B) Period 2	0	1			Shall open on the first Saturday in October and extend for 9 consecutive days.
	(C) Period 3	0	1			Shall open on the third Saturday in October and extend for 9 consecutive days.
	(D) Period 4	0	0			Shall open on the first Saturday in November and extend for 9 consecutive days.
	(E) Period 5	0	0			Shall open on the first Saturday in December and extend for 9 consecutive days
(11)	Grizzly Island					
	(A) Period 1	0	6		0	Shall open on the second Tuesday after the first Saturday in August and continue for 4 consecutive days.
	(B) Period 2	0	2		4	Shall open on the first Thursday following the opening of period one and continue for 4 consecutive days.
	(C) Period 3	0	6		0	Shall open on the first Tuesday following the opening of period two and continue for 4 consecutive days.
	(D) Period 4	0	4		2	Shall open on the first Thursday following the opening of period three and continue for 4 consecutive days.
	(E) Period 5	0	8		0	Shall open on the first Tuesday following the opening of period four and continue for 4 consecutive days.
	(F) Period 6	0	0		0	Shall open on the first Thursday following the opening of period five and continue for 4 consecutive days.
	(G) Period 7	0	8		0	Shall open on the first Tuesday following the opening of period six and continue for 4 consecutive days.
	(H) Period 8	0	0		6	Shall open on the first Thursday following the opening

						of period seven and continue for 4 consecutive days.
	(I) Period 9	0	8		0	Shall open on the first Tuesday following the opening of period eight and continue for 4 consecutive days.
	(J) Period 10	3	0		0	Shall open on the first Thursday following the opening of period nine and continue for 4 consecutive days.
	(K) Period 11	0	8		0	Shall open on the first Tuesday following the opening of period ten and continue for 4 consecutive days.
	(L) Period 12	3			0	Shall open on the first Thursday following the opening of period eleven and continue for 4 consecutive days.
	(M) Period 13	0	8		0	Shall open on the first Tuesday following the opening of period twelve and continue for 4 consecutive days.
(12)	Fort Hunter Liggett General Public					
	(A) Period 1	0	0			Shall open on the first Thursday in November and continue for 9 consecutive days.
	(B) Period 2	0	0			Shall open on November 22 and continue for 9 consecutive days.
	(C) Period 3	0	0			Shall open on the third Saturday in December and continue for 16 consecutive days.
(13)(A) East Park Reservoir		2	2			Shall open on the first Saturday in September and continue for 27 consecutive days.
(14)(A) San Luis Reservoir		0	0	5		Shall open on the first Saturday in October and continue for 23 consecutive days.
(15)(A) Bear Valley		2	1			Shall open on the second Saturday in October and continue for 9 consecutive days.
(16)	Lake Pillsbury					

	(A) Period 1		4			Shall open on the Wednesday preceding the second Saturday in September and continue for 10 consecutive days.
	(B) Period 2	2				Shall open Monday following the fourth Saturday in September and continue for 10 consecutive days.
(17)(A) Santa Clara		0	0			Shall open on the second Saturday in October and continue for 16 consecutive days.
(18)(A) Alameda		0	0			Shall open on the second Saturday in October and continue for 16 consecutive days.
(v) Department Administered Apprentice Hunts						
Hunt		**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**5. Season**
(1)(A) Marble Mountain General Methods Roosevelt Elk Apprentice				2		Shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.
(2)(A) Northeast California General Methods Rocky Elk Apprentice				2		Shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days.
(3)(A) Cache Creek General Methods Tule Elk Apprentice		1	0			Shall open on the second Saturday in October and continue for 16 consecutive days.
(4)(A) La Panza General Methods Tule Elk Apprentice		0	1			Shall open on the second Saturday in October and extend for 23 consecutive days.
(5)(A) Bishop General Methods Tule Elk Apprentice Period 2		0	0			Shall open on the first Saturday in October and extend for 9 consecutive days.
(6)	Grizzly Island General Methods Tule Elk Apprentice					
	(A) Period 1		3		0	Shall open on the second Tuesday after the first Saturday in August and continue for 4 consecutive days.
	(B) Period 2		0		2	Shall open on the first Thursday following the opening

						of period one and continue for 4 consecutive days.
	(C) Period 3		3		0	Shall open on the first Tuesday following the opening of period two and continue for 4 consecutive days.
	(D) Period 4		0		2	Shall open on the first Thursday following the opening of period three and continue for 4 consecutive days.
(7)(A) Fort Hunter Liggett General Public General Methods Apprentice		0	0			Shall open on the third Saturday in December and continue for 16 consecutive days.
(w) Department Administered Archery Only Hunts						
Hunt		**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**5. Season**
(1)(A) Northeast California Archery Only		0	0	10		Shall open on the Wednesday preceding the first Saturday in September and continue for 12 consecutive days.
(2)(A) Owens Valley Multiple Zone Archery Only		3	0			Shall open on the second Saturday in August and extend for 9 consecutive days.
(3)(A) Lone Pine Archery Only Period 1		0	1			Shall open on the second Saturday in September and extend for 16 consecutive days.
(4)(A) Tinemaha Archery Only Period 1		0	0			Shall open on the second Saturday in September and extend for 16 consecutive days.
(5)(A) Whitney Archery Only Period 1		0	0			Shall open on the second Saturday in September and extend for 16 consecutive days.
(6)	Fort Hunter Liggett					
	(A) General Public Archery Only Either Sex			3		Shall open on the last Wednesday in July and continue for 9 consecutive days.
	(B) General Public Archery Only Antlerless		4			Shall open on theTuesday preceding the fourth Thursday in November and continue for 9 consecutive days.

(x) Department Administered Muzzleloader Only Tule Elk Hunts					
Hunt	**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**5. Season**
(1)(A) Bishop Muzzleloader Only Period 1	0	0			Shall open on the second Saturday in September and extend for 16 consecutive days.
(2)(A) Independence Muzzleloader Only Period 1	1	0			Shall open on the second Saturday in September and extend for 16 consecutive days.
(3)(A) Goodale Muzzleloader Only Period 1	0	1			Shall open on the second Saturday in September and extend for 16 consecutive days.
(4)(A) Fort Hunter Liggett General Public Muzzleloader Only	0	0			Shall open on the third Saturday in December and continue for 17 consecutive days.
(y) Department Administered Muzzleloader/Archery Only Hunts					
Hunt	**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**5. Season**
(1)(A) Marble Mountain Muzzleloader/Archery Roosevelt Elk			5		Shall open on the last Saturday in October and extend for 9 consecutive days.
(z) Fund Raising Elk Tags					
Hunt	**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**5. Season**
(1)(A) Multi-zone Fund Raising Tags	1				Siskiyou and Marble Mountains Roosevelt Elk Season shall open on the Wednesday preceding the first Saturday in September and continue for 19 consecutive days. Northwestern Roosevelt Elk Season shall open on the last Wednesday in August and continue for 30 consecutive days. Northeastern Rocky Mountain Elk Season shall open on the

					Wednesday preceding the last Saturday in August and continue for 33 consecutive days. La Panza Tule Elk Season shall open on the first Saturday in October and extend for 65 consecutive days.
(2)(A) Grizzly Island Fund Raising Tags		1			Shall open on the first Saturday in August and continue for 30 consecutive days
(3)(A) Owens Valley Fund Raising Tags		1			Shall open on the last Saturday in July and extend for 30 consecutive days.
(aa) Military Only Tule Elk Hunts					
Hunt		**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**5. Season**
(1)	Fort Hunter Liggett Military Only General Methods					
	(A) Early Season	0	0			The early season shall open on the second Monday in August and continue for 5 consecutive days and reopen on the fourth Monday in August and continue for 5 consecutive days.
	(B) Period 1		0			Shall open on the first Thursday in November and continue for 9 consecutive days.
	(C) Period 2		0			Shall open November 22 and continue for 9 consecutive days.
	(D) Period 3	0				Shall open on the third Saturday in December and continue for 16 consecutive days.
(2)(A) Fort Hunter Liggett Military Only General Methods Apprentice		0	0			Shall open on the third Saturday in December and continue for 16 consecutive days.
(3) Fort Hunter Liggett Military Only Archery Only						
	(A) Either sex			3		Shall open on the last Wednesday in July and

						continue for 9 consecutive days.
	(B) Antlerless		4			Shall open on the last Wednesday in September and continue for 9 consecutive days.
(4)(A) Fort Hunter Liggett Military Only Muzzleloader Only		4				Shall open on the third Saturday in December and continue for 17 consecutive days.

Amendment filed 7/17/2017; effective 7/17/2017

§364.1, Title 14, CCR Department Administered Shared Habitat Alliance for Recreational Enhancement (SHARE) Elk Hunts

- (a) Season: The overall season shall open August 15 through January 31. Individual SHARE properties will be assigned seasons corresponding with management goals.
- (b) Bag and Possession Limit: Each elk tag is valid only for one elk per season and only in the SHARE hunt area drawn, and persons shall only be eligible for one elk tag per season through sections 364 or 364.1.
- (c) Individual property boundaries will be identified in the SHARE application package.
- (d Method of Take: Only methods for taking elk as defined in Sections 353 and 354 may be used.
- (e) Tagholder Responsibilities: See subsection 364(n)
- (f) The use of dogs to take or attempt to take elk is prohibited.
- (g) Applicants shall apply for a SHARE Access Permit, and pay a nonrefundable application fee as specified in Section 602, through the department's Automated License Data System terminals at any department license agent, department license sales office, or online.
- (h) Upon receipt of winner notification, successful applicants shall submit the appropriate tag fee as specified in Section 702 through any department license sales office or online through the department's Automated License Data System.

(i) Department Administered SHARE Roosevelt Elk Hunts					
Hunt	**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**(B) Area**
(1)(A) Siskiyou	2	2			Area: The tag shall be valid in the area described in subsection 364(a)(1)(A).
(2)(A) Northwestern	7	20			Area: The tag shall be valid in the area described in subsection 364(a)(2)(A).
(3)(A) Marble Mountain	0	0			Area: The tag shall be valid in the area described in subsection 364(a)(3)(A).

(j) Department Administered General Methods SHARE Rocky Mountain Elk Hunts					
Hunt	**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**(B) Area**
(1)(A) Northeast California	0	0			Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).
(k) Department Administered SHARE Roosevelt/Tule Elk Hunts					
Hunt	**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**(B) Area**
(1)(A) Mendocino	2	4			Area: The tag shall be valid in the area described in subsection 364(c)(1)(A).
(*l*) Department Administered SHARE Tule Elk Hunts					
Hunt	**1. Bull Tags**	**2. Antlerless Tags**	**3 Either-Sex Tags**	**4. Spike Tags**	**(B) Area**
(1)(A) Cache Creek	1	1			Area: The tag shall be valid in the area described in subsection 364(d)(1)(A).
(2)(A) La Panza	5	10			Area: The tag shall be valid in the area described in subsection 364(d)(2)(A).
(3)(A) Bishop	0	0			Area: The tag shall be valid in the area described in subsection 364(d)(3)(A).
(4)(A) Independence	0	0			Area: The tag shall be valid in the area described in subsection 364(d)(4)(A).
(5)(A) Lone Pine Period 2	0	0			Area: The tag shall be valid in the area described in subsection 364(d)(5)(A).
(6)(A) Tinemaha	0	0			Area: The tag shall be valid in the area described in subsection 364(d)(6)(A).
(7)(A) West Tinemaha	0	0			Area: The tag shall be valid in the area described in subsection 364(d)(7)(A).
(8)(A) Tinemaha Mountain	0				Area: The tag shall be valid in the area described in subsection 364(d)(8)(A).
(9)(A) Whitney	0	0			Area: The tag shall be valid in the area described in subsection 364(d)(9)(A).

(10)(A) Goodale	0	0			Area: The tag shall be valid in the area described in subsection 364(d)(10)(A).
(11)(A) Grizzly Island	0	0		0	Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
(12)(A) Fort Hunter Liggett	0	0			Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).
(13)(A) East Park Reservoir	1	1			Area: The tag shall be valid in the area described in subsection 364(d)(13)(A).
(14)(A) San Luis Reservoir	2	3			Area: The tag shall be valid in the area described in subsection 364(d)(14)(A).
(15)(A) Bear Valley	1	1			Area: The tag shall be valid in the area described in subsection 364(d)(15)(A).
(16)(A) Lake Pillsbury	0	0			Area: The tag shall be valid in the area described in subsection 364(d)(16)(A).
(17)(A) Santa Clara	0				Area: The tag shall be valid in the area described in subsection 364(d)(17)(A).
(18)(A) Alameda	0				Area: The tag shall be valid in the area described in subsection 364(d)(18)(A).

Amended 7/17/2017; effective 7/17/2017.

Appendix 6 – 2018 Elk Tags Issued and Harvested on PLM Ranches in the Northwestern Elk Zone

PLM Name	County	Authorized Harvest	Elk Tags Issued		Harvest	
			Bull	Antlerless	Bull	Antlerless
Alexandre Ecodairy Farms	Del Norte	2 bull elk and 4 antlerless elk	2	4	2	4
Big Lagoon	Humboldt	4 bull elk and 2 antlerless elk	4	2	4	2
Cottrell Ranch	Humboldt	12 deer of which no more than 10 may be antlerless deer, 1 bull elk, and 1 antlerless elk	1	1	1	1
Hunter Ranch	Humboldt	20 deer of which no more than 5 may be antlerless deer and 1 bull elk	1	0	1	0
Klamath PLM	Humboldt	2 bull elk and 2 antlerless elk	2	2	2	1
Redwood House Ranch	Humboldt	20 buck deer forked horn or better and 1 bull elk	1	0	0	0
Smith River	Del Norte	4 bull elk and 6 antlerless elk	4	6	3	5
Stover Ranch	Humboldt	4 bull elk and 2 antlerless elk	4	2	4	1
Wiggins Ranch	Humboldt	2 bull elk and 2 antlerless elk	2	2	2	2
		Totals	**21**	**19**	**19**	**16**

Appendix 7. Section 555, Title 14, CCR

§ 555. Cooperative Elk Hunting Areas.

To encourage protection and enhancement of elk habitat and provide eligible landowners an opportunity for limited elk hunting on their lands, the department may establish cooperative elk hunting areas and issue license tags to allow the take of elk as specified in Section 364, and subject to the following conditions:

(a) Definition and Scope. A cooperative elk hunting area is an area of private land located within the boundary of an area open to public elk hunting (as identified in Section 364). Minimum size of a cooperative elk hunting area shall be 5,000 acres, except that contiguous parcels of at least 640 acres in size may be combined to comprise a cooperative elk hunting area. Within an area open to public elk hunting, the number of cooperative elk hunting license tags issued shall not exceed 20 percent of the number of public license tags for the corresponding public hunt and shall be of the same designation (i.e., antlerless, spike bull, bull or either-sex) as the public license tags.

(b) Application Process. Application forms are available from the department's headquarters and regional offices. A person (as defined by Fish and Game Code Section 67) owning at least 640 acres within a cooperative elk hunting area shall be eligible to apply for a cooperative elk hunting area permit. Applicants shall designate one individual eligible to receive one elk license tag by the date indicated under subsection (3) below. Such individuals shall be at least 12 years of age and possess a valid California hunting license. A person may annually submit a cooperative elk hunting area application where they own sufficient habitat as described in subsection (a) above, for each public hunt area in which their property occurs.

(1) Applications shall be submitted to the department's regional office nearest the proposed cooperative elk hunting area. Department of Fish and Game regional offices are located as follows:

Northern California and North Coast Region, 601 Locust Street, Redding 96001 (530) 225-2300

Sacramento Valley and Central Sierra Region, 1701 Nimbus Road, Rancho Cordova 95670 (916) 358-2900

Central Coast Region, 7329 Silverado Trail, Box 47, Yountville 94599 (707) 944-5500

San Joaquin Valley and Southern Sierra Region, 1234 East Shaw Avenue, Fresno 93710 (559) 243-4005

South Coast Region, 4949 View Crest Avenue, San Diego 92123 (858) 467-4201

Eastern Sierra and Inland Deserts Region, 4775 Bird Farm Road, Chino Hills 91709 (909) 597-9823

(2) Completed applications must be received by the first business day following July 1. Only those applications that are filled out completely will be accepted. The Department will evaluate applications to determine if the specified parcels are of sufficient size within the boundary of a public elk hunt area, and contain important elk habitat. Rejected applications and those that are incomplete will be returned within 15 days of receipt by

the department. If the number of accepted applications exceeds the license tags available, the department will determine successful applicants and a list of alternates by conducting a random drawing from the pool of qualified applicants as soon as possible after the application deadline. For any license year that the demand for cooperative elk hunting license tags within an area open to public hunting (as identified in Section 364) exceeds the number of tags available, tags will be first issued to applicants that did not receive a tag the previous year. If the quota is not filled, tags will be issued to the remaining applicants by random drawing.
(3) Successful applicants will be notified by the department as soon as possible after the application deadline. Applicants shall submit the name, address, and valid California hunting license number of designated elk license tag recipients and payment of elk license tag fees by check, money order, or credit card authorization in the amount specified by subsection 702(b)(1)(L)(M), to the department's regional office nearest the proposed cooperative elk hunting area, by the first business day following August 1.
(c) An elk license tag issued pursuant to the provisions of this section is valid only during the general elk season in which the cooperative elk hunting area occurs and shall only be used on land specified in the landowner's application. License tags are not transferable.
(d) All provisions of the Fish and Game Code and Title 14, CCR, relating to the take of birds and mammals shall be conditions of all license tags issued pursuant to this section.
(e) Any permit issued pursuant to Section 555 may be canceled or suspended at any time by the commission for cause after notice and opportunity to be heard, or without a hearing upon conviction of a violation of this regulation by a court of competent jurisdiction.

Note: Authority cited: Section 1575, Fish and Game Code. Reference: Sections 67 and 1575, Fish and Game Code.

Comments on the "Draft Supplemental Environmental Document", Elk Hunting, dated Feb. 14, 2019

Phoebe Lenhart

Wed 04/03/2019 01:30 PM

To:FGC <FGC@fgc.ca.gov>;

To whom it may concern:

I appreciate the opportunity to review the "Draft Supplemental Environmental Document", Elk Hunting (DSED), dated Feb. 14, 2019. It is unfortunate that the same ignorance that existed in the original "elk management plan" is perpetuated by the DFW/FGC in this aforementioned "Draft Supplemental Environmental Document" (DSED). See below:

1) "ELK POP". Four years ago I wrote to Joe Hobbs (DFW) and questioned the DFW's use of a 1987 computer model by Smith and Updike (pg. 21). This computer model program is valid for only "2-10 (at the maximum) years". Today, over 30 YEARS LATER, the DFW/FGC continue to generate "fake news" based upon these "fake figures". I think this is appalling and is NOT acceptable. In my opinion, all the "computer model runs" have no credibility, along with the rest of the DSED. Given the above, it appears to me that the DFW/FGC cannot make any legitimate claims about the population of the Roosevelt or set any responsible hunting quotas using this obsolete "computer model". This is the 21st Century, in case the DFW/FGC are not aware of the progress in technology.

I think the DFW/FGC will have much to learn if they would read the reports on the Roosevelt elk researched by the Redwood National and State Parks (RNSP). The RNSP conduct authentic research that is professional.

2) POPULATION OF THE ROOSEVELT ELK IN THE NORTHWEST ZONE. Given the above (#1), the "fake news" and the "fake figures" (based on a computer model that is over 30 years beyond its suggested use), it is obvious to me why I consider the DFW/FGC's DSED fallacious. The DFW/FGC report that there are 1,600 Roosevelt elk (pg. 22), this may be nothing more than a concocted number with no validity.

Again, I refer the DFW/FGC to read the relevant research done by the RNSP.

3)CULLING OF ROOSEVELT ELK BULLS. The DFW/FGC recommends maintaining a ratio of 25 bulls for every 100 cows (pg. 24). The scientific community considers this to be a minimum ratio of bulls for every 100 cows. BUT, the DFW/FGC contradicts their own recommendations and reduces the number of bulls (for 100 cows) to 15 in the Northwest zone!!! The DFW/FGC provides no scientific research behind their decision. I have spoken to reputable biologists who state that a ratio of 15 bulls for every 100 cows is NOT SUSTAINABLE!!! Please provide an explanation to myself and the public for your digression.

Please note, the DFW/FGC does not appear to value the "mature" bulls for their survivorship. Rather than protect the older bulls, with the largest racks, the DFW/FGC condescend to the "trophy hunters". I believe this is contrary to Darwin's theory of natural selection and is another example of poor stewardship by the DFW/FGC.

4) CALF MORTALITY. The DFW/FGC claim that calf mortality is "low" (pg. 19). This is NOT agreed upon by reputable biologists. Their research indicates that Roosevelt elk mortality rates are "high". Refer again to the above (#1).

5) PROJECTIONS. The DFW/FGC present SPECULATION in this DSED (pg. 6) in the form of "alternatives". The DFW/FGC select arbitrary numbers of increases by 10, 20 or 60 tags. It sounds to me that the DFW/FGC are treating the management of the Roosevelt elk as nothing more than a crapshoot. I believe that the hunting allowance is NOT determined by "fake news" and "fake figures", but done by scientifically documented research about what is good stewardship for the herds.

6) PLM AND SHARE HUNTS The additional Roosevelt elk, in particular, the mature bulls, killed in the PLM and SHARE programs indicate a tendency for the killing of bulls to be increasing. These programs are very deceiving since the Roosevelt elk killed are reported on separate tables. I would like more transparency within the DFW/FGC by incorporating the PLM and SHARE hunts on the same tables with the general hunt.

Please explain why, in 2018, there were 15 tags issued to kill bulls, BUT 18 were killed (pg. 18)? Please explain.

7) "THE COMMITTEE" The DFW/FGC does not address the composition of "the committee" in the DSED. As I recall, DFW/FGC gave 2 positions to the Rocky Mountain Elk Foundation and no positions were assigned to any conservation groups. I think this is not fair and is biased. I would like one of the Rocky Mountain Elk Foundation's seats to be assigned to a conservation group.

8) BIBLIOGRAPHY Four years ago I wrote to Joe Hobbs (DFW) and shared with him my observation that the bibliography for the "Draft Environmental Document", dated Dec. 8, 2015 was lacking current scientific research and was very obsolete. In comparison, the DSED (dated Feb. 14, 2019) continues to present the same deficiencies and a lack for current research. In particular, there is an obvious omission of the reputable research done by the RNSP. I insist that this change as the RNSP has so much to offer to DFW/FGC about their research done on the Roosevelt elk.

The Supporters for Del Norte Roosevelt Elk have been working with the DFW/FGC for over 4 years on behalf of the Roosevelt elk in Del Norte County. I have provided both agencies with relevant suggestions based on scientists' research pertaining to the good stewardship of the Roosevelt elk. Hundreds of thousands of Roosevelt elk were slaughtered by hunters to near extinction around 100 years ago. I am insulted by the DFW/FGC's DSED and suggest that it be re-done without the "fake news" and "fake figures".

Sincerely,

Phoebe Lenhart

Supporters for Del Norte Roosevelt Elk

Friends of Del Norte

Conserving our Natural Heritage Since 1973

Protecting the Wildlands, Waters and Wildlife
Of the Del Norte County Region

P.O. Box 144, Crescent City, CA 95531 707 954-1969 or 707 465-8904

April 4, 2019

Transmitted by email on this date to the California Department of Fish & Wildlife
Via staff addresses below:
Victoria.Barr@wildlife.ca.gov; fgc@fgc.ca.gov

California Fish and Game Commission
Valerie Termini, Executive Director
P.O. Box 944209
Sacramento, CA 94244-2090

Dear Commissioners and Staff:

We are submitting this today to meet the deadline for inclusion in the packet for Fish & Game Commissioners for their April meeting. Thank you as always for the opportunity to participate in this process. These comments focus on the North Coast Roosevelt Elk Management Unit, (also referred to as Northwestern California Hunt Zone). The "Document" referenced throughout these comments is the Draft Supplemental Environmental Document ELK HUNTING prepared by California Department of Fish & Wildlife (CDFW) and dated February 14, 2019.

Summary

We appreciate that CDFW integrated their presentation to discuss the combined impacts of all hunt categories (PLM, SHARE, General), in response to our scoping comments. This makes the process more transparent and less fragmented. However, you have a legal obligation to address our other scoping comments, which CDFW fails to do. (Our

scoping comments follow in Appendix B.)

Unfortunately the CDFW Document is outdated and contains critical misrepresentations, errors, and incomplete analysis. Historical and relevant harvest numbers that we have been provided by the California Department of Fish & Wildlife upon request, as well as important and relevant 2017—2019 elk count numbers and longer-term studies that are available from Redwood National & State Parks should be made part of the record and presented to the public and to the Commissioners with a review period to allow informed decisions. The Parks are in the heart of the Northwestern Hunt Zone, but their data is ignored. We have made this comment many times before. (See Attachments and Appendices.) The Elk Pop computer model scenarios should be re-calculated to correct errors and misrepresentations, which will change the results and cause the entire document to be re-issued. Otherwise CDFW is vulnerable to legal challenge.

CDFW's failure to provide historic data and paint the "big picture" for the public means that this Document is fragmenting and obscuring the CEQA process, again leaving the public and the Commissioners without the necessary tools for judgement.

We are aware that the general public in Del Norte is excited about the return of the Roosevelt elk. Yet the comments that we and other regional non-profit organizations have made repeatedly, since 2015, regarding these elk hunts and the Statewide Management Plan are for the most part ignored in CDFW final documents. CDFW has a legal obligation to address all comments, and the Commissioners, based on their new mission statement, want to see a fully transparent and accessible process allowing meaningful public participation. Instead this Document emphasizes only and repeatedly the **conflicts** with elk. It suggests to us that commercial interests have the ear of CDFW, which does not give proportional voice to non-profit groups that represent memberships of the public.

Moreover the CDFW strategy appears concerned *only* with *shooting* elk, even now signaling their intent to make greater use of depredation permits. We have previously suggested alternative solutions to "conflicts" which CDFW has ignored, such as: providing financial assistance for elk fencing, shown to be effective for small ranches; conservation easements on larger ranches to support elk corridors to allow movement between coastal and upland environments, and elk overcrossings and undercrossings.

The CDFW strategy violates the Statewide Elk Management Plan, which recommends making public lands more attractive to elk as an alternative; in Del Norte County 80+% of the land is public trust land and in concept available for elk.

We note that today April 4th the California Wildlife Conservation Board has announced that the " Wildlife Corridor and Fish Passage solicitation under Proposition 68 is now available. Priorities include construction of wildlife overcrossings and undercrossings, restoration of natural habitats that provide a visual screen in wildlife corridors..."

Our organization finds that it cannot support any of the project alternatives, because of the errors in the analysis. Even if we wanted to support the "current conditions/no project" alternative, we could not because it is not clear what number this would be, 65 or 80, and it is not clear what impacts this is already having or will have in future. We would like to see further growth in the herds (so that the Roosevelt elk herds re-occupy all of their historic range) based on actual counts or based on a clear, detailed explanation of what the actual counts are; how they are collected, and how population numbers are derived from actual counts. There is no alternative in the Document that allows this.

1) Errors, Inconsistencies and Misrepresentations in Document

A summary of all past elk harvest for the Northwest hunt provided by CDFW is contained in our Appendix A, except that 2018 harvest numbers are given on page 18 of the Document (as total 2018 harvested hunt, PLM, SHARE, General, was: bulls: 45 + antlerless 35 = 80.) As clearly stated on page 6 of the Document, *the baseline or current condition is 2018/2019 for the no project alternative*, which is the harvest of about 80. Yet the Elk pop model run for the no project alternative uses only 65 elk.

The historic progression of the harvest is summarized:

2013- total harvest 45
2014- total harvest 45
2015- total harvest 68
2016- total harvest 62
2017- total harvest 73, and 85 tags were issued
2018- total harvest 80, and 88 tags were issued

The Document also fails to provide or analyze the historic information. If it did, we would see that **from 2014 to 2018 CFG allowed the elk harvest to increase by 77%** [(80-45)/45] . Yet during this same time period when the elk harvest nearly doubled, there were no environmental documents; no actual field elk counts until 2017, and no transparent, coherent historic analysis whatsoever – were ever provided to the public.

Elk population **models** in the Document on pages 58 and 59 show current conditions and the no project alternative, as a **harvest of only 65 elk:**

"Appendix 3. Computer Model Runs (Elk Pop) Harvest NORTHWESTERN CALIF. ELK HERD SIMULATION- GENERAL, PLM, SHARE TAGS, 2019 (Combined Harvest for Del Norte and Humboldt cos) Ratio = 37/100/32 - Maximum Calf Survival = 40% THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES. CURRENT CONDITIONS = NO CHANGE. GENERAL, COOP ELK, SHARE AND PLM TAGS TO HARVEST APPROXIMATELY 44 BULLS AND 21 ANTLERLESS ELK"

However, the actual current baseline conditions are that for the last two years, there has been a hunt that issues greater than 80 tags and results in a harvest that approaches 80. *Not 65.* There has been a misrepresentation of current baseline conditions in the population modeling documents. This is internally inconsistent, and is confusing as to how the model was manipulated. The Document contains a serious error.

Likewise, the proposed alternative is misrepresented:
In the population model, page 62, the proposed harvest is stated as approximately 85:
"PROPOSED PROJECT: ADD 8 BULL AND 12 ANTLERLESS (SHARE) TAGS TO **HARVEST** APPROXIMATELY 52 BULLS AND 33 ANTLERLESS ELK"

The total proposed harvest, as stated on page 18:
The proposed project will result in increasing the total tags to allow removal of up to 108 Roosevelt elk.

The proposed harvest of 108 is significantly larger than the proposed project **model** run of 85.

What is alarming is that the models run clearly show that if you run the actual current conditions of a harvest of approximately 80-85, the herds do not grow significantly, but remain stable.

The Department of Fish and Wildlife has significantly and incrementally increased elk harvest size since 2014 by 77%, so that the significantly increased harvest belatedly described in this Document – **has already been implemented.** Already implemented – we would underline again – **without** appropriate elk count/population data analysis and without environmental documents. The harvest numbers have increased substantially *every single year* since 2014, without environmental documents and through 2017

without a Statewide Management Plan. Current baseline conditions of harvesting 80-85 elk already constitute implementation of a greatly increased harvest. The models show that this amount of harvest, page 62, will result in stable or possibly a slight decrease in herd size. Any harvest above this amount is shown to decrease herd size significantly.

Therefore our organization finds that it cannot support any of the project alternatives, because of the errors in the analysis. Even if we wanted to support the "current conditions/no project" alternative, we could not because it is not clear what number this would be, 65 or 80, and it is not clear what impacts this is already having or will have in the future. We would like to see further growth in the herds (so that the Roosevelt elk herds re-occupy most of their historic range) based on actual counts or based on a clear, detailed explanation of what the actual counts are; how they are collected, and how population numbers are derived from actual counts. There is no alternative in the Document that allows this. CDFW has failed to provide an alternative which would *decrease* the number of tags issued and elk harvested.

The Elk pop model run shows a decrease in the recovering Roosevelt elk herds which is in conflict with the goals of the Statewide Management Plan. This is also in conflict with the desires of the general public.

2) <u>How Many Elk are Out There??</u>

The Document fails to document in any way the alleged conflicts between landowners and elk, which are most likely being "reported" to CDFW by larger commercial operations. Document tone is negative about the elk "problem" and repeatedly uses the word "conflict." It is silent on the widespread public interest in the recovery of the elk herds. Nor does it mention the contribution to tourism, on which our regional economies are now heavily dependent. Unfortunately overall the enthusiastic general public is not aware of the CDFW/CFG elk hunt process.

However as some indication of fervid public interest in elk recovery, we offer the following: Redwood Parks Conservancy and Tolowa Dunes Stewards (two non-profit organizations providing support to state and federal agencies) have on August 13, 2017 and August 26, 2018 hosted open public presentations in Del Norte County about the Roosevelt elk monitoring programs being conducted by Humboldt State University (HSU) and CDFW. As Del Norte County has fewer than 30,000 residents, these Sunday afternoon programs were very well-attended, with 38 and 51 people, respectively. (Susan Calla, personal communication) It was obvious that all attendees felt positive

about the elk. These attendees sat in uncomfortable metal chairs in a small, unventilated room, totally fascinated as team members presented a broad range of detail and data. There was some natural history of elk but primarily the focus was on all the different data collection methods being employed by the team. Presentation and questions continued for 2-3 hours. Some photos, recordings, and notes were taken. (Sandra Jerabek, personal communication) The public soaked up a wealth of information and explanation, which is now in sharp contrast to the sparse explanations of data and leaps of faith in this Document.

As part of the above referenced public presentations:

On August 13, 2017 Carrington Hilson of CDFW said there were 300 elk in Del Norte in fall of 2016, and further that up through this point in time the data was more or less "anecdotal." A more scientific approach had been launched in 2017 by CDFW and Humboldt State University Department of Wildlife. According to Hilson, the population increased to 400 or 440 in Del Norte and to 990 for the Northwestern zone in 2017. In Hilson's presentation on **August 26, 2018**, she said that there were "nearly 1,000 in the zone," and between "400-500 in each county." *But she also stated in the 2018 presentation that: "between 113 and 429 is the actual count in the Northwest Hunt Zone."* This implies that the team (including HSU professors and students) *might* be using their own projection model to arrive at their population numbers of 990 or 1,000. Hilson stated many times that it was challenging to count elk with all of the forest cover.

As counting elk might be challenging, in the 2018 public presentation HSU Professor Micaela Szykman Gunther also explained in detailed slides a mathematical formula that the HSU team had developed to project elk population/abundance estimates from field data, in this case from their collection of fecal DNA.

The Document on page 22 states "direct counts within a portion of the zone from 2016 to 2017 resulted in a minimum count of 990 elk in 22 distinct groups (CDFW 2018)." (This number 990 is the same number Hilson gave as total elk numbers at the public presentation in 2017, without any qualification as to it being the minimum count or covering only a portion of the zone.) From here the Document on page 22 goes on to state: "...using the minimum count of 990 from only a portion of the entire zone, conservatively assumes the current population size is 1,600 elk and carrying capacity is estimated at 1,760 elk across the entire zone." There is no explanation whatsoever of how the Document takes this leap from a population of 990 elk to 1,600 elk. No formula or or explanation of any accepted method is offered here.

The discussion of actual elk population data on page 22 of the Document is deficient. There is no explanation of what "portions" of the zone they are referencing. Hilson's numbers of 990 in 2017 and then nearly 1,000 in 2018 were not qualified as partial in the public presentations, and do not suggest that as stated in the Document on page 22 "elk populations are growing and expanding within the unit" to any appreciable extent. In fact, the brief *two* year period of time that CDFW has been surveying northwest elk is not long enough to establish a trend.

The Document also fails to give even the 2018 or early 2019 elk field counts, thus it is outdated and incomplete. Also, by failing to provide the most recent data CDFW is fragmenting the CEQA process, leaving us wondering when that data will be presented, considered and factored in. Further where is the explanation of how field data is collected? Where is the detailed explanation of how final population numbers are derived from field counts? Certainly this is *not* in this Document either. We are left to speculate. We are left to take it on faith.

Is CDFW using their own internal method to project population from field counts? Are they using the mathematical formula that HSU Professors have developed? Have these methods been published and peer reviewed? Or perhaps, in the worst possible case scenario, are field counts being projected from actual data twice, once by the HSU/CDFW team and once again by CDFW in preparing the Document? Reading the Document there is no way of knowing.

CDFW then uses 1,600 as the supposedly real population number in the Elk pop computer scenarios. Given these Roosevelt elk herds are recovering (from being nearly extirpated) and have unique genetics, perhaps the conservative number of 990 should be used to run the scenarios (after clarifying how *that* number was obtained). CDFW is obligated to explain more precisely how they got the number of 990 elk, as well as to explain the 62% leap from 990 to 1600 elk. The elk-loving public deserves this.

Frankly we had expected CDFW to incorporate and explain to the public the connection between the field data that CDFW and HSU team is collecting and CDFW actions in already allowing such large increases in elk hunting from 2013 to 2018. Failure to do so leaves a significant gap in the information that CEQA is supposed to provide.

3) **Redwood National & State Parks studies do not support CDFW leap of faith in elk population growth projections**

In reference to the attached **Redwood National & State Parks, 2017 HERD UNIT CLASSIFICATION AND MANAGEMENT OF ROOSEVELT ELK:**

Redwood National & State Parks has been surveying park elk since 1997, and the results are shown in figure 1, page 5.

This chart shows that since 1997, the population for these studied herds is stable or declining. (The OSOC herd appears to spike only because during 2015 the LRCR herd discontinued and was absorbed by OSOC.) The chart shows EPBY and GOBB herds to be in decline. The DARA herd has only slightly increased. Overall, the Redwood National Park elk do not exhibit growth, but rather show a decline of cows during this long study period. Most of these herds do not have hunting pressure, and yet they have declined. Also, figure 2, page 7 of the report shows bull to cow ratios for the EPBY and DARA herds have decreased significantly from 2008 to 2017. This indicates that herds that have declining cow populations also have proportionally greater declines of bulls. Appendix A in the Redwood Parks study is the last page, with useful population data.

In addition to misrepresenting the harvest size of the proposed project within the CDFW Document models, these models use an exaggerated population base of 1,600, rather than the actual population results of the CDFW survey data, which *may* be approximately 1,000 for Del Norte and Humboldt zone herds combined. Considering that the Humboldt County Redwood National & State Parks elk surveys/management studies have been conducted over a longer period of time to assess population trends, and show an overall decline in elk population, the inflated population base of 1,600 is doubtful. How can it be "conservative"?

4) **Failure to respond to all scoping comments: Tribal hunt allocations**

We have requested in our scoping comments and in comments on the draft Management Plan that Tribal hunting allocations be given the first priority, with free or discounted tags for Tribal members because this is subsistence food, and that Tribal hunts be coordinated with other hunts to ensure that a particular herd is not overly impacted. These comments have never been addressed by CDFW or the Commission.

5) **Failure to respond to all scoping comments: Unique Genetics of these Herds**

The discussion of genetics in the Document on page 23 is too general to be of value. The documents talk about impacts to the statewide gene pool but not to the genetically pure or unique "Redwood elk" as per EPIC's previous submitted comments and attachments on elk hunts and Management Plan. Attached once again are the genetic studies suggesting that the elk that are hunted in this zone are important because they may be genetically unique. Again they deserve a truly conservative approach, special management and further study. These comments have never been addressed by CDFW or the Commission.

Thank you, Commissioners for your new mission statement; your dedication to transparency and public participation, and your careful attention to this process.

Sincerely,

Joe Gillespie

Joe Gillespie
President
Friends of Del Norte

Attachments:

- Redwood National & State Parks, 2017 Herd Unit Classification and Management of Roosevelt Elk (RNSP 2017)
- Elk genetics studies: Meredith; Polziehn.

Appendix A: Details of Elk Harvest 2013-2014

----- Forwarded Message -----
From: "Hilson, Carrington@Wildlife" <Carrington.Hilson@wildlife.ca.gov>
To: "upsprout@yahoo.com" <upsprout@yahoo.com>
Cc: "Fresz, Shawn@Wildlife" <Shawn.Fresz@wildlife.ca.gov>; "Barr, Victoria@Wildlife" <Victoria.Barr@wildlife.ca.gov>
Sent: Wednesday, December 5, 2018 4:17 PM
Subject: Elk Tags Allocated in Del Norte and Humboldt Counties

Ms. Cooper,
Per your request that you made during our conversation last Thursday, I have compiled the number of allocated elk tags and reported harvest for all PLM, SHARE, and general hunts in Del Norte and Humboldt counties from 2013 to 2017.

Year	Hunt Code	Hunt Name	Gender	Tags Allocated	Harvest
2013	402	Big Lagoon antlerless	either-sex	5	1
2013	403	Big Lagoon bull	bull	5	3
2013	404	Klamath antlerless	antlerless	5	0
2013	405	Klamath bull	bull	5	3
2013	413	Del Norte antlerless	antlerless	10	8
2013	414	Del Norte bull	bull	5	5
2013	483	Northwestern California either-sex	either-sex	20	19
2013	PLM	Cottrell Ranch	bull	1	1
2013	PLM	Fulton Ranch	bull	1	0
2013	PLM	Hunter Ranch	bull	1	0
2013	PLM	Redwood House Ranch	bull	1	1
2013	PLM	Stover Ranch	bull	4	4
2013	PLM	Stover Ranch	antlerless	2	1
2013	PLM	Wiggins Ranch	bull	2	2
2013	PLM	Wiggins Ranch	antlerless	2	0
2014	403	Big Lagoon bull	bull	5	5
2014	405	Klamath bull	bull	5	1
2014	483	Northwestern California either-sex	either-sex	30	25
2014	PLM	Cottrell Ranch	bull	1	0
2014	PLM	Cottrell Ranch	antlerless	1	1
2014	PLM	Fulton Ranch	bull	1	1
2014	PLM	Hunter Ranch	bull	1	1
2014	PLM	Redwood House Ranch	bull	1	1
2014	PLM	Smith River	bull	3	3
2014	PLM	Stover Ranch	bull	4	2
2014	PLM	Stover Ranch	antlerless	2	1
2014	PLM	Wiggins Ranch	bull	2	2
2014	PLM	Wiggins Ranch	antlerless	2	2
2015	483	Northwestern California either-sex	either-sex	45	35
2015	PLM	Alexandre Eco Dairy Farms	bull	2	2
2015	PLM	Alexandre Eco Dairy Farms	antlerless	4	4
2015	PLM	Big Lagoon	bull	3	2

2015	PLM	Cottrell Ranch	bull	1	1
2015	PLM	Cottrell Ranch	antlerless	1	1
2015	PLM	Fulton Ranch	bull	1	1
2015	PLM	Hunter Ranch	bull	1	1
2015	PLM	Klamath	bull	2	2
2015	PLM	Redwood House Ranch	bull	1	1
2015	PLM	Smith River	bull	3	3
2015	PLM	Smith River	antlerless	6	6
2015	PLM	Stover Ranch	bull	4	4
2015	PLM	Stover Ranch	antlerless	2	1
2015	PLM	Wiggins Ranch	bull	2	2
2015	PLM	Wiggins Ranch	antlerless	2	2
2016	355	Northwestern California bull	bull	15	12
2016	PLM	Alexandre Ecodairy Farms	antlerless	4	4
2016	PLM	Alexandre Ecodairy Farms	bull	2	2
2016	PLM	Big Lagoon PLM	antlerless	2	2
2016	PLM	Big Lagoon PLM	bull	3	3
2016	PLM	Cottrell Ranch	antlerless	1	0
2016	PLM	Cottrell Ranch	bull	1	1
2016	PLM	Fulton Ranch	bull	1	1
2016	PLM	Hunter Ranch	bull	1	1
2016	PLM	Klamath PLM	antlerless	2	2
2016	PLM	Klamath PLM	bull	3	2
2016	PLM	Redwood House Ranch	bull	1	1
2016	PLM	Smith River PLM	antlerless	6	6
2016	PLM	Smith River PLM	bull	3	3
2016	PLM	Stover	antlerless	2	2
2016	PLM	Stover	bull	4	3
2016	PLM	Wiggins Ranch	antlerless	2	1
2016	PLM	Wiggins Ranch	bull	2	2
2016	SHARE	Copher Ranch	antlerless	1	1
2016	SHARE	Copher Ranch	bull	1	1
2016	SHARE	Del Norte North	antlerless	6	5
2016	SHARE	Del Norte North	bull	3	3
2016	SHARE	Del Norte South	antlerless	6	2
2016	SHARE	Del Norte South	bull	3	2
2017	355	Northwestern California bull	bull	15	15
2017	483	Northwestern California either-sex	either-sex	3	2
2017	PLM	Alexandre Ecodairy Farms	antlerless	4	4
2017	PLM	Alexandre Ecodairy Farms	bull	2	2
2017	PLM	Big Lagoon PLM	antlerless	2	0
2017	PLM	Big Lagoon PLM	bull	3	3
2017	PLM	Cottrell Ranch	antlerless	1	1
2017	PLM	Cottrell Ranch	bull	1	1
2017	PLM	Fulton Ranch	bull	1	0
2017	PLM	Hunter Ranch	bull	1	1
2017	PLM	Klamath PLM	antlerless	2	1
2017	PLM	Klamath PLM	bull	3	2
2017	PLM	Redwood House Ranch	bull	1	1
2017	PLM	Smith River PLM	antlerless	6	6
2017	PLM	Smith River PLM	bull	3	3
2017	PLM	Stover	antlerless	2	1
2017	PLM	Stover	bull	4	4
2017	PLM	Wiggins Ranch	antlerless	2	1

2017	PLM	Wiggins Ranch	bull	2	2
2017	SHARE	Copher Ranch	antlerless	2	1
2017	SHARE	Copher Ranch	bull	1	1
2017	SHARE	Del Norte North	antlerless	11	10
2017	SHARE	Del Norte North	bull	1	1
2017	SHARE	Del Norte South	antlerless	7	7
2017	SHARE	Del Norte South	bull	5	3

Please let me know if you have any questions regarding this information.

Carrington Hilson
Environmental Scientist
California Department of Fish and Wildlife
Email: carrington.hilson@wildlife.ca.gov
Cell: 707-502-4078

Appendix B: Friends of Del Norte Scoping Comments

This is an exact copy of what we submitted in November, except for the footer and page numbers:

November 30, 2018

Transmitted by email on this date to the staff addresses below:
Victoria.Barr@wildlife.ca.gov; Joe.Hobbs@wildlife.ca.gov; fgc@fgc.ca.gov

California Fish and Game Commission
***Valerie Termini*, Executive Director**
P.O. Box 944209
Sacramento, CA 94244-2090

Dear Commissioners and Staff:

RE: **Scoping Comments for environmental documents and proposed tag quota increase in the Northwestern Elk Zone of 20 tags, as per Victoria Barr communication on November 19, 2018 -- 4 pages.**

Thank you for the opportunity to participate in this process. The Friends of Del Norte will focus the scope of these comments on the North Coast Roosevelt Elk Management Unit, (also referred to as Northwestern California Hunt Zone).

First we make three general requests right up front, and then we bullet all the information that we believe you will be obliged to include in any forthcoming environmental documents.

***First, we suggest again that Tribal hunting should be the first and highest priority for existing hunting tags.** In other words the allocations for Tolowa Dee-ni' Nation, Elk Valley Rancheria, and the Yurok Tribe should be established *before* the PLM, SHARE and general hunt allocations are set. Tags for Tribal members should also be free of cost or at least affordable according to a standard determined by the Tribal governments, as the PLM tags are not affordable and 2017 tag increases were primarily in the SHARE program. If Tribes have a "share" in the SHARE program, this is not transparent.

Tribal hunting should be coordinated overall, in a transparent manner, with other CDFW sanctioned hunting so that individual herds are not overly impacted, but in any case Tribal members should have priority and affordable opportunity to hunt elk.

***Second, please separate the Del Norte hunt from the Humboldt hunts.**

By combining the hunts of Humboldt County (primarily affecting the herds that take refuge in Redwood National Park and/or State Parks) and Del Norte County, there is the false impression that hunting stress is not harmful overall. However, hunting is not allowed in the Redwood Parks, where the elk populations are large. Therefore the small herds of Del Norte are taking the majority of stress from hunting. This is obscured by combining the two counties. Also consider that Del Norte herds have already experienced a significant increase in hunting since 2013, when there were no Smith River PLM or Alexandre PLM and no SHARE hunts. This has increased to currently in 2017 to 9 Smith River PLM, 6 Alexandre PLM, plus 12 SHARE hunts (Pers. Communication, Carrington Hilson, CA Dept. of Fish and Wildlife, 2018 Nov. 29). This additional hunting pressure represents an increase of 27 elk specifically taken from Del Norte, and a very rapid increase from zero to 27 within only five years. Adding these new PLM and SHARE hunts to the general hunt pressure, and the results of increases far exceeds any growth of the Del Norte herds proportionally.

***Third, of great biological importance also is that based on existing science the Roosevelt elk in the Northwest CA Hunt Zone are genetically pure or unique** (see previous comments from Friends of Del Norte, EPIC). Please consider this factor.

***Fourth, on behalf of the concerned public, we would greatly appreciate the transparency if the environmental documents would also address the following:**

- Present in detail, all elk population data collected to date and used as a basis for any proposed increase in hunting tags.

- Present all data showing how many elk are actually killed each year in each program including PLM and SHARE, Tribal hunts, and including poached elk (e.g. recent 2018 poaching in Redwood National & State Parks; 2018 apprehended poachers in Gilbert Creek area) and road kill. Please show respective locations on a map, or at least break out by County and general areas within counties.

  > We request improved transparency throughout the process. Proposed numbers of tags and categories for all hunts: General, SHARE, PLM, Apprentice, Tribal, etc. should easily accessible such that a given agency, region or county can grasp and analyze the impacts to their region, county or neighborhood. These proposed quotas should be locally published well before the Commissioners' meeting dates so communities have a greater opportunity to voice their support or concerns.

- Indicate which elk population data are based on actual field counts, surveys and other methods involving actual sighting or handling of the elk by authorized personnel -- and which population data are projected from field data by mathematical formulas and other methods in use by the Humboldt State University (HSU) /CDFW team (and/or other experts consulted by this team).

- Explain clearly which of these methods for projecting elk population numbers are being used; where else and by whom these methods are in use, and to what extent these projection methods have been published and peer-reviewed.

- Note if any portion of the population counts/data is based directly on reports/counts from the public (or local businesses or ranches etc.).

- Chart the progression or changes in estimated elk population numbers and/or data-based population numbers over the last 10 years, and over the last 150 years.

- Explain how proposed hunting tag increases will fulfill the existing or draft Elk

Management Plan population goals for this region.

- Discuss how elk are significantly impacted by recent fires in surrounding areas of Southern Oregon and Northern California, and how this combined with any proposed increased hunting pressure impacts the elk in the Northwestern CA Hunt Zone.

  We should compensate by allowing elk to increase their numbers and find refuge in nearby areas such as ours, to compensate for losses in elk or elk habitat.

- Explain all reason(s) including biological justification for the proposed increase in elk tags when the HSU/CDFW data gathering and studies are not complete, have not been published, released, or peer-reviewed.

  CDFW is proposing for the 2018 Elk Tag Allocation adjustments within the quota ranges allowed under the old outdated elk management plan, a plan not supported by scientific evidence.

- Show how the proposed increase in tags is spread over the categories of General Hunt; PLM; SHARE, and the allocation for Tribal Hunts/Tags. Please show respective locations on a map, or at least break out by County and general areas within counties.

We also attach our previously submitted comments on the draft elk management plan for your convenient reference, as these comments continue to be relevant to your process.

Again Friends of Del Norte thank staff and the Fish and Game Commission for the opportunity to comment.

Sincerely,

Joe Gillespie

Joe Gillespie
President
Friends of Del Norte

Redwood
National and State Parks

National Park Service
U.S. Department of the Interior

California Department of
Parks & Recreation

2017 HERD UNIT CLASSIFICATION AND MANAGEMENT OF ROOSEVELT ELK

Photo: Redwood National and State Parks

June 2018

INTRODUCTION

The Roosevelt elk (*Cervus elaphus roosevelti*), the largest of the six recognized North American elk subspecies, once occurred from southern British Columbia to Sonoma County, California. With the arrival of European and other foreign settlers intense hunting began in the mid-1800s and the Roosevelt elk's range was greatly reduced. From 1848 through 1855, market hunting for elk hide and meat supplied gold miners during the northern California gold rush. When the gold rush was over a large amount of elk habitat was converted to cattle and sheep ranching and croplands, and elk were killed to protect against crop depredation. Elk populations and distribution in the Marble and Siskiyou Mountains and the Salmon-Trinity Alps were significantly reduced (USDI 1983). The only Roosevelt elk populations that persisted through this period were those occupying coastal lowlands in northern California, where dense forests and brush fields provided protective cover. Today Roosevelt elk in California persist only in Humboldt and Del Norte Counties, and extreme western Siskiyou County.

Prior to foreign settlers' arrival, local tribes (Yurok, Chilula, and Hupa) living in and around what is now Redwood National and State Parks (RNSP or "parks") burned prairies, grasslands, and forest openings to promote new growth of plants attractive to elk as forage. Tribal use of elk for subsistence presumably had little impact on elk populations in comparison to population declines following settlement.

The Redwood National Park *Elk Management Report* (Hofstra *et al*. 1986) stated the long term goal for elk within Redwood National and State Parks is "...an elk population in equilibrium with the environment, regulated by vegetation dynamics, predation, competition with other species, and other natural forces." It goes on to acknowledge that achieving this goal may be "problematic at Redwood, given its configuration, relatively small size, land use history, adjacent activities, and habitat needs of elk."

Work in RNSP

Annual classification of elk herds within RNSP began in 1996 to document relative abundance and simple population characteristics such as cow numbers, recruitment, and calf survival within known herds (Wallen 1997). These herd count/classifications have been conducted annually each fall since that time by parks staff and others. Also in 1996, a monitoring program of the elk population in the Prairie Creek drainage was established independent of the RNSP program (Weckerly 1996, Weckerly *et al*. 2004). The 2 independent monitoring programs in the same area provided a unique opportunity to compare data gathered without using a standardized protocol with data gathered using a more rigorous approach using a standardized protocol associated with hypothesis testing.

Beginning in 2004, Dr. Floyd (Butch) Weckerly counted elk in the Bald Hills using a method he developed (Weckerly and Francis 2004). The Prairie Creek herd counts tended to yield similar results using the parks' and Weckerly's survey methods. However, the Bald Hills herd counts tended to be quite dissimilar between park staff and Weckerly, with staff counts consistently undercounting the number of animals. Because of this, staff counts were discontinued in the Bald Hills.

METHODS

Seven separate herds were originally counted/classified within RNSP. In 2015, 2 herds coalesced and have remained so through January 2018, resulting in 6 herds now being counted within RNSP. Five of these herds are counted by park staff from September through November, the fall herd classification period. The Bald Hills herd was counted 10 times in January by Dr. Weckerly. Surveys by Dr. Weckerly associated with Prairie Creek herd monitoring also were conducted in January 2018. Results from these latter 2 surveys are considered part of the 2017 elk count period and are included in this report with the fall 2017 information. This is compatible with how survey results have been reported in previous reports. The 6 herd units are:

(1) **Old South Operations Center** (OSOC) herd (combined with the former **Lower Redwood Creek (**LRCR herd))
(2) **Davison Ranch** (DARA) herd
(3) **Elk Prairie/Hwy 101 Bypass** herd (EPBY)
(4) **Gold Bluffs Beach** (GOBB) herd
(5) **Crescent Beach Education Center** (CBEC) herd
(6) **Bald Hills** (BAHI) herd

Detailed descriptions of the locations of herd units appear under Herd Summaries on page 7.

Classification counts were conducted by park staff either driving or hiking to the herd units, and using binoculars and spotting scopes to count elk. Staff recorded the total number of elk observed, and the total number of elk within each classification group. The classification groups are mature bulls, spikes (first year males identified by a lack of brow tine off the main beam), cows, and calves. The observers assigned ranking criteria to the classification counts that specified the accuracy of the count, using a scale of 1 to 4. A rating of 1 indicated good visibility with the animals close enough to accurately count and classify the herd. A rating of 4 indicated that the observation was unacceptable for determining herd composition because of poor visibility due to low light level, fog, vegetation, or topography. The highest cow count with a favorable ranking was used as the herd size estimate and for calculating calf:cow and bull:cow ratios.

Fall Count Herd Classification Groups

- **Cows** = all females >1 year old.
- **Calves** = young of the year <1 year old (recognized by spotted coat and small size; later the spots disappear, but calves retain a short, rounded snout).
- **Spikes** = year-old males exhibiting only a main beam, brow tine/antler branching absent.
- **Mature bulls** = males ≥2 years, with brow tine evident off the main beam.

Fall Count Herd Observation Ranking Criteria

1 = Good, visibility good and animals close enough to observe with high confidence of an accurate count and classification.

2 = Fair, animals are either distant or another factor made the observer less than fully confident in classification (e.g. some vegetation blocking full view or movement into cover while counting).
3 = Poor, animals too far away (e.g. difficult to track individuals or animals are in adjacent hiding cover).
4 = Unacceptable, bad visibility due to low light levels, fog, or other factors.

During January surveys, elk in the Bald Hills were counted from vantage points accessible by vehicle or approached on foot. A set route was driven/walked on 10 different days. Observers approaching elk groups on foot did so to obtain an unobstructed view or to conduct a coordinated stalk. A coordinated stalk consisted of an attempt by a first surveyor to alert an elk group to his or her presence so that the group moved in such a manner that they could be counted by a second surveyor. All animals within 50 m (~165 ft) of one another displaying coordinated activity or movement were considered a group (Weckerly *et al*. 2004). The highest cow count with a favorable ranking was used as the herd size estimate and for calculating calf:cow and bull:cow ratios.

RESULTS AND DISCUSSION

Fall classification counts and the winter 2018 classification count for the BAHI herd are presented in Table 1. It should be noted that the parks' DARA and EPBY herds are combined in Weckerly's "Prairie Creek" herd. Table 1 numbers for DARA and EPBY reflect fall staff counts.

Table 1. Highest number of elk reported within each herd unit and for each fall classification grouping in 2017. MB = mature bull, SP = spike, CW = cow, CV = calf, n = total fall counts when animals were observed.

Herd	MB	SP	CW	CV	Total	n
OSOC	6	10	35	10	61	3
BAHI[1]	2	17	153	27	199	10
DARA	4	6	45	14	69	3
CBEC[2]	N/A	N/A	N/A	N/A	59	2
GOBB	1	0	14	7	22	4
EPBY	2	0	2	1	5	3

The January 2018 Prairie Creek herd estimate was 74 **(**F. Weckerly, pers. comm.). The staff count for the DARA/EPBY and DARA herds combined also was 74. Calf and spike numbers matched closely between the 2 counts, however, cow and bull numbers did not. Staff counted 6 bulls, Weckerly counted 12, and staff counted 7 more cows than did Weckerly. The Gold Bluffs Beach counts were nearly identical between counts for both total numbers and classification. The total OSOC herd numbers differed by 1 between the 2 counts, due to differences in cow/calf classifications. Overall the numbers indicate good reliability with staff counts and classification for herds below the Bald Hills in the parks.

[1] The high count for this herd, on January 12, was 277 but with few animals classified. Table numbers demonstrate animals classified in the herd during the next highest count on January 15.
[2] This herd was not classified in 2017.

Cow counts by year, the best indicator of herd persistence (McCullough *et al*. 1994, Weckerly and Francis 2004, Weckerly 2017), are displayed in Figure 1. Cow numbers for all herds for all years are provided in Appendix A. In 2015, the OSOC and LRCR herds coalesced into a single herd, now referred to as the OSOC herd.

In the fall, staff observed a small group of 2 bulls, 2 cows and 1 calf in Elk Prairie, home of the EPBY herd. In June, 2 cows, each with a calf, plus 9 bulls were observed in Elk Prairie. Weckerly observed only bulls (9-10) in Elk Prairie in January (F. Weckerly, pers. comm.). The GOBB herd, that normally ranges widely over a large area and is difficult to count, was observed as an all-ages group. Except for 2013 when the count was 25, the 2016 cow count for GOBB was the highest it's been (22) since 2002 (Figure 1).

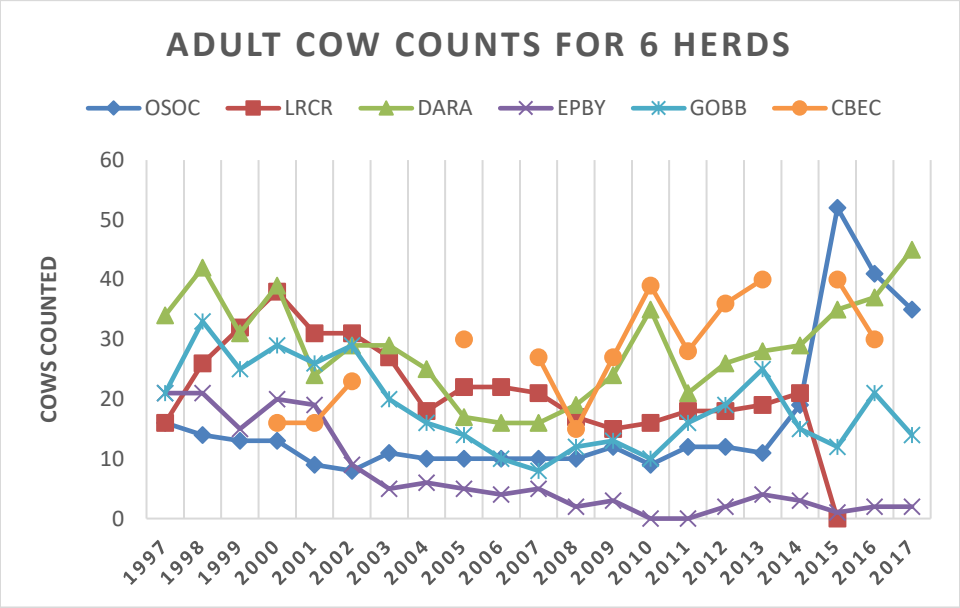


Figure 1. RNSP fall elk herd cow numbers from 1997 to 2017 indicating herd persistence through time. The CBEC herd counts are opportunistic each year, missing data points do not represent zeros. The LRCR and OSOC herds merged in 2015.

The highest fall cow count in each herd was used to determine calf:cow ratios; the ratio of calves to cows is an indication of herd productivity. The ratio of calves to cows in the coalesced OSOC/LRCR herd, continued to be low for the 3rd year since the two herds combined in 2015 (Table 2).

Table 2. Calves per 100 cows for coastal elk herd counts, 2003 to 2015 (N/A = data not available).

Herd	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
OSOC	27	10	40	30	40	40	25	55	16	8	45	32	29	34	28
LRCR	11	22	18	45	33	23	20	56	44	61	58	29	---[1]	---[1]	---[1]
DARA	21	24	12	18	56	37	33	22	38	18	42	38	29	27	31
EPBY	20	50	0	25	60	100	33	0	0	50	50	100[2]	100[2]	100[2]	50
GOBB	15	6	17	30	50	50	54	60	44	53	20	53	17	24	50
CBEC	N/A	N/A	N/A	N/A	30	40	30	5	14	28	20	N/A	37	53	N/A

1 The ratio is included in the OSOC herd ratio due to herds coalescing.
2 The 1:1 calf/cow ratio was due to 1 cow present with a calf.

In January 2018, the calf:cow ratio in Weckerly's Prairie Creek herd was 0.40 (F.Weckerly, pers. comm.). The fall staff counts indicated a calf:cow ratio of 0.32 when the EPBY and DARA herds were combined and 0.31 for the DARA herd alone. In 2017, staff counted 15 calves in the 2 herds combined; Weckerly's count was 16. No cows or calves were present in January 2018 when Weckerly surveyed Elk Prairie. Given that the staff fall count and Weckerly's January count were equal it is probable that staff misclassified large calves as cows during their high count that occurred on October 2.

This year it was possible to calculate the calf:cow ratio for the Bald Hills herd, but the January 2018 ratio was based on the day with the second highest number of animals counted. Classification is difficult with this herd due to its size and juxtaposition within the landscape. To get an accurate herd count and classification, conditions for viewing the animals must be optimal, e.g., the herd is in clear view or moving in single file across an opening. The calf:cow ratio for this herd was 0.18 in January 2018, down from 0.26 in January 2017.

Bull:cow ratios may indicate the quantity of available forage. Like many large herbivores, male and female Roosevelt elk partition habitat spatially. In the Elk Prairie and Davison meadows (EPBY and DARA herds) males are more likely to use forests that have lower quantities of forage biomass and thus forage more widely (Weckerly 2005). Also, when food is less abundant males may use forested habitats more frequently, making direct observation difficult (Weckerly *et al*. 2004, Weckerly 2007). In January 2018, Weckerly observed a bull:cow ratio of 0.25 for the Prairie Creek herd, nearly double the 0.13 ratio staff found for the DARA/EPBY herds combined the previous fall. This was similar to the discrepancy between the fall and January ratios in 2016; in fact, there has been only 1 year in the last 10 when the bull:cow ratio was greater in the fall than in January (Figure 2). The cause of the lower fall bull:cow ratios could be due to differences in methodology between the 2 counts. Ratios from staff counts are based on actual numbers of animals observed, while Weckerly uses a mark-resight method that accounts for imperfect detection, and use Bowden's estimator to adjust for biased low sex ratio estimates (Weaver and Weckerly 2011, Bliss and Weckerly 2016).

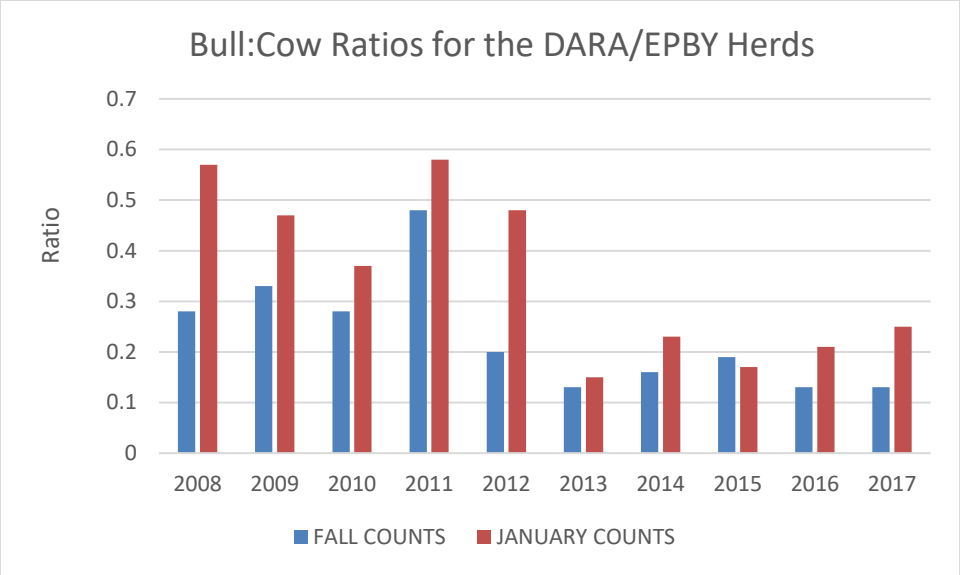


Figure 2. Bull:Cow ratios for the DARA/EPBY (Weckerly's Prairie Creek) herd during a 10-year period. Fall counts are done by park staff Sept.-Nov. and Weckerly's are done in January of the following year.

Herd Summaries

Old South Operations Center (OSOC)

The total count for the OSOC herd was down by 10 from 2016. However, there were only 2 counts obtained in 2017, compared to 7 in 2016. The Lower Redwood Creek herd (sometimes referred to as the "Levee" herd in previous reports) coalesced with the OSOC herd in 2014 (RNSP 2015) after a local landowner opened his gated cow pasture which permitted elk access to the pasture. Elk ingress and egress between the private pasture and the park has ostensibly been occurring ever since. The increased available food resource is likely the cause for the breakdown in separation previously kept by the OSOC and LRCR herds, and perhaps due to an increased threat of hunting in the private pastures adjacent to the park (Kolbe and Weckerly 2015, Weckerly 2017). Weckerly's best count was 39 cows and 7 calves, the staff count was 35 cows and 10 calves.

Davison Ranch (DARA) Herd

This herd consists of a group of mature bulls that often occupies the northern portion of Elk Meadow north to the Lost Man Creek Fish Hatchery, and a cow group that occupies the southern portion of Elk Meadow south to Skunk Cabbage Creek. These animals also frequent the Redwood Adventures Lodge property west of Highway 101 and, on the east side of the highway, the lawn of the Green Diamond Resource Company office, the private residence across from the footbridge over Prairie Creek and the cow pasture west of the former Mill A site. The number of cows counted by staff (45) matched last year's highest-ever recorded for the herd, and when the 2 cows from EPBY observed in the fall are included, the number matches Weckerly's January count of 47 for the Prairie Creek herd. The calf:cow ratio was 0.31 in 2017, up from 0.27 in 2016

but below 0.38 of 2014. The bull:cow ratio was way down, at 0.09, however this didn't take into account the animals from the EPBY herd. Weckerly reported a bull:cow ratio of 0.30 in January 2018 that included 10 bulls from the EPBY herd.

Elk Prairie /Hwy 101 Bypass (EPBY) Herd

This herd, considered extinct (Weckerly 2017) consisted of a small group of 5 animals in fall 2017 that included 2 bulls, 2 cows and 1 calf. Earlier in the year 2 calves were seen and in late June a park employee reported a herd of 13 including the 2 cows with their calves, plus males of which 2 may have been spikes.

Gold Bluff Beach (GOBB) Herd

The GOBB herd uses a large area that extends from Mussel Point at the south end of Gold Bluffs Beach to Carruther's Cove near the northern limit of this beach, a distance of 12 miles. They also on occasion leave the beach area, moving into the forest above the beach and east towards Newton B. Drury Parkway. This herd is difficult to count because of the large area the animals use and the brushy nature of the coastal bluffs which can obscure individuals. The number of cows counted (14) was below those counted last year but similar to numbers of recent years (see Appendix A). In contrast, the bull:cow ratio was the lowest on record at 0.05, with only 1 bull present with the cow group for the second year in a row. However, on July 26, 2017, 3 bulls were observed with the cow group. Weckerly also counted 14 cows on 4 days and saw either 1 or no bulls.

Crescent Beach Education Center (CBEC) Herd

The CBEC herd is most often counted from the education center office, whose windows face the meadow west of the building. This herd was not classified in fall 2017 due to limited staffing. On July 4, 2017, 32 cows, 16 calves, 4 spikes and 3 bulls were recorded lying down in the meadow close to the office. This is 4 fewer animals than were recorded in the total (unclassified) herd in September.

Bald Hills (BAHI) Herd

There were 10 counts in the Bald Hills in 2018, from January 4 to January 16. The high count in 2018 for the BAHI herd was 276, not including the 1 bull observed, an increase over last year's 247. The cow count was 153 when the total herd count was 197; this cow count was lower than in most years since 2012.

Winter survey routes in the Bald Hills are available in previous unpublished annual elk reports (Bensen 2005, Schmidt 2009).

Other Observations

There were 8 incidental observations recorded in the parks' Wildlife Observations database in 2017, most of which were turned in by staff. One report was of an apparently sick animal lying

"limp" on the ground, and another of a female limping heavily while other females were behaving aggressively toward her.

Incidents

Calving Season

There were 3 reported incidents involving aggressive cow elk in 2017. Two reports were from the GOBB calving area around Fern Canyon. The first, near the Fern Canyon parking lot, was on May 8 when 18 animals consisting of "cows and large calves" were encountered by 2 separate groups of visitors on the trail. According to the report, 3 elk would not move out of the trail and one elk bluff-charged a man. The elk approached within "2 arms' length". Another group of people *approached the elk* to within "1 arm's length or closer".

Two days later on May 10, 200 ft from the Fern Canyon trailhead the entire herd was feeding near the trail. At 6:30 p.m. 4 visitors passed by the animals without incident. On the way back at 7:30 p.m. the elk had moved to the east side of the trail. They alerted but did not move. The pair of hikers decided to wait for the elk to move. At 8:00 p.m. the pair approached the herd that was now on the side of the trail and in the parking lot. The largest animal, assumed to be a bull, walked toward the 2 people. At approximately 10:30 p.m. the pair were able to get to their friends after the elk moved into the grassy area south of the parking lot.

At the Elk Meadow viewing area (DARA herd), on June 15 there were many people watching elk. One cow trotted through the group of people. A woman was getting close and the elk looked agitated. A uniformed NPS employee asked the woman to return to the parking lot and addressed others in the crowd about the importance of keeping a distance between themselves and the elk. A man behind the employee then approached a different cow elk. When the employee turned around, the elk was chasing the man. The elk got within 2-3 ft when the man got around his car. When the he took out a camera and started back to toward the elk, he was stopped by the employee.

Rut

There was 1 report of aggression during the rut in 2017. On September 20, a bugling bull came around a corner and approached a park work crew that was pulling ivy on the edge of a road near an old mill site. It approached the group who retreated to their vehicles. The bull rejoined the herd after which the crew heard what sounded like the animals "fighting" in the vegetation.

Other

On December 5, well past the rut, a bull and 8 cows plus at least 1 calf blocked access to Fern Canyon at the parking lot. The bull purposefully walked towards any hiker that tried to walk past on the trail and was intimidating people. Five people waited 30 minutes and could not pass. Twelve people joined into a group and were able to walk by slowly on their way to the canyon.

Entanglements

There were no instances of antler entanglements in the parks in 2017.

Mortality/Injury

There were 2 known elk mortalities and 1 minor injury documented in RNSP in 2017. On February 1, the carcass of a poached female was discovered off of Bald Hills Road in Childs Hill Prairie. The hindquarters and other meat were removed, the guts and other parts were left. On September 28, a dead female with a clean cut around the groin area was reported to and observed by a California Department of Fish and Wildlife (CDFW) Warden along Davison Road near Highway 101. The head and rumen were located near the Cal Trans yard across from Geneva (a.k.a. Lost Man Creek) Road. On October 4, staff followed up on a report of an injured elk near Elk Prairie Campground that had an open chest (puncture-like) wound possibly caused by another elk.

Annual Elk Hunts

CDFW and the California State Fish and Game Commission regulate elk hunting in the State of California. Although no hunting is allowed in RNSP, CDFW's Northwestern California Roosevelt Elk Hunt includes lands in Humboldt and Del Norte counties in the vicinity of RNSP. This hunt may impact RNSP animals. Hunters acquire elk tags for this hunt by lottery draw; 15 bull tags and 3 either-sex tags were issued in 2017 for the Northwestern California hunt. Of these, 6 bulls were taken in the vicinity of Orick.

In 2016, the Shared Habitat Alliance for Recreational Enhancement (SHARE) program was created to improve public access to private land. One ranch in the Orick Valley is enrolled in this program; it was issued 3 tags in 2017, and 1 bull and 1 cow were taken. These animals and those from the Northwestern Hunt likely were from the OSOC herd.

The Private Lands Management (PLM) program offers landowners incentives to manage their lands for the benefit of wildlife through habitat conservation efforts. Green Diamond Resource Company (GDRC) and Stover Ranch hosted PLM hunts in the Bald Hills adjacent to or in the vicinity of the park. GDRC was issued 3 bull and 2 antlerless tags for this PLM in 2017. The hunt was 60% successful with 2 bulls and 1 cow harvested. The Stover Ranch was issued 4 bull and 2 antlerless tags. Four bull and 1 antlerless tags were filled for an 83% success rate. Both the Klamath and Stover Ranch hunts may impact the BAHI herd.

CDFW Project: *Investigating Abundance and Population Demography of Elk in Northwestern California*

Elk capture efforts for this research project began in January 2017. Adult cow elk were darted (tranquilized) and fitted with a GPS transmitter and ear tags prior to release. Eight elk from park herds were captured in 2017: 2 from the BAHI herd; 2 from OSOC; 2 from DARA; 1 from GOBB; and 1 from CBEC. In addition, 9 calves were captured and ear-tagged with VHF transmitters. The calves were from all of the above herds except GOBB. All but 3 of the tagged calves either died or the tags failed within weeks or months of tagging (CDFW 2017). The study

is ongoing in 2018. Seven undergraduate and 4 graduate studies are associated with this project. The Humboldt State University graduate studies are:

Erin Nigon
Title: Dynamics of neonate elk survival and mortality in Northern California

Summary: Juvenile survival is known to be highly variable, yet is fundamental to understand what drives change in wildlife populations and necessary for successful game management. Factors influencing calf survival in Roosevelt elk populations in northwestern California are poorly understood. This study will monitor GPS collared elk and radio-tagged elk calves in Del Norte and Humboldt counties for two years. The objectives of this study are to 1) estimate calf survival and determine recruitment rates for Roosevelt Elk in the area 2) evaluate the effects of sex, body mass, and birth date on annual calf survival and 3) identify factors influencing elk survival by investigating mortalities across all age classes.

Rudy Mena
Title: Herd counts and composition, habitat use and movements of Roosevelt elk in Northern California.

Summary: The objective of this study is to determine the efficacy of fecal pellet counts for use in population size estimates via fecal capture-recapture during a period of increased social cohesion of Roosevelt elk groups. This project aims to determine if: 1) fecal pellet distribution within elk home ranges can accurately describe group habitat use, and as a result 2) that site fidelity of elk groups increases the capture rates of individuals during fecal mark-recapture sampling occasions.

Emily Armstrong Buck
Title: Escherichia coli and Salmonella enterica in Roosevelt elk and cattle: enteric pathogens at the wildlife-domestic interface

Summary: This study will evaluate the prevalence of pathogens and parasites in elk and cattle in a preliminary attempt to determine risks of spillover and spillback between these species and may provide insight into demographic patterns observed. Specifically, the prevalence of Salmonella enterica and Escherichia coli are being examined in elk and domestic cattle.

Adam Mohr
Title: Habitat selection of Roosevelt and Tule elk

Summary: This study will use the location data collected from collared cow elk to investigate different aspects of their spatial ecology. A major component of this will be modeling the influence environmental factors (e.g. vegetation type, elevation, drought, development etc.) have on elk habitat selection. This will be done by applying newly developed spatial analysis techniques to gain new insight into elk travel corridors, parturition-related movements, and early neonatal survival.

****

Report prepared by Kristin Schmidt, Wildlife Biologist, Redwood National and State Parks

Acknowledgments: Thanks to Kyle Max, Heather Brown, and Gary Sousa for the fall counts in the Orick Valley and to the CBEC Interpretation staff for keeping an eye on that herd. Thanks to Terry Hines for her help with gathering up bits and pieces of elk data for this report and to Carrington Hilson for providing information on area elk hunts.

REFERENCES

Bensen, K. 2005. Herd unit classification of Roosevelt elk. Unpub. Rept. on file at South Operations Center, Orick CA 14 pp.

Bliss, L.M. and F.W. Weckerly. 2016. Habitat use by male and female Roosevelt elk in northwestern California. California Fish and Game 102(1):8-16.

California Dept of Fish and Wildlife. 2017. Investigating abundance and population demography of elk in Northwestern California. Annual Progress Report for California State Parks and Redwood National and State Park. State Parks permit #18-635-007. National Parks permit #REDW-2017-SCI-0025.

Hofstra, T., J. Sacklin, S. Veirs, A. Zakis, S. Hurd, J. Grenier, and T. Marquette. 1986. Elk management report, Redwood National Park, Arcata, CA. Unpub. Rept. on file at South Operations Center, Orick CA

Kolbe, N. R., and F. W. Weckerly. 2015. Home-range overlap of Roosevelt elk herds in the Bald Hills of Redwood National Park. California Fish and Game 101:208-217.

McCullough, D.R., F.W. Weckerly, P.I. Garcia, and R.R. Evett. 1994. Sources of inaccuracy in black-tailed deer herd composition counts. J. of Wildl. Mgmt 58:319-329.

RNSP [Redwood National and State Parks]. 2015. 2014 Herd Unit Classification and Management of Roosevelt Elk – Redwood National and State Parks. Unpublished Report on file at South Operations Center, Orick CA. 13 pp.

Schmidt, K. 2009. 2008 Herd unit classification of Roosevelt elk. Unpub. Rept. on file at South Operations Center, Orick CA 17 pp.

USDI [U.S. Department of the Interior]. 1983. Elk live trapping and relocation environmental assessment. Redwood National Park, Arcata, California. 11 pp. On file at South Operations Center, Orick, CA.

Wallen, R. L. 1997. Monitoring abundance and distribution of Roosevelt elk in 1996 in Redwood National and State Parks. Annual project report. Unpub. Rept. on file at South Operations Center, Orick CA 6 pp.

Weaver, S.P. and F.W. Weckerly. 2011. Sex ratio estimates of elk using counts and Bowden's estimator. California Fish and Game 97(3):130-137.

Weckerly, B. 2017. Population ecology of Roosevelt elk; conservation and management in Redwood National and State Parks. University of Nevada Press.

Weckerly, F.W. 1996. Roosevelt elk along the Prairie Creek drainage: an evaluation of estimating abundance and herd composition. California Fish and Game 82:175-181.

Weckerly, F.W. 2005. Grass and supplemental patch selection by a population of Roosevelt elk. J. Mamm. 86(3):630-638.

Weckerly, F.W. 2007. Constant proportionality in the female segment of a Roosevelt elk population. J. Wildl. Mgmt. 71(3): 773-777.

Weckerly, F.W. and D.R. Francis. 2004. Elk in north coastal California: habitat suitability, sign survey utility and population monitoring. Dept. of Biology, Texas State University, San Marcos, Texas. Unpub. Rept. on file at South Operations Center, Redwood National and State Parks, Orick, CA. 61pp.

Weckerly, F. W., McFarland, K. A., Ricca, M. A., and Meyer, K. P. 2004. Cropping rates, social affinity and sexual segregation in Roosevelt elk when population density changes. American Midland Naturalist 152:386-389.

PERSONAL COMMUNICATION

Dr. Floyd "Butch" Weckerly, Texas State University, San Marcos, TX

Appendix A

Highest reliable (ranking <3) cow counts for identified elk herds, 1998 to 2017 (data displayed, in part, in Figure 1 in the report). ND = no data available for that year.

Herd	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
OSOC	14	13	13	9	8	11	10	10	10	10	10	12	9	12	12	11	19	52	41	35
LRCR	26	32	38	31	31	27	18	22	22	21	17	15	16	18	18	19	21	0	N/A	N/A
BAHI*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	188	240	193	131	191	153
DARA	42	31	39	24	29	29	25	17	16	16	19	15	23	21	28	26	29	35	37	45
EPBY	21	15	20	19	9	5	6	5	4	5	2	3	0	0	2	4	3	1	2**	2
GOBB	33	25	29	26	29	20	16	14	10	8	12	13	10	16	19	25	15	12	21	14
CBEC	ND	ND	16	ND	23	ND	ND	30	ND	27	15	27	39	28	36	40	ND	40	30	ND

* Classification of this herd has only been possible since 2012.

**From opportunistic counts in late July 2016.

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MICROSATELLITE ANALYSIS OF THREE SUBSPECIES OF ELK (*CERVUS ELAPHUS*) IN CALIFORNIA

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A total of 676 elk (*Cervus elaphus*) were genotyped at 16 tetranucleotide microsatellite loci to evaluate genetic differences among 3 subspecies of elk in California: tule (*C. e. nannodes*), Roosevelt (*C. e. roosevelti*), and Rocky Mountain (*C. e. nelsoni*) elk. Of the 13 populations analyzed, 5 represented tule elk herds, 3 were Roosevelt elk, 2 were Rocky Mountain elk, and 3 were of uncertain taxonomic status. Overall, populations averaged between 7 and 8 alleles per locus, with observed heterozygosity values ranging from 0.33 to 0.58 per population. Tule elk, which experienced a severe bottleneck in the 1870s, had consistently less genetic diversity than the other subspecies. All 3 subspecies were significantly differentiated, with the greatest genetic distance seen between the tule and Roosevelt subspecies. Assignment of individuals to subspecies using microsatellite data was nearly 100% accurate. Despite the past population bottleneck, significant differences were found among the tule elk herds. Assignment testing of elk from Modoc, Siskiyou, and Shasta counties to determine subspecific status of individuals suggested that these populations contained both Roosevelt and Rocky Mountain elk and their hybrids, indicating that these elk subspecies interbreed where subspecies coexist.

Key words: California, *Cervus elaphus*, elk, genetics, hybrid, microsatellite, population

Elk (*Cervus elaphus*) herds that roamed a large portion of North America have been reduced in both area and number due to hunting pressure and loss of habitat. Although management strategies have aimed to reintroduce elk to some of their original range, these programs are not without potential genetic consequence. Genetic bottlenecks and founder effects are of great concern, and exacerbated by harem mating structure and high variability in male reproductive success (Clutton-Brock 1989).

California contains 3 of the described subspecies of free-ranging elk: tule elk (*C. e. nannodes*; historic resident of oak woodlands and grasslands), Roosevelt elk (*C. e. roosevelti*; northwestern coastal area), and Rocky Mountain (*C. e. nelsoni*; occupying the extreme northeastern corner of California, including Modoc County) elk. The remaining extant subspecies, Manitoban elk (*C. e. manitobensis*), occurs east of the Rocky Mountains in the northern plains states and into central Canada but does not inhabit California. Although each subspecies naturally occurs in different locations within California, there are potential geographic regions of overlap between Roosevelt and Rocky Mountain elk, allowing for the possibility of hybrid zones.

Tule elk residing in the Central Valley and oak woodlands of the foothills of California were almost eliminated after the gold rush of 1849 (McCullough et al. 1996). Historically estimated at more than 500,000 animals, tule elk were compromised by extreme hunting pressure and conversion of grass and woodland habitat into farming and agricultural operations. In 1873, when tule elk were thought to be extinct, protection was granted by the state of California (McCullough 1969; McCullough et al. 1996). Although exact numbers vary, it is believed that at least a single breeding pair of tule elk was found and protected in the southern San Joaquin Valley in Kern County, California, in 1874. Those remaining elk are believed to be the ancestors of extant tule elk populations in California (McCullough 1969; McCullough et al. 1996).

Roosevelt elk inhabit their historical range in the northwestern coastal mountain ranges of California (O'Gara 2002), mainly Humboldt and Del Norte counties. Only elk inhabiting these 2 counties are categorized as Roosevelt elk by the Boone

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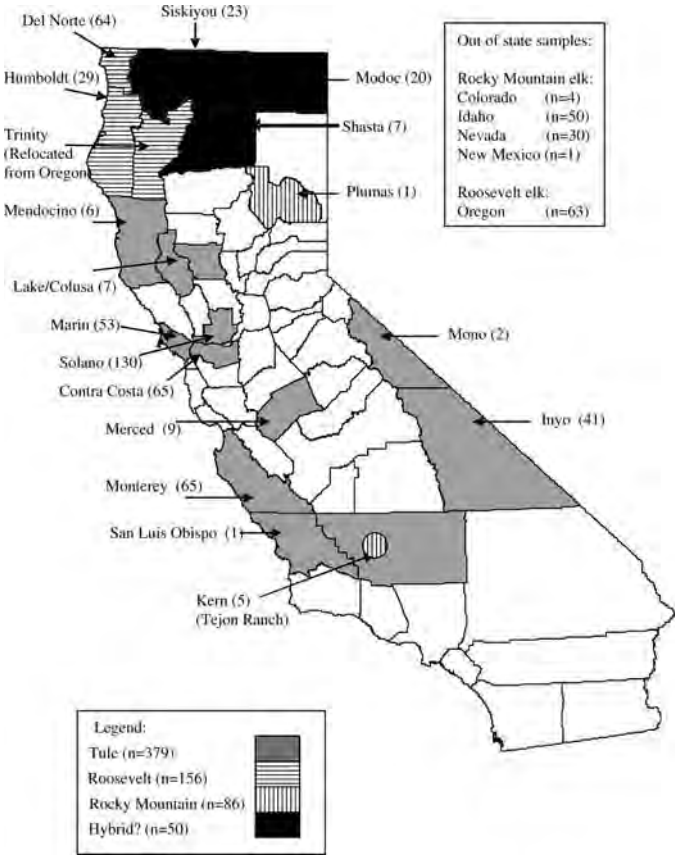

Fig. 1.—Map depicting number of individuals sampled at each herd location given by county name. Gray shaded areas represent counties that contain herds of tule elk, horizontal lines indicate counties with herds of Roosevelt elk, vertical lines indicate counties with herds of supposed Rocky Mountain elk, and diagonal lines indicate potential hybrid zones of Roosevelt and Rocky Mountain elk.

and Crockett Club (Missoula, Montana) for trophy-hunting purposes (Reneau and Reneau 1993). Discrimination of distinct herds of Roosevelt elk is difficult because of the dense forest habitat. Examination of satellite tracking data indicates restricted movement of animals and the possibility of distinct herds (R. Schaefer, in litt.).

Examination of satellite data (R. Schaefer, in litt.) provides evidence that Rocky Mountain Elk of northeastern California may migrate between Modoc County and Oregon, Idaho, and Nevada. Circa 1913, approximately 50 Rocky Mountain elk from Montana were introduced into Shasta County, California (R. Schaefer, in litt.).

Shasta, Siskiyou, and Modoc counties in northern California are considered to be potential hybrid zones for Roosevelt and Rocky Mountain elk by California Department of Fish and Game wildlife managers. For the purpose of our study, the term ''hybrid'' refers to an intraspecific cross. Interstate 5, a major north–south highway in Washington, Oregon, and California, has been used as an arbitrary management boundary for subspecies delineation: elk occurring west of Interstate 5 have been designated Roosevelt and those to the east of Interstate 5 as Rocky Mountain elk. Lone elk are known to wander and travel great distances (>150 miles—R. Schaefer, in litt.), and crossing the unfenced Interstate 5 is likely, as inferred by presence of road-killed elk (R. Schaefer, in litt.). Because Roosevelt and Rocky Mountain trophy elk are recorded separately by hunting organizations, determination of the genetic lineage of animals in these areas will benefit trophy hunters and wildlife managers.

Subspecific status of North American elk has been hotly debated (see O'Gara [2002] for discussion of the taxonomy of North American elk). Overlap of morphological differences among tule, Roosevelt, and Rocky Mountain subspecies demands that other discriminating criteria, such as molecular genetic analyses, are used to address taxonomic status. Tule elk are considered the smallest subspecies of North American elk (Merriam 1905) and are typified by having lower body masses, lighter pelage, and the longest toothrows of any North American subspecies. Roosevelt elk reportedly have the largest body mass and display different antler and jaw morphologies from the others (McCullough 1969; O'Gara 2002). Of the 3 subspecies, Rocky Mountain elk typically have the largest antlers (Reneau and Reneau 1993).

Evidence derived from mitochondrial DNA indicates that tule elk are more closely related to Rocky Mountain than Roosevelt elk, and supports the subspecific status of these 3 categories of elk (Polziehn et al. 1998, 2000; Polziehn and Strobeck 1998, 2002). Using microsatellite data, Williams et al. (2004) showed that tule elk display reduced genetic variation relative to Rocky Mountain and Manitoban elk; however, small sample size prevented robust tests of genetic differentiation among populations of tule elk.

The primary goal of our study was to measure the degree of nuclear genetic differentiation between tule, Roosevelt, and Rocky Mountain elk and evaluate whether the populations of elk in California warrant status as evolutionarily significant units. Given that Roosevelt and Rocky Mountain elk are sympatric in California, yet recorded separately for trophy records, wildlife managers will benefit from genetic information that identifies subspecies composition, particularly in potential hybrid zones. Genetic discriminators will allow identification of subspecies in trophy animals, hair samples from field sampling efforts, and forensic samples. Toward these objectives, we used 2 population assignment programs, WHICHRUN (Banks and Eichert 2000) and STRUCTURE 2.1 (Pritchard et al. 2000), to test the accuracy of assignment to subspecies from multilocus genotype data. Lastly, we assessed the risks and degree of inbreeding faced by herds of tule elk and make recommendations for monitoring and managing these herds.

Materials and Methods

Sample collection and DNA isolation.—A total of 676 elk were analyzed in this study (Fig. 1). The majority of the samples were from a large tissue archive maintained by the California Department of Fish and Game's Wildlife Forensic Laboratory (Rancho Cordova, California). Tissue and blood samples were collected from road-killed animals or animals legally taken at scheduled hunts and elk relocations throughout

California from 1997 through 2003. Samples were shipped frozen on ice to the Wildlife Forensic Laboratory and maintained at −20°C until DNA extraction.

Tule elk from 8 herds were sampled, including 2 of the original 3 surviving herds established in the 1930s: the Owens Valley herd (Inyo County) and the Cache Creek herd (Colusa and Lake counties). The remaining 6 herds of tule elk sampled were created by later translocations; however, all herds of tule elk are descendants from 1 original remnant population.

Samples of Rocky Mountain elk collected from Nevada and Idaho served as reference samples for comparison to Rocky Mountain elk in California. Five Rocky Mountain elk originally translocated from Wyoming to Tejon Ranch in Kern County, California, were sampled. Roosevelt elk from Jewell, Oregon, and translocated to Trinity County, California, between 1988 and 1995 were examined. The Nevada Department of Wildlife supplied muscle tissue samples of 30 Rocky Mountain elk, and the Idaho Department of Fish and Game provided 49 diluted DNA extracts (10 ng/μl) and 1 muscle tissue sample.

The DNA was isolated from all tissue and blood samples using Qiagen QIAmp tissue isolation kits and procedures (Qiagen, Chatsworth, California). After extraction, DNA was quantified using a Molecular Dynamics model 595 Fluorimager (Molecular Dynamics, Sunnyvale, California) using human DNA reference standards of known concentration. DNA from extracted tissue samples was diluted to a concentration of 10 ng/μl; blood extracts were not diluted.

Microsatellite analysis.—Multiplex polymerase chain reaction was used to amplify 16 tetranucleotide microsatellite markers developed specifically for elk or mule deer (*Odocoileus hemionus*; see Table 1 for references). All loci used were developed from enriched libraries by GIS Inc. (Chatsworth, California). These primers were selected based upon their highly repeatable polymerase chain reaction products and variability within and among the 3 subspecies of elk described herein.

Forward primers were fluorescently labeled with 6FAM, VIC, or NED (Applied Biosystems, Foster City, California) and the reverse primer had a 5′-GTTTCTT-3′ extension added to the 5′ end to reduce split peaks and drive the reaction to the "plus A" band (Brownstein et al. 1996). Polymerase chain reaction fragments were detected using a BaseStation DNA Fragment Analyser (MJ Research, Inc., Waltham, Massachusetts).

Each amplification cocktail included up to 20 ng of template DNA, 1X PCR buffer (Applied Biosystems), 2.4 μl of multiplex specific primer concentrations (see below), 0.2 mM of each deoxynucleoside triphosphate, 2 mM $MgCl_2$, and 0.2 U (Multiplex D, A, and E) or 0.25 U (Multiplex N) Amplitaq (Applied Biosystems) and double-distilled H_2O to total 20 μl per reaction. Polymerase chain reaction primer concentrations are indicated in Table 1. Reactions containing at least 5 ng/μl DNA were run on a PTC-100 thermalcycler (MJ Research, Inc.) with the following amplification parameters: 94°C for 3 min, followed by 26 cycles of 94°C for 30 s, 58°C for 30 s, 72°C for 40 s, a final extension at 72°C for 20 min, and a final hold at 10°C. All blood samples and tissue samples containing less than 5 ng/μl DNA were amplified for 30 cycles. One microliter of polymerase chain reaction product was then added to 4 μl of loading buffer (double-distilled H_2O, formamide, blue dextran, Genescan 400HD ROX [Applied Biosystems], and Genescan 500 ROX [Applied Biosystems] mixed in a ratio of 220 μl : 155.2 μl : 51.7 μl : 12 μl : 12 μl). Polymerase chain reaction products were separated using a denaturing 5.5% acrylamide gel (Long Ranger Gel Solution, Cambrex Bio Science Rockland Inc., Rockland, Maine). Gel data analysis and allele sizing were performed using Cartographer (MJ Research, Inc.).

Table 1.—Summary of loci examined in this study. This table shows in which multiplex each locus was amplified, polymerase chain reaction (PCR) primer concentration (each primer), 5′ fluorescent dye label used, number of alleles, heterozygosity values observed (H_O), and the reference in which the original primer sequences can be found. Note that all the reverse primers were modified with a 5′-GTTTCTT sequence to reduce split peaks and encourage the formation of "+A" bands during polymerase chain reaction. References: 1 = Jones et al. (2002); 2 = Meredith et al. (2005); 3 = Jones et al. (2000).

Locus	Multiplex	PCR concentration (μM)	5′ dye label	No. alleles	Size range (base pairs)	H_O	Reference
T108	D	0.100	6Fam	8	136–181	0.540	1
T26	D	0.483	6Fam	12	328–398	0.565	1
T172	D	0.017	Vic	7	174–198	0.450	1
T501	D	0.600	Ned	9	252–290	0.576	1
T268	N	0.092	6Fam	6	228–256	0.437	1
T156	N	0.062	Vic	15	143–249	0.545	1
T507	N	0.062	Ned	11	148–202	0.390	1
C273	N	0.985	6Fam	8	132–166	0.553	2 and 3
T193	A	0.706	6Fam	10	184–220	0.599	1
C217	A	0.212	Vic	2	185–193	0.415	1
T123	A	0.282	Ned	4	155–186	0.399	1
C180	E	0.048	6Fam	4	156–168	0.507	2
T107	E	0.144	Vic	4	242–265	0.326	2
C229	E	0.144	6Fam	5	299–319	0.363	2
C143	E	0.240	Ned	4	166–178	0.492	2
C01	E	0.624	Ned	5	342–358	0.433	2

Statistical methods.—Genotypic data were collected on all 676 samples. However, only those counties or states (Idaho, Nevada, and Oregon) with at least 20 animals ($n = 632$) were used in frequency-based analyses, specifically the calculation of *F*-statistics and log-likelihood statistics of population differentiation. Because the alleles were not sequenced to determine the actual number of tetranucleotide repeat units, statistical models conforming to the infinite alleles model were used.

Allele frequencies, unique alleles, and observed and expected heterozygosities within counties or states ("populations") with a minimum of 20 individuals and within each of the 3 subspecies were calculated using GENEPOP on the Web (http://www.biomed.curtin.edu.au/genepop—Raymond and Rousset 1995). For frequency-based analyses, the populations of Roosevelt elk used were from Humboldt and Del Norte counties (California) and Jewell, Oregon; the populations of Rocky Mountain elk used were from Nevada and Idaho. Deviations from linkage equilibrium between all pairs of loci

across all populations and conformation to Hardy–Weinberg equilibrium on a locus-by-locus basis within populations also were tested using GENEPOP. The *P*-value for a significant deviation from Hardy–Weinberg equilibrium using the exact test (Guo and Thompson 1992) was adjusted from 0.05 to 0.00027 using a Bonferroni adjustment for 186 tests of the same hypothesis (16 loci by 12 populations with 6 loci being monomorphic in a population). A Bonferroni-adjusted *P*-value of 0.0014 was used to assess significance for multiple tests of deviation from Hardy–Weinberg equilibrium at the subspecies level (3 subspecies and 16 loci).

Quantitative measures of population differentiation (F_{ST}) and inbreeding (F_{IS}) were made among subspecies and among populations within subspecies using the software package FSTAT (FSTAT, a program to estimate and test gene diversities and fixation indices, version 2.9.3, J. Goudet, 2001; http://www.unil.ch/izea/softwares/fstat.html) as described in Weir and Cockerham (1984) after Bonferroni-adjusted pairwise significance levels. Samples from Modoc, Shasta, and Siskiyou counties were not used in the comparisons of subspecies populations because the taxonomy of elk from these 3 counties was uncertain.

Analysis of molecular variance (AMOVA; ARLEQUIN—Schneider et al. 2000) was used to evaluate the degree of population differentiation based on the relative number of repeats. Genotypic data were analyzed using subspecies, populations within subspecies, and individuals within populations as sources of variation.

The measure of genetic distance among 12 of the county or state sampling groups was Nei's standard distance (Ds—Nei 1972), calculated in PHYLIP, version 3.5c (Felsenstein 1993) using GENDIST. The neighbor-joining method was used in NEIGHBOR (PHYLIP, version 3.5c—Felsenstein 1993).

Animals were assigned to subspecies using genotypic data and 2 population assignment software packages, WHICHRUN (Banks and Eichert 2000) and STRUCTURE 2.1 (Pritchard et al. 2000), to test accuracy of assigning to presumptive subspecies. Elk from the hybrid zones were excluded because of the confounding effects of uncertain lineage. A baseline genotype data file was constructed using known reference animals, including 367 tule elk, 156 Roosevelt elk, and 80 Rocky Mountain elk. The tule elk baseline reference samples consisted of animals from Contra Costa County ($n = 65$), Inyo County ($n = 41$), Lake County ($n = 5$), Marin County ($n = 53$), Monterey County ($n = 65$), and Solano County ($n = 130$). Roosevelt elk baseline samples included Del Norte County ($n = 64$), Humboldt County ($n = 29$), and Oregon ($n = 63$). Rocky Mountain elk baseline samples included elk from the states of Idaho ($n = 50$) and Nevada ($n = 30$).

In WHICHRUN, the probability of a given sample belonging to a "critical population" was generated by a likelihood ratio log of odds score of the probabilities of the 1st and 2nd most probable population assignment given that sample's genotype. The baseline data file of the 603 samples was jackknifed, a log of odds score was generated for the most probable population assignment, and each sample was assigned to that subspecies with log of odds score of ≥ 1.0.

WHICHRUN was then used to assign individual elk from Modoc, Siskiyou, and Shasta counties to Rocky Mountain or Roosevelt subspecies with log of odds score of ≥ 1.0. Five elk from the Tejon Ranch (Kern County) and 6 elk from Mendocino County also were analyzed for subspecies verification. The 6 elk from Mendocino County were collected in 2 different locations. An individual was assumed to be a possible hybrid if the log of odds score for both Roosevelt and Rocky Mountain was ≤ 1.0. The same analysis parameters were used for assignment testing of baseline data and for animals of unknown ancestry.

The baseline genetic data also were tested for assignment accuracy using the program STRUCTURE using 100,000 rounds of iteration after a 10,000-round burn-in. The STRUCTURE genetic analysis program also was used to test assignment of reference elk and samples from Modoc, Siskiyou, and Shasta counties. STRUCTURE was used to estimate the number of lineages that comprise the counties or states without using a priori population information. The number of populations (K) was evaluated for 1–20 populations. Most likely number of populations was determined by $\Delta(K)$ as described in Evanno et al. (2005).

Elk were classified as potential hybrids if the most probable subspecies was <10 times more likely than the 2nd most probable subspecies, indicative of past introgression. This is mathematically equivalent to the log of odds score threshold of 1.0 used in WHICHRUN for subspecies assignment.

Results

Measures of genetic diversity.—Within the 676 samples, loci possessed from 2 alleles (locus C217) to 15 (locus T156; average = 7.3) with observed heterozygosity values ranging from 0.33 (locus T107) to 0.60 (locus T193). F_{IS} estimated for the 5 herds of tule elk analyzed ranged from −0.038 (Contra Costa County) to 0.079 (Inyo County). Tule elk displayed the lowest allelic diversity and showed no more than 5 alleles at each locus (average number of alleles = 3.2), with several loci being monomorphic in some of the tule elk herds. Rocky Mountain elk averaged 6.8 alleles per locus and Roosevelt elk were intermediate with an average of 5.2.

The 16 loci did not show departures from Hardy–Weinberg equilibrium within analyzed counties or states after a Bonferroni correction. However, when data were pooled by subspecies, several loci departed from Hardy–Weinberg equilibrium. No loci deviated significantly from Hardy–Weinberg equilibrium in the 80 samples of Rocky Mountain elk, 6 loci deviated from Hardy–Weinberg equilibrium within the samples of tule elk, and 1 locus deviated significantly from Hardy–Weinberg equilibrium within the samples of Roosevelt elk.

Relationships among subspecies and populations (Table 2).—There were significant differences in allele frequencies among populations of tule elk. Exact tests of population differentiation yielded a *P*-value of <0.0002 and significance at all pairwise comparisons of the tule elk herds (1% level after Bonferroni corrections). The overall value of F_{ST} for the 5 populations of tule elk was 0.11.

TABLE 2.—Genetic distances among the 3 subspecies of elk (*Cervus elaphus*) in California and their populations. Data are presented for both the population and subspecific levels of comparison. Nei's standard genetic distance values are above the diagonal and F_{ST} values are below. Significance levels for pairwise tests are: *** $P = 0.001$, ** $P = 0.01$, and * $P = 0.05$ after a Bonferroni correction. The Oregon samples were collected from animals released into California from Oregon. Sample sizes for each population or herd are given in Fig. 1.

	Tule elk herds					Roosevelt elk populations			Rocky Mountain elk populations		Subspecies		
	Contra Costa	Inyo	Marin	Monterey	Solano	Del Norte	Humboldt	Oregon	Idaho	Nevada	Tule	Roosevelt	Rocky Mountain
Tule													
Contra Costa	—	0.03	0.12	0.03	0.07	0.49	0.64	0.42	0.46	0.62			
Inyo	0.06**	—	0.11	0.02	0.08	0.54	0.74	0.50	0.47	0.63			
Marin	0.19**	0.14**	—	0.10	0.08	0.42	0.61	0.34	0.37	0.45			
Monterey	0.07**	0.03**	0.13**	—	0.06	0.55	0.71	0.45	0.45	0.56			
Solano	0.12**	0.12**	0.10**	0.10**	—	0.41	0.59	0.39	0.39	0.53			
Roosevelt													
Del Norte	0.37**	0.33**	0.25**	0.34**	0.29**	—	0.18	0.09	0.31	0.53			
Humboldt	0.47**	0.42**	0.34**	0.42**	0.37**	0.12*	—	0.25	0.47	0.61			
Oregon	0.40**	0.37**	0.27**	0.37**	0.31**	0.06*	0.16*	—	0.17	0.31			
Rocky Mountain													
Idaho	0.33**	0.28**	0.21**	0.28**	0.27**	0.14**	0.19**	0.13**	—	0.09			
Nevada	0.38**	0.33**	0.25**	0.33**	0.31**	0.20**	0.24**	0.18**	0.03*	—			
Subspecies													
Tule											—	0.55	0.48
Roosevelt											0.30*	—	0.31
Rocky Mountain											0.28*	0.14*	—

Exact tests of population differentiation, as measured by allele frequencies, were highly significant ($P < 0.0002$) among populations of Roosevelt elk (Oregon and Humboldt and Del Norte counties) and among populations of Rocky Mountain elk (Nevada and Idaho). F_{ST} values among populations of Roosevelt elk ($F_{ST} = 0.096$) and between populations of Rocky Mountain elk ($F_{ST} = 0.03$) were less than those observed among herds of tule elk. Individual populations of Roosevelt and Rocky Mountain elk showed significant differentiation at the 5% nominal level after Bonferroni corrections.

Data from the 3 subspecies were analyzed as a whole and tested for population differentiation using subspecies as the source of variation (Table 2). A highly significant Exact test ($P < 0.0002$) suggested that there were greater differences in allele frequencies among the 3 subspecies than among populations or herds within any of the 3 subspecies. Pairwise tests of differentiation between the 3 subspecies were all significant at the 5% nominal level of significance after a Bonferroni correction. The AMOVA results (Table 3) indicated that the subspecies are well differentiated.

STRUCTURE yielded results, both in terms of K populations and $\Delta(K)$, that suggested the sampled elk are from 2 "populations": tule and Roosevelt–Rocky Mountain elk lineages. Although the likelihood values for $K = 1$–20 populations approached a maximum at $K = 3$ populations, the $\Delta(K)$ values spiked at $K = 2$ populations.

Subspecies clustered distinctly, with 100% bootstrap support between tule elk and the other 2 subspecies (Fig. 2). The node separating the 2 Rocky Mountain elk populations (Idaho and Nevada) from the other subspecies populations had a 94% level of bootstrap support.

Assignment testing.—All of the 367 samples presumptively categorized by wildlife managers as tule elk assigned correctly using both WHICHRUN and STRUCTURE (Table 4). STRUCTURE was slightly more accurate in assigning reference elk to their presumptive subspecies, although both programs yielded a very high success rate of correct assignment. Population assignment of Roosevelt and Rocky Mountain elk had a small error rate (<5%), which varied by analysis program. One presumptive Roosevelt elk collected from eastern Oregon (Bend, Oregon) was assigned to the Rocky Mountain subspecies with >3.0 log of odds score.

Assignment testing of individual elk using both STRUCTRE and WHICHRUN (Table 5) revealed that Modoc, Shasta, and Siskiyou counties were inhabited by Rocky Mountain, Roosevelt, and hybrid elk. The same individuals were identified as hybrids by both programs. The 5 individuals from the Tejon Ranch in Kern County were correctly assigned as Rocky Mountain elk. The 6 elk from Mendocino County consisted of 2 Roosevelt elk and 4 tule elk.

TABLE 3.—Analysis of molecular variance of 3 subspecies of elk (*Cervus elaphus*) in California using subspecies, populations within subspecies, and individuals as sources of variation. Samples were collected from 1997 through 2003.

Source of variation	*d.f.*	Sum of squares	Variance components	Percentage of variation (%)
Among subspecies	2	905.12	1.253 Va	24.18
Among populations within subspecies	7	319.94	0.3631 Vb	7.00
Within populations	1,170	4,174.93	3.568 Vc	68.81
Total	1,179	5,399.99	5.185	

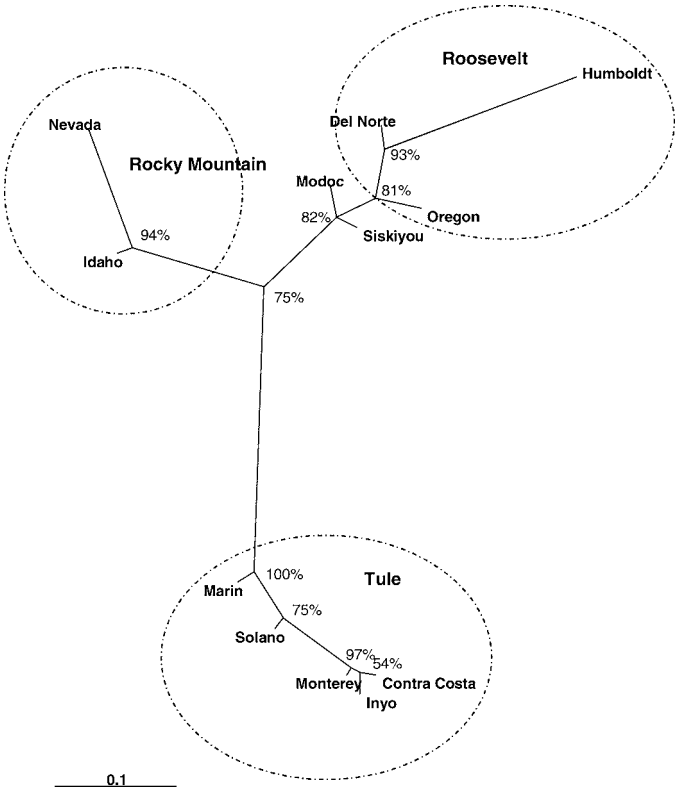

Fig. 2.—Unrooted tree of Nei's standard genetic distance after bootstrapping the data 1,000 times. The bootstrap level of support (out of 1,000) is indicated at each node. Included are all populations of elk with at least 20 samples.

Discussion

Tule elk have much reduced microsatellite variation compared to the Roosevelt and Rocky Mountain elk subspecies, as expected given the severe population bottleneck in the late 1800s. The low level of genetic variability in the tule elk was likely due to the low numbers of founders rather than insufficient sampling, because sampling collections were well distributed among herds. Thus, the molecular genetic uniqueness of the tule elk resulted from lack of genetic variation, not from novel genetic variability.

Tule elk may have been reduced to 1 breeding pair in 1874 (McCullough et al. 1996). Barring a mutation event or experimental error, the presence of 5 alleles at 1 locus requires that the tule elk subspecies was reduced to no fewer than 1 female and 2 males, or vice versa. Allele frequencies varied significantly among the herds of tule elk. The results also suggest that the herds in Contra Costa, Inyo, and Monterey counties were more closely related than the other 2 herds of tule elk; the Marin herd was the most distantly related. This also was reflected in the phylogenetic results (Fig. 2) and follows logically from historical information on relocations (McCullough et al. 1996). Because all tule elk originated from the same herd, founder effects and genetic drift likely caused the herds to diverge genetically in spite of relocation efforts.

Table 4.—Assignment test results for 3 subspecies of elk (*Cervus elaphus*) in California using programs WHICHRUN and STRUCTURE 2.1. The numbers of correct assignments are on the diagonal and incorrect assignment counts are off the diagonal for each program.

Software	Subspecies	*n*	Tule	Roosevelt	Rocky Mtn.
WHICHRUN	Tule	367	367	—	—
	Roosevelt	156	—	151	5
	Rocky Mountain	80	—	1	79
STRUCTURE 2.1	Tule	367	367	—	—
	Roosevelt	156	—	154	1
	Rocky Mountain	80	—	—	80

Table 5.—Assignment tests of elk from Modoc, Siskiyou, Shasta, and Kern counties, California, using programs WHICHRUN and STRUCTURE. Animals are noted as potential hybrids using WHICHRUN when the log of odds score of assignment was less than 1.0, and when the probability of assignment was less than 10 times the 2nd most probable subspecies using STRUCTURE.

	County			
Program	Modoc ($n = 20$)	Siskiyou ($n = 23$)	Shasta ($n = 7$)	Kern ($n = 5$)
WHICHRUN				
Roosevelt	9	15	1	0
Rocky Mountain	10	2	5	5
Hybrid	1	5	1	0
STRUCTURE 2.1				
Roosevelt	9	15	1	0
Rocky Mountain	10	2	5	5
Hybrid	1	5	1	0

Although tule elk do not currently display the effects of reduced fitness, such as low reproductive output and morphological deformities, the individual herds are definitely at risk if they remain genetically isolated. However, reduced genetic variation at neutral loci does not necessarily indicate a lack of adaptability (Hedrick 1999, 2001) and would not warrant intentional crossbreeding with Roosevelt or Rocky Mountain elk.

We propose the following management recommendations for tule elk given the genetic data and their life-history characteristics. Management of tule herds should continue to involve the movement of animals, preferably mature females, between the tule herds. Adult female elk would be much more likely to contribute genetically because of the harem mating structure, because an introduced male elk would likely have to establish dominance before breeding. Translocating elk among Inyo, Contra Costa, and Monterey counties should not negatively impact genetic diversity of these 3 herds, because they are closely related.

Periodic monitoring of the physical health and genetics of the tule herds is required in order to detect a rise in frequency of deleterious inherited phenotypes, reduced fitness, and other effects of inbreeding. Although the 6 elk samples from Mendocino County were either pure tule or pure Roosevelt and did not indicate crossbreeding, the elk in the Mendocino and Lake county areas should be monitored for hybridization. The tule and Roosevelt elk sampled were from 2 differ-

ent locations and did not occur sympatrically. Tule elk in Mendocino County have recently been detected in close proximity to Roosevelt elk (R. Schaefer, in litt.). Introgression of Roosevelt elk into these tule herds should prohibit their use for future transplants.

The reproductive strategy of elk makes this species vulnerable to the loss of genetic diversity. Williams et al. (2002, 2004) applied theory and computer simulation to conclude that elk in small isolated herds tend to lose genetic variation and heterozygosity. The effect of small population size is magnified by the highly polygynous nature of elk, and even brief bottlenecks can have a large effect on the number of alleles and heterozygosity of species with this mating system.

The effects of a small population size on a mammal are well illustrated by research on Florida panthers (*Puma concolor coryi*). Hedrick (2001) suggested that populations that remain small over a long time period would incur a large genetic load from fixation of many deleterious alleles of small effect, as seen in the Florida panther. Even with an effective population size of 30–50, this subspecies of panther so rapidly accumulated deleterious alleles through drift and inbreeding that it was in serious danger of extinction (Hedrick 1995).

Population assignment for individual reference elk with known source populations using multilocus genotype data was concordant with source population records because of highly significant differences in allele frequencies observed between the subspecies. Two population assignment software programs, WHICHRUN and STRUCTURE, yielded nearly identical assignment accuracies. This high degree of accuracy is important from a forensic standpoint because tule elk are a heavily managed subspecies within California; recaptured escapees from game refuges and evidence from suspected cases of tule elk poaching now can be reliably identified to subspecies.

Elk present in the northern California counties of Modoc, Siskiyou, and Shasta are genetically Roosevelt elk, Rocky Mountain elk, or hybrids of these 2 subspecies. Thus, trophy elk taken by sportsmen from these counties cannot be reliably assigned to subspecies in the absence of molecular genetic information. The unique genetic character of Roosevelt elk from California merits careful monitoring of translocations of elk if new animals are moved into the existing herds in Humboldt and Del Norte counties from areas containing elk of mixed ancestry.

Our analyses lend strong support to previously published work suggesting that tule, Roosevelt, and Rocky Mountain elk should be designated as discrete subspecies (Polziehn et al. 1998, 2000; Polziehn and Strobeck 1998, 2002) and as evolutionarily significant units. Values of F_{ST} and log-likelihood values for tests of population differentiation were highly significant. AMOVA results indicated that the subspecies are well differentiated and gene flow has likely occurred among populations within the subspecies.

The criteria used for determining which populations comprise an evolutionarily significant unit have been the topic of considerable debate (i.e., Crandall et al. 2000; Fraser and Bernatchez 2001; Moritz 1994, 2002). We incorporated criteria from these studies and propose evolutionarily significant units for elk in California. Tule elk displayed highly significant differences in nuclear allele frequencies relative to other elk populations, consistent with the criteria of Waples (1991) and Moritz (1994, 2002). Given its unique ecological niche, evolutionarily significant unit status is warranted under the ''ecological exchangeability'' concept of Crandall et al. (2000).

We propose evolutionarily significant unit status for Roosevelt elk of the north coast of California (Humboldt and Del Norte counties). Again, significant genetic divergence was observed between this group and the other sampled populations. Because Roosevelt elk from the Olympic Peninsula in Washington State may have some Rocky Mountain introgression (Polziehn and Strobeck 2002), care (and perhaps genetic testing) is essential before translocating elk from the Olympic Peninsular to augment Roosevelt elk in other regions, including California.

Rocky Mountain elk are the least populous elk in California, although they exist in great numbers in the mountains of the western United States. They are genetically distinct from both the Roosevelt and tule elk and inhabit environments where the tule elk are absent. The only pure population of Rocky Mountain elk within California identified from this study occurs at Tejon Ranch (Kern County). These animals originally were imported from Yellowstone National Park, Wyoming. California Department of Fish and Game managers had expressed concern that these animals had bred with tule elk at 1 point in time; this concern appears unfounded. Rocky Mountain elk and tule elk are held at 2 physically separated ranches in Kern County. Although Rocky Mountain elk are sympatric with Roosevelt elk in northern California, their range extends beyond that of Roosevelt elk east into the Rocky Mountains. Elk taken from the counties containing hybrids should be genetically tested on an individual basis to determine the subspecies of their source. Polziehn et al. (2000) documented that population subdivision and restricted gene flow occurs in herds of Rocky Mountain elk, many of which were relocated or reintroduced. Considering that this subspecies covers a large geographic area, future studies covering larger geographic areas are likely to identify additional Rocky Mountain elk evolutionarily significant units.

To date, our study is the most comprehensive population genetic analysis of the 3 subspecies of elk inhabiting California and should provide valuable information for elk managers and wildlife law enforcement. Future conservation efforts should focus on ensuring connectivity between herds or populations within each evolutionarily significant unit to ensure that adaptive genetic variation is maintained in a large population and not removed by genetic drift or fixed by inbreeding in small isolated populations. Current population management efforts focus primarily on the protected tule elk, maintained as several distinct, isolated herds across the state. We recommend the continued translocation of tule elk between the herds in order to maintain the genetic diversity of the tule subspecies and avoid the potential inbreeding that can occur in small polygynous herds.

Acknowledgments

We thank California Department of Fish and Game wardens and biologists. Additionally, we appreciate the assistance of K. Rudolph (Idaho Deparment of Fish and Game), J. Dayton and B. Gonzales (California Department of Fish and Game) for acquisition of additional samples, and R. Callas (California Department of Fish and Game) for helpful information regarding Roosevelt and Rocky Mountain elk of California. The California Deer Association, the Rocky Mountain Elk Foundation, the Sacramento Safari Club, and the Mule Deer Foundation provided additional financial support for this research and the ongoing genetics research conducted by the Wildlife Forensic Laboratory of the California Department of Fish and Game. We also thank R. K. Wayne (University of California, Los Angeles) and anonymous reviewers for their many helpful comments. In memory of K. Levine, whose years of dedication to the Wildlife Forensic Laboratory ended far too early.

Literature Cited

Banks, M. A., and W. Eichert. 2000. WHICHRUN (version 3.2): a computer program for population assignment of individuals based on multilocus genotype data. Journal of Heredity 91:87–89.

Brownstein, M. J., J. D. Carpten, and J. R. Smith. 1996. Modulation of non-templated nucleotide addition by Taq DNA polymerase: primer modifications that facilitate genotyping. BioTechniques 20:1004–1010.

Clutton-Brock, T. H. 1989. Mammalian mating systems. Proceedings of the Royal Society of London, B. Biological Sciences 236:339–372.

Crandall, K. A., O. R. P. Bininda-Emonds, G. M. Mace, and R. K. Wayne. 2000. Considering evolutionary processes in conservation biology: returning to the original meaning of ''evolutionarily significant units.'' Trends in Ecology and Evolution 15:290–295.

Evanno, G., S. Regnaut, and J. Goudet. 2005. Detecting the number of clusters of individuals using the software STRUCTURE: a simulation study. Molecular Ecology 14:2611–2620.

Felsenstein, J. 1993. PHYLIP (phylogeny inference package). Version 3.5c manual. Distributed by the author, Department of Genetics, University of Washington, Seattle.

Fraser, D. J., and L. Bernatchez. 2001. Adaptive evolutionary conservation: towards a unified concept for defining conservation units. Molecular Ecology 10:2741–2752.

Guo, S., and E. Thompson. 1992. Performing the exact test of Hardy–Weinberg proportion for multiple alleles. Biometrics 48:361–372.

Hedrick, P. W. 1995. Gene flow and genetic restoration: the Florida panther as a case study. Conservation Biology 9:996–1007.

Hedrick, P. W. 1999. Perspective: highly variable loci and their interpretation in evolution and conservation. Evolution 53:313–318.

Hedrick, P. W. 2001. Conservation genetics: where are we now? Trends in Ecology and Evolution 16:629–636.

Jones, K. C., K. F. Levine, and J. D. Banks. 2000. DNA-based genetic markers in black-tailed and mule deer for forensic applications. California Fish and Game 86:115–126.

Jones, K. C., K. F. Levine, and J. D. Banks. 2002. Characterization of eleven polymorphic tetranucleotide microsatellites for forensic application in California elk (*Cervus elaphus*). Molecular Ecology Notes 2:425–427.

McCullough, D. R. 1969. The tule elk: its history, behavior, and ecology. University of California Publications in Zoology 88:1–209.

McCullough, D. R., J. K. Fischer, and J. D. Ballou. 1996. From bottleneck to metapopulation: recovery of the tule elk in California. Pp. 375–403 in Metapopulations and wildlife conservation (D. R. McCullough, ed.). Island Press, Covelo, California.

Meredith, E. P., J. A. Rodzen, K. F. Levine, and J. D. Banks. 2005. Characterization of an additional 14 microsatellite loci in California Elk (*Cervus elaphus*) for use in forensic and population applications. Conservation Genetics 6:151–153.

Merriam, C. H. 1905. A new elk from California, *Cervus nannodes*. Proceedings from the Biological Society (Washington) 18:23–25.

Moritz, C. 1994. Defining ''evolutionarily significant units'' for conservation. Trends in Ecology and Evolution 9:373–375.

Moritz, C. 2002. Strategies to protect biological diversity and the processes that sustain it. Systematic Biology 51:238–254.

Nei, M. 1972. Genetic distance between populations. American Naturalist 106:283–292.

O'Gara, B. W. 2002. Taxonomy. Pp. 3–67 in Elk of North America: ecology and management (D. Toweill and J. Thomas, eds.). Smithsonian Institution Press, Washington, D.C.

Polziehn, R. O., J. Hamr, F. F. Mallory, and C. Strobeck. 1998. Phylogenetic analysis of North American wapiti (*Cervus elaphus*) subspecies. Canadian Journal of Zoology 76:998–1010.

Polziehn, R. O., J. Hamr, F. F. Mallory, and C. Strobeck. 2000. Microsatellite analysis of North American wapiti (*Cervus elaphus*) populations. Molecular Ecology 9:1561–1576.

Polziehn, R. O., and C. Strobeck. 1998. Phylogeny of wapiti, red deer, sika deer, and other North American cervids as determined from mitochondrial DNA. Molecular Phylogenetics and Evolution 10:249–258.

Polziehn, R. O., and C. Strobeck. 2002. A phylogenetic comparison of red deer and wapiti using mitochondrial DNA. Molecular Phylogenetics and Evolution 22:342–356.

Pritchard, J. K., M. Stephens, and P. Donnelly. 2000. Inference of population structure from multilocus genotype data. Genetics 155:945–959.

Raymond, M., and F. Rousset. 1995. GENEPOP (version 1.2): population genetics software for exact tests and ecumenicism. Journal of Heredity 86:248–249.

Reneau, J., and S. C. Reneau. 1993. Records of North American big game. Boone and Crockett Club, Missoula, Montana.

Schneider, S., D. Roessli, and L. Excoffier. 2000. Arlequin version 2.000: a software for population genetics data analysis. Genetics and Biometry Laboratory, University of Geneva, Geneva, Switzerland.

Waples, R. S. 1991. Pacific salmon, *Oncorynchus* spp., and the definition of ''species'' under the endangered species act. Marine Fisheries Review 53:11–22.

Weir, B. S., and C. C. Cockerham. 1984. Estimating *F*-statistics for the analysis of population structure. Evolution 38:1358–1370.

Williams, C. L., B. Lundrigan, and O. E. Rhodes. 2004. Microsatellite variation in tule elk. Journal of Wildlife Management 68:109–119.

Williams, C. L., T. L. Serfass, R. Cogan, and O. E. Rhodes. 2002. Microsatellite variation in the reintroduced Pennsylvania elk herd. Molecular Ecology 11:1299–1310.

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Keeping Northwest California wild since 1977

Sent via email on date shown below

April 4, 2019

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Dear Commissioners, Director Bonham, and Chief Lewis,

On behalf of the Environmental Protection Information Center and the Friends of Del Norte (collectively "EPIC"), please accept these comments on the Draft Supplement Environmental Document for the North Coast Elk Management Unit ("SEIR"). After carefully reviewing the document and tiered associated documents, EPIC believes that the SEIR fails to take a hard look at the environmental consequences of increasing elk tags, and as such, the Commission should reject proposed changes to hunting tags and the Department should return to the Commission with a revised SEIR that adequately considers points raised in this letter.

SEIR Fails to Examine Reasonable Range of Alternatives

The SEIR fails to analyze a reasonable range of alternatives by only considering maintaining the current level of hunting or increasing the total amount of hunting. In this manner, the SEIR is lacking and needs to be amended to consider a true range of alternatives—including alternatives that *reduce* the total amount of elk tags offered.

"CEQA requires that an EIR, in addition to analyzing the environmental effects of a proposed project, also consider and analyze project alternatives that would reduce adverse environmental impacts." *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings*, 43 Cal.4th 1143, 1163 (2008); *see also* Guidelines, § 15126.6, subd. (a).) "An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.'" *Watsonville Pilots Assn. v. City of Watsonville,*183 Cal.App.4th 1059, 1086 (2010) (internal citation omitted.) In evaluating whether a decisionmaking is capable of making an informed decision, courts will often examine whether the alternatives presented "represent enough of a variation to allow informed decisionmaking." *Mann v. Cmty. Redevelopment Agency*, 233 Cal.App.3d 1143, 1151 (1991).

The Supplemental EIR fails to present a reasonable range of alternative by only examining whether alternatives that *increase* elk hunting, either by a little or a lot. Unconsidered by the SEIR is whether elk hunting should *decrease*—a reasonable suggestion, given changes to forage from global climate change, recovering gray wolf populations in the state, and the obligations of the Department and Commission.

The Department makes no explanation of why it did not consider a reduction in elk hunting. Presumably, the reason is similar to why the Department rejected Alternative 3, which would increase hunting tags by 10 tags: the alternative would "not optimize public hunting opportunities or alleviation of conflicts on private property." The Commission, however, has no obligation to issue the maximum number of hunting tags or to "optimize" hunting opportunities. As the Department admits, the Legislature has given the Commission substantial power to consider a wide range of considerations, including "populations, habitat, food supplies, the welfare of individual animals, and other pertinent facts," when setting tag numbers. The Commission *must* consider non-hunting recreational opportunities associated with elk and balance consumptive versus non-consumptive uses.

The Supplemental EIR examines four potential alternatives, including the "No Project" alternative. The Proposed Project would "[i]ncrease the tag quota range for the Northwestern Elk Zone by 20 tags," SEIR at 6, for a total of 108 elk tags issued. *Id*. at 19. Alternative 1, or the "No Project" alternative, would result in "[n]o change from the 2018-19 hunting regulations," *id.*, or stated another way, Alternative 1 would authorize the issuance of 88 elk tags. Alternative 2 would "[i]ncrease the tag quota range for the Northwestern Elk Zone by up to 60 tags." *Id.*. Alternative 3 would also increase the number of elk tags issued by 10 tags. *Id*. In short, all the action alternatives analyzed only consider additional hunting.

In this manner, the alternatives analysis is comparable to the seminal case *California v. Block,* 690 F.2d 753 (9th Cir. 1982), which examined alternatives analysis under the substantially similar National Environmental Policy Act. In *Block*, the Forest Service was tasked with considering future potential additional Wilderness Areas. In doing so, the Forest Service

analyzed eleven alternatives—which is, by NEPA and CEQA standards, a large number of alternatives—but the Forest Service never examined any alternative that designated more than 33 percent of inventoried roadless areas to Wilderness. The Ninth Circuit found that the Forest Service's analysis failed to provide a reasonable range of alternatives. As the court found important, the Forest Service was forced to weigh competing values—more wilderness or less—but in drawing a line at 33% and by not considering alternatives that considered *additional* acres of Wilderness, the Forest Service failed to examine information necessary to form a "reasoned choice." This "trade off," the court reasoned, "cannot be intelligently made without examining whether it can be softened or eliminated by increasing resource extraction and use from already developed areas." Further, the court noted that "[w]hile nothing in NEPA prohibits the Forest Service" from adopting an alternative that added less Wilderness and not more, it was nevertheless "troubling that the Forest Service saw fit to consider from the outset only those alternatives leading to that end result."

Here, the Commission cannot make a "reasoned choice" because it was only given alternatives that examined additional hunting. It never considered how less hunting impacts herd populations, non-lethal recreational opportunities, animal welfare, or the myriad of other things that the Commission is charged with considering. In the same manner, the Department's analysis appears to predetermine a set outcome—more hunting—instead of grappling the hard trade offs that must be made.

Hunting Places Reproductively Stressful Pressures on Populations when Paired with Predation

Hunting, together with predation, can affect herd population dynamics. Wolves have returned to California, although not to the Northwest EMU yet. That said, it is a matter of time before wolves return to the area. For example, the first wolf in approximately 100 years traveled through Del Norte County in 2019.

Wright et al. 2006 show that in a survey of antlerless elk, a large majority of the elk taken were considered to be at a "reproductively prime age." That is, between the ages of 2-9 years. Wright then goes on to show that in the study, the combined influence of hunters taking out median ages, and predators taking out individuals at either extreme, herd numbers and viability began to decline. Please consider Wright, G. J., Peterson, R. O., Smith, D. W., & Lemke, T. O. (2006). Selection of Northern Yellowstone Elk by Gray Wolves and Hunters. Journal of Wildlife Management, 70(4), 1070-1078 in your final Supplemental EIR.

As reported by Hebblewhite (2005), wolf presence together with inclement weather (associated with a changing climate) produced more dramatic decreases in elk population growth rate than just inclement weather alone. *See* Hebblewhite, M. 2005. Predation by wolves interacts with the North Pacific Oscillation (NPO) on a western North American elk population. Journal of Animal Ecology 74:226-233. Further, changing weather can increase wolf predation rates. EPIC and the Department admit uncertainty over how these stressors will impact elk populations in real life. But it is this uncertainty that counsels that more analysis, through a larger range of alternatives, is more necessary to inform decisionmaking.

The SEIR Fails to Appreciate Risk from Vehicle Strikes

The Supplement EIR's discussion on impacts from vehicle strikes is short and conclusory. It read, in total:

> The number of elk killed by vehicles is not well documented. Unlike deer, very few elk in California appear to be killed by automobiles each year. Vehicle-caused elk mortalities have been reported (specifically with Roosevelt elk in Del Norte and Humboldt counties and tule elk in the Owens Valley and at Cache Creek) since 1990. Unreported incidents cannot be quantified. However, the [Department] believes effects of vehicle-caused mortality on statewide and localized elk populations are minimal.

The Department does not appear to be aware that increased vehicle strikes, perhaps together with increased poaching, likely caused the extirpation of an important herd of Roosevelt Elk. The Boyes elk were first documented in Boyes Meadows in 1937. By the late 1940s, their population ballooned to around 100, taking advantage of the newfound forage to jump in size. Over time the population settled; between 1950 to the late 1990s, the population fluctuated between 20-60 individuals. In 1998, there were 30 elk. By 2011, the herd was extirpated.

In 1984, Caltrans began planning for a bypass around the old-growth of the park—today, we call the original road the "Newton B. Drury Bypass." This "improvement" came at a cost. The new road opened in 1992. Construction of the road created meadows and clearings, which were soon utilized by elk. Increased road kill soon followed. In places, the road is quite steep. Cars heading downhill (southbound) may find it difficult to stop or evade elk in the roadway. Similarly, elk may find avoiding humans more difficult. In 2003, Caltrans installed a barrier to separate north and southbound lanes. The barrier, intended to keep cars from cross lanes, was also likely effective in limiting elk mobility, making attempts by elk to evade or avoid vehicles more difficult. Elk and other ungulates have a difficulty assessing vehicle speeds and distance, perhaps making last minute maneuvers, and things that inhibit that flight response, more important. Furthermore, these elk were habituated to humans, and the elk may have had difficulty determining which vehicles detected them and wanted to slow to observe and which vehicles did not detect them or wanted to poach them.

Del Norte County provided records within their letter to the Department containing additional instances of elk strikes known to the county. Please consider these accounts and attempt a more meaningful investigation of potential impacts instead of relying on conclusory statements.

The Supplemental EIR Likely Downplays Impact of Poaching

The Supplemental EIR appears to downplay the real danger that poaching plays on local elk populations in finding that poaching will not have significant adverse cumulative effects. To support this conclusion, the Supplement looks to, among other things, citation data from 1997, 1998, 2000 and 2001.

Since 2017, there have been six reported cases of poaching in the Northwestern EMU, including one pregnant elk:

- https://lostcoastoutpost.com/2017/feb/8/dismembered-elk-found-redwood-national-park-ranger/
- https://lostcoastoutpost.com/2018/dec/14/four-roosevelt-elk-one-pregnant-killed-near-blue-l/
- https://lostcoastoutpost.com/2018/nov/1/elk-illegally-shot-death-arrows-north-orick-park-r/

It is strange that EPIC, through a simple Google search, is able to turn up more recent data than the Department.

EPIC agrees with the Department that "[i]llegal harvest of game mammals is difficult to quantify." As one article mentions, there had appeared to be an attempt to hide evidence of poaching. As most wildlife experts agree, most cases of poaching are not discovered and only one to five percent of poachers are caught. The Department, however, does not appear to be interested and dismisses poaching impacts by concluding, without evidence, that poaching is unlikely to have a significant cumulative effect.

The Supplemental EIR is Contingent on the "Elk Pop" Model, Yet the Model Appears Flawed and Lacks Indicia of Scientific Integrity

EPIC is concerned about the Department's reliance on the "Elk Pop" model, Smith, D. and D. Updike. 1987. Elk Pop, unpublished computer population simulation model. Department of Fish and Game, 1416 Ninth Street, Sacramento, California 95814. According to the Supplement, the model was produced by the Department and was released in 1987.

EPIC is concerned with the Department's reliance on a model completed by itself over three decades ago used to justify the Department's own decision. Additionally, there are other factors that call into question the reliability and integrity of the Elk Pop Model. Based on EPIC's review of multiple scientific databases, it appears that the Elk Pop model was: (1) never been peer reviewed; (2) never validated by on-the-ground counts, or if validated, the data been made available. Given these issues, it is not sound for the Department to be reliant on the Elk Pop model.

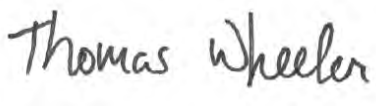
Model results published in the appendix to the Supplement shows the number of elk killed by "non-hunting causes." Presumably, this accounts for all other potential causes of mortality, such as vehicle strikes, poaching, starvation, predation, etc. The model assumes a rate of 23.5% of bulls lost to non-hunting causes and 11.9% of cows. It is not clear where these numbers come from. Again, a lack of validation concerns EPIC. Furthermore, we are concerned that the Department treats these numbers as static, despite a changing world. Assuming that the Department arrived at these mortality rates from observation in 1987, these represent a snapshot of conditions in that year. As the Supplement acknowledges, elk face a variety of population stressors, but that these stressors change from year to year, whether it is drought or poaching. Furthermore, as discussed above, climate change and new predators might increase the non-hunting mortality rate above historic levels.

Conclusion: The Commission Should Reject the Draft SEIR as Incomplete and Request Revision from the Department

Based on the concerns outlined above, EPIC requests that the Commission reject the Draft SEIR as incomplete and ask for revisions to ensure that the Commission can take a hard look at the likely environmental impacts of the proposed actions.

Should the Department or the Commission have questions regarding this letter, please do not hesitate to contact our organizations at tom@wildcalifornia.org or (707) 822-7711.

Sincerely,



Thomas Wheeler, Executive Director
Environmental Protection Information Center

STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION

Amend Section 708.6
Title 14, California Code of Regulations
Re: Tag Countersigning and Transporting Requirements

I. Date of Initial Statement of Reasons: November 15, 2018

II. Dates and Locations of Scheduled Hearings

(a) Notice Hearing: Date: December 13, 2018
Location: Oceanside, CA

(b) Discussion Hearing: Date: February 6, 2019
Location: Sacramento, CA

(c) Adoption Hearing: Date: April 17, 2019
Location: Santa Monica, CA

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

Critical to the management of California's game populations is the countersigning of deer and elk tags indicating that the animal has been legally taken and transported from the hunting area. Countersigning is done by an authorized person who physically signs their name to the tag attached to the deer or elk carcass. In subsection 708.6(c) it is necessary to clarify for the public and law enforcement that "firefighters employed on a full-time basis" are authorized to countersign, in addition to the other authorized persons listed in 708.6. Part time, volunteer, or other fire station personnel are not included and cannot countersign the tag.

The terms "validate" and "countersign" are currently used interchangeably throughout this section. Countersigning deer and elk tags involves having a designated person physically sign their name to the actual tag attached to the deer or elk carcass. The statute in 4341 FGC specifies that:

> *"Any person legally killing a deer in this state shall have the tag countersigned by ... a person designated for this purpose".*

Section 708.11, Title 14, CCR, specifies that

> "... *Elk tags shall be countersigned before transporting such elk, except for the purpose of taking it to the nearest person authorized to countersign the license tag...."*

Deer and Elk License Tags also specify, respectively, that

"Hunter must have tag countersigned" and *"Elk tags must be countersigned"*

For this reason, the proposed amendments clarify that "countersign (-ed, -ing, etc.)" is the required action, and removes text references to "validate (-ed, -tion, etc.)". Other minor edits and renumbering are also proposed.

Deer and elk hunting is a highly regulated activity by both statute and regulation. It serves the public to have control over the number of game tags authorized for hunters in certain zones and, once game are taken by hunters, to have them properly accounted for. The first tool wildlife managers use to account for game harvest is the countersign requirement per subsection 708.6(b). Wildlife officers who frequently conduct poaching investigations and need to differentiate between a poached and legally taken deer or elk will check for the proper use of tags. Poached game is rarely properly tagged and countersigned, so it can be an excellent piece of evidence during a poaching investigation. If the tag is countersigned by an authorized person, it can also be a vital piece of evidence in an investigation because there is a named potential witness to the poaching event.

The data collected by hunters and submitted via mandatory reporting, including having those tags, is critical to managing deer and elk populations year-to-year and contributes to the continued availability of deer and elk hunting opportunities.

The Department recognizes the challenge for a person who returns from a successful hunting trip and needs the tag countersigned and must take the game to the nearest person authorized to countersign the license tag on the route followed from the point where the game was taken. Section 708.6 provides a list of persons authorized to validate deer and elk tags. Those classifications of employees of various governmental and non-governmental employers presumes some form of accountability since the authorization is granted as a condition of their employment. There is a presumption that the employees will exercise that authority in accordance with regulation.

Under existing regulation, a certain classification of firefighter is authorized to countersign tags. Section 708.6(c)(1)(C)1. describes them as "County Firemen at and above the class of foreman". Outside of Department of Fish and Wildlife employees and offices, fire stations are the most commonly known places for hunters to have game tags countersigned. For that reason, all California Department of Forestry and Fire Protection (CALFIRE) employees, regardless of rank or job duties, are authorized to validate tags.

Since this regulation was adopted (2011) there has been a long standing assumption by the public that all firefighters can countersign game tags regardless of rank, or whether they work for a county, city, or district. Unfortunately, current regulation does not authorize non-county firefighters to validate tags.

Proposed Amendments to Regulation

- Subsections (a), and (c). The proposed amendments clarify that the authorized persons “countersign” as the required action. Reference to “validation” of the tags is removed. While the terms have been used interchangeably, the Fish and Game Code 4341 (deer) and Section 708.11, Title 14, CCR, (elk) and the license tags themselves all require that the tag be “countersigned”.

- Subsection (b) is deleted and rewritten as (d).

- Subsection (c) is deleted since it is repetitive of the next subsection (c)(1).

- Subsection (c)(1) is renumbered (c).

- Subsections (c)(1)(A), (B), and (C) are renumbered (c)(1), (2), and (3), with minor editorial changes. In (c)(3) the department acronym CALFIRE is added for clarity.

- Subsections (c)(1)(a)4. and 5. the outdated state job titles of Plant Quarantine Inspectors are deleted and replaced with (c)(1)(D) and the current job titles.

- Subsection (c)(1)(C)1. is deleted and changed to (c)(3)(A) adding “Firefighters employed on a full-time basis, only when the deer or elk carcass is brought to their fire station.”

- Subsection (d) is added.

- Authority and Reference. Deletes repealed or unnecessary sections, the remaining sections are more closely related to FGC authority; and making specific those provisions related to the subject of regulating deer and elk tags.

Department Recommendation

The Department believes it is reasonable to expand the category of firefighter that can countersign game tags by amending the subsection to describe them as “firefighters employed on a full-time basis”. Describing them as firefighters updates the outdated use of the term “firemen” and expands the classification of ranks to include all firefighters employed on a full-time basis. It continues to exclude volunteer firefighters who may not have the same level of accountability as full-time firefighters which is consistent with current regulation. It maintains existing regulatory requirements that the authority be granted only to deer and elk brought to a fire station.

Wildlife managers and law enforcement officers from the Department believe expanding the authority to countersign tags to include all firefighters will make it easier for the public to follow the law and increase the number of reliable witnesses in the event of an investigation of poaching.

(b) Goals and Benefits of the Regulation:

Wildlife managers and law enforcement officers from the Department believe expanding the authority to countersign tags to include all firefighters will make it easier for the public to follow the law and increase the number of reliable witnesses in the event of an investigation of poaching.

(c) Authority and Reference Sections from Fish and Game Code for Regulation:
Note: Authority cited: Sections 200, 203, 332, and 4331, Fish and Game Code.
Reference: Sections 332, 4302, 4330, 4333, 4336, 4340, and 4341, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change: None.

(e) Identification of Reports or Documents Supporting Regulation Change:

A regulation change petition was submitted to the California Fish and Game Commission in October of 2016 – labeled 2016-028. The author of the petition, Sean Campbell, a firefighter who had been countersigning tags for 30 years, stopped providing this public service because there was confusion over the term "foreman". Members of his fire department wanted to stay in strict compliance with the regulation and the petition was submitted to the Commission requesting clarification.

(f) Public Discussions of Proposed Regulations Prior to Notice Publication:

The regulation change proposal was reviewed by the Wildlife Resources Committee on September 20, 2018 and garnered no public opposition.

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change: None.

(b) No Change Alternative:

The regulation would remain the same authorizing county firemen to countersign but excluding other firefighters, which has caused problems with the public who assume their local fire department can perform this task.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no adverse impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made.

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed action expands the list of authorized firefighters able to perform a service for the public.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The proposed regulation will not result in the creation or elimination of jobs within the state, cause the creation of new businesses or the elimination of existing businesses or result in the expansion of businesses in California, because it only expands the list of authorized firefighters able to perform a service for the public.

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources, these provisions provide other opportunities for the public to comply with the regulation of hunting.

(c) Cost Impacts on Representative Private Persons/Business:

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:

The proposed action will have no statewide economic or fiscal impact because the proposed action would implement a Departmental administrative process to increase efficiency that will only affect the work tasks of Department and Commission staff.

(e) Other Nondiscretionary Costs/Savings to Local Agencies: No nondiscretionary costs are passed on to local agencies (city, district, or county fire departments) since the authorized action of countersigning the deer or elk tag is entirely discretionary to the local firefighter and department. No costs have been associated with the occasional public request to have a tag countersigned by the listed public officials.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment:

The proposed action will have no statewide economic or fiscal impact because the proposed action would implement a Departmental administrative process to increase efficiency that will only affect the work tasks of Department and Commission staff. The proposed alternative process to set big game tag quotas would reduce the annual regulatory workload, and permit both the Commission and the Department to devote staff resources to achieve other core missions.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because the proposed action does not change the level of hunting activity in California.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not promote the creation of new businesses or the elimination of businesses within the State because the proposed action does not change the level of hunting activity in California.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State:

The regulation will not affect the expansion of businesses currently doing business in the State because the proposed action does not change the level of hunting activity in California.

(d) Benefits of the regulation to the health and welfare of California residents:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources.

(e) Benefits of the regulation to worker safety:

The proposed regulation would not affect worker safety.

(f) Benefits of the regulation to the State's environment:

It is the policy of the State to encourage the conservation, maintenance, and utilization of the living resources. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources, these provisions provide other opportunities for the public to comply with the regulation of hunting.

Informative Digest/Policy Statement Overview

Critical to the management of California's game populations is the countersigning requirement of deer and elk tags by an authorized person who physically signs their name to the tag attached to the deer or elk carcass. In subsection 708.6(c), Title 14, CCR, Deer and Elk Tags, Persons Authorized to Validate, it is necessary to clarify for the public and law enforcement that "firefighters employed on a full-time basis" are authorized to countersign, an addition to the other authorized persons found in 708.6(c). Part time, volunteer, or other fire station personnel are not included and cannot sign the tag. The added text maintains the existing regulatory requirement that the countersigning may be done only for deer and elk brought to a fire station.

Wildlife managers and law enforcement officers from the Department believe expanding the authority to countersign tags to include all firefighters will make it easier for the public to follow the law and increase the number of reliable witnesses in the event of an investigation of poaching.

The amendment also clarifies that the authorized persons "countersign" as the required action; corrects outdated state job titles of Plant Quarantine Inspector; clarifies that the provisions apply both to deer and elk tags; and other minor editorial changes.

Non-monetary Benefits to the Public

The Commission anticipates benefits to the health and welfare of California residents through the sustainable management of mammal populations. The Commission does not anticipate non-monetary benefits to worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources, these provisions provide other opportunities for the public to comply with the regulation of hunting.

Consistency and Compatibility with Existing Regulations

The Commission has reviewed its regulations in Title 14, CCR, and conducted a search of other regulations on this topic and has concluded that the proposed amendments to Section 708.6 are neither inconsistent nor incompatible with existing State regulations. No other State agency has the authority to promulgate hunting regulations.

Proposed Regulatory Language

Section 708.6 is amended to read:

§ 708.6. Tag ~~Validation,~~ Countersigning and Transporting Requirements.

(a) Any person legally killing a deer in this state shall have the deer license tag ~~validated and~~ countersigned by a person authorized by the commission as described ~~below~~ in subsection (c) before transporting such deer, except for the purpose of taking the deer to the nearest person authorized to countersign the license tag, on the route being followed from the point where the deer was taken (refer to Fish and Game Code, Section 4341).

~~(b) No person may validate or countersign his/her own deer tag or tag.~~

(b) Any person legally killing an elk in this state shall have the elk license tag countersigned by a person authorized by the commission as described in subsection (c) before transporting such elk, except for the purpose of taking the elk to the nearest person authorized to countersign the license tag, on the route being followed from the point where the elk was taken.

~~(c) Deer and Elk Tags, Persons Authorized to Validate Countersign.~~

~~(1)~~ (c) The following persons are authorized to ~~validate or~~ countersign deer and elk tags:

~~(A)~~ (1) State:

~~1.~~ (A) Fish and Game Commissioners

~~2.~~ (B) Employees of the Department of Fish and ~~Game~~ Wildlife, including Certified Hunter Education Instructors

~~3.~~ (C) Employees of the California Department of Forestry and Fire Protection (CAL FIRE)

~~4. Supervising Plant Quarantine Inspectors~~

~~5. Junior, Intermediate and Senior Plant Quarantine Inspectors~~

(D) Plant Quarantine Inspector, Supervisor I, and Supervisor II

~~(B)~~ (2) Federal:

~~1.~~ (A) Employees of the Bureau of Land Management

~~2.~~ (B) Employees of the United States Fish & Wildlife Service

~~3.~~ (C) All Uniformed Personnel of the National Park Service

~~4.~~ (D) Commanding Officers of any United States military installation or their designated personnel for deer or elk taken on their reservation.

~~5.~~ (E) Postmasters & Post Office Station or Branch Manager for deer or elk brought to their post office.

~~(C)~~ (3) Miscellaneous:

~~1. County firemen at and above the class of foreman for deer brought into their station.~~

(A) Firefighters employed on a full-time basis, only when the deer or elk carcass is brought to their fire station.

~~2.~~ (B) Judges or Justices of all state and United States courts.

~~3.~~ (C) Notaries Public

~~4.~~ (D) Peace Officers (salaried & non-salaried)

~~5.~~ (E) Officers authorized to administer oaths

~~6.~~ (F) Owners, corporate officers, managers or operators of lockers or cold storage plants for deer or elk brought to their place of business.

(d) No person may countersign his/her own deer tag or elk tag.

Note: Authority cited: Sections 200, ~~202,~~ 203, ~~215, 219, 220,~~ 332, ~~1050, 1572, 4302,~~ and 4331, ~~4336, 4340, 4341 and 10502,~~ Fish and Game Code. Reference: Sections ~~200, 201, 202, 203, 203.1, 207, 210, 215, 219, 220,~~ 332, ~~1050, 1570, 1571, 1572, 3950,~~ 4302, 4330, ~~4331, 4332,~~ 4333, 4336, 4340, and 4341, ~~10500 and 10502,~~ Fish and Game Code.

STATE OF CALIFORNIA
Gavin Newsom, Governor

Fish and Game Commission

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Wildlife Heritage and Conservation
Since 1870

March 22, 2019

TO ALL INTERESTED AND AFFECTED PARTIES

This is to provide notice that the proposed regulatory actions relative to "Mammal Hunting Regulations" in section 362, 364, 364.1 and 708.6, identified in Title 14, California Code of Regulations, which appeared in the California Regulatory Notice Register on January 11, 2019, may be continued to the Commission's teleconference meeting on May 16, 2019.

The purpose of the continuation is to allow for additional public review of associated California Environmental Quality Act (CEQA) documents for bighorn sheep and elk (SCH #s 2018112036 and 2018112037) as filed with the State Clearinghouse on February 19, 2019. Please note that information in the original notice remain the same, including regulatory text, associated documents and noticed dates of the public hearings related to this matter.

At the Commission's April 17, 2019 meeting in Santa Monica, staff will recommend continuing public review of the CEQA documents for bighorn sheep and elk.

NOTICE IS NOW GIVEN that, if the staff recommendation to continue public review of the CEQA documents for bighorn sheep and elk is approved, any person interested may present statements, orally or in writing, relevant to the proposed regulatory actions at the Commission's teleconference hearing on Thursday, May 16, 2019, at 8:00 a.m., or as soon thereafter as the matter may be heard, in the Commission's conference room, 1416 Ninth Street, Room 1320, Sacramento, California or at one of three California Department of Fish and Wildlife (CDFW) offices: Arcata Field Office, 5341 Ericson Way, Arcata, CA 95521, CDFW Fairfield Regional Office, 2825 Cordelia Road, Suite 100, Fairfield, CA 94534, and CDFW San Diego Regional Office, 3883 Ruffin Road, San Diego, CA 92123.

Written comments are requested before the April 17, 2019 meeting; however, to be considered during preparation of the adoption hearing materials, comments should be submitted no later than May 3, 2019, at the address given below, or by email to FGC@fgc.ca.gov. Any written comments mailed or emailed to the Commission office must be received before 12:00 noon on May 10, 2019 after which any comments must be received at the May 16, 2019 teleconference hearing. If you would like copies of any modifications to this proposal, please include your name and mailing address in your correspondence. Mailed comments should be addressed to California Fish and Game Commission, PO Box 944209, Sacramento, CA 94244-2090.

Sincerely,

Jon D. Snellstrom
Associate Government Program Analyst

STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR PROPOSED REGULATORY ACTION

Amend Section 509
Title 14, California Code of Regulations
Re: Concurrence with Federal Regulations

I. Date of Initial Statement of Reasons: October 30, 2018

II. Dates and Locations of Scheduled Hearings

(a)	Notice Hearing:	Date:	December 13, 2018
		Location:	Oceanside, CA
(b)	Discussion Hearing: (If necessary)	Date:	February 6, 2019
		Location:	Sacramento, CA
(c)	Adoption Hearing:	Date:	April 17, 2019
		Location:	Santa Monica, CA

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

Current regulations in Section 509, Title 14, California Code of Regulations (CCR), incorporate requirements found in Federal regulations, including requirement that hunters must possess a Federal migratory-bird hunting and conservation stamp for the taking of migratory birds. The U.S. Fish and Wildlife Service (Service) has begun issuing an electronic stamp, or E-stamp. To be consistent with Federal regulations and allow the Department to issue electronic Federal migratory-bird hunting and conservation stamps in the future, amendments to the text of Section 509 are necessary.

The proposed change is:

Amend the language in Section 509(c) to include "…or an unexpired Federal migratory-bird hunting and conservation electronic stamp issued in his or her name…".

(b) Goals and Benefits of the Regulation:

The benefits of the proposed administrative change are concurrence with Federal

law. The regulations provide for the conservation and maintenance of sufficient waterfowl populations to ensure their continued existence.

(c) Authority and Reference Sections from Fish and Game Code for Regulation

Authority: Section 355, Fish and Game Code.
Reference: Sections 355 and 356, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change: None.

(e) Identification of Reports or Documents Supporting Regulation Change: None.

(f) Public Discussions of Proposed Regulations Prior to Notice Publication: No public meetings are being held prior to the notice publication.

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change:

No other alternatives were identified.

(b) No Change Alternative:

The No Change Alternative would maintain the existing language that refers only to possession of a physical Federal migratory-bird hunting and conservation stamp and not of the E-stamp which is equally sufficient for proof of possession.

(c) Description of Reasonable Alternatives That Would Lessen Adverse Impact on Small Business: None.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, the Competitive Advantages or Disadvantages for Businesses Currently Doing Business Within the State; the Increase or Decrease of Investment in the State; the Incentives for Innovation in Products, Materials, or Processes; Benefits of the Regulation to the Health, Safety and Welfare of California Residents, Worker Safety, and the State's Environment and Quality of Life:

The Commission does not anticipate any impacts on: the creation or elimination of jobs, the creation of new business or the elimination of existing businesses or the expansion of businesses in California, a decrease or increase in investment in California, incentives for innovation, benefits related to the regulation of health, safety and welfare of California residents, worker safety, and the State's environment because the proposed action is an administrative action to facilitate the recognition of the electronic Federal migratory-bird hunting and conservation stamp issued for hunting migratory game birds in California. If this administrative action increases transaction costs for hunters, minor negative impacts to jobs and/or businesses that provide services to waterfowl hunters may result from the proposed regulations.

(c) Cost Impacts on a Representative Private Person or Business:

The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(e) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.

(e) Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment:

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State:

Little to minor positive impacts on the creation of jobs within businesses that provide services to waterfowl hunters may result from amending state regulations to concur with Federal regulations for the 2019-20 season. The most recent U.S. Fish and Wildlife national survey of fishing, hunting, and wildlife associated recreation for California (revised 2011), estimated that waterfowl hunters contributed about $169,115,000 to small businesses in California during the 2011 waterfowl hunting season. The impacted businesses are generally small businesses employing few individuals and, like all small businesses, are subject to failure for a variety of causes. The 2011 report is posted on the U.S. Department of Commerce website at https://wsfrprograms.fws.gov/Subpages/NationalSurvey/2011_Survey.htm. A 2016 report is available, however data was not collected at the state level. The long-term intent of the proposed regulation is to allow hunters to obtain an electronic Federal migratory-bird hunting and conservation stamp in place of a physical federal stamp, which minimizes confusion with the hunting public and ensures compliance with state and federal regulations.

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State:

The proposed regulation is not anticipated to prompt the creation of new businesses or the elimination of existing businesses within the state. Minor variations in regulations pertaining to hunting are, by themselves, unlikely to stimulate the creation of new businesses or cause the elimination of existing businesses. The number of hunting trips and the economic contributions from the trips are not expected to change substantially.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State:

The proposed regulation is unlikely to stimulate substantial expansion of businesses currently doing business in the state. The long-term intent of the proposed regulation is to allow hunters to obtain an electronic Federal migratory-bird hunting and conservation stamp in place of a physical stamp, which minimizes confusion with the hunting public and ensures compliance with state and Federal regulations.

(d) Benefits of the Regulation to the Health and Welfare of California Residents:

The regulation itself does not have direct benefits as it is an administrative change. However, hunting is an outdoor activity that can provide several health and welfare benefits to California residents. Hunters and their families benefit from fresh game to eat, and from the benefits of outdoor recreation including exercise. People who hunt

have a special connection with the outdoors and an awareness of the relationships between wildlife, habitat, and humans. With that awareness comes an understanding of the role humans play in being caretakers of the environment. Hunting is a tradition that is often passed from one generation to the next creating a special bond between family members and friends.

(e) Benefits of the Regulation to Worker Safety:

The regulations will not affect worker safety because they do not address working conditions.

(f) Benefits of the Regulation to the State's Environment:

As set forth in Fish and Game Code section 1700, it is the policy of the state to encourage the conservation, maintenance, and utilization of waterfowl resources for the benefit of all the citizens of the state. The objectives of this policy include, but are not limited to, the maintenance of sufficient populations of waterfowl to ensure their continued existence and the maintenance of a sufficient resource to support recreational opportunity. Modifying state regulations to comply with federal regulations minimizes confusion and ensures compliance. Additionally, the fees that hunters pay for licenses and stamps fund wildlife conservation.

Informative Digest/Policy Statement Overview

Current regulations in Section 509, Title 14, California Code of Regulations (CCR), incorporate requirements found in Federal regulations, including a requirement that hunters must possess a Federal migratory-bird hunting and conservation stamp for the taking of migratory birds. The U.S. Fish and Wildlife Service (Service) has begun issuing an electronic stamp, or E-stamp. To be consistent with Federal regulations and allow the Department to issue electronic Federal migratory-bird hunting and conservation stamps in the future, amendments to the text of Section 509 are necessary.

The proposed change is:

Amend the language in Section 509(c) to include "…or an unexpired Federal migratory-bird hunting and conservation electronic stamp issued in his or her name…".

Benefits of the regulations

The benefits of the proposed regulations are consistency with federal law and the sustainable management of the State's waterfowl resources.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity, and the increase in openness and transparency in business and government.

Evaluation of incompatibility with existing regulations

The Commission has reviewed its regulations in Title 14, CCR, and conducted a search of other regulations on this topic and has concluded that the proposed amendments to Section 509 are neither inconsistent nor incompatible with existing State regulations. No other State agency has the authority to promulgate waterfowl hunting regulations.

Proposed Regulatory Text

Section 509, Title 14, California Code of Regulations, is amended to read:

§ 509. Concurrence with Federal Regulations.

(a) The regulations adopted by the United States through its Secretary of Interior under the Migratory Bird Treaty Act, as amended annually in Part 10, subparts A and B, and Part 20, Title 50, Code of Federal Regulations, are hereby adopted and made a part of this Title 14 except where said federal regulations are less restrictive than the provisions of Chapter 7 of this Title 14 (sections 500-509), the provisions of Chapter 7 prevail.

(b) Any violations of the regulations adopted pursuant to subsection (a) are violations of this section.

(c) It shall be unlawful for any person aged sixteen years or older to take any migratory waterfowl unless at the time of such taking the person carries in his or her immediate possession an unexpired Federal migratory-bird hunting and conservation stamp validated by his or her signature written by him or herself in ink across the face of the stamp or an unexpired Federal migratory-bird hunting and conservation electronic stamp, issued in his or her name prior to any taking of such birds.

Note: Authority cited: Section 355, Fish and Game Code. Reference: Part 10, subparts A and B, and Part 20, Title 50, CFR, amended Sept. 18, 1987, 52 Fed. Reg. 35248; 16 USC 718a; and Sections 355 and 356, Fish and Game Code.

STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR PROPOSED REGULATORY ACTION

Amend Section 502
Title 14, California Code of Regulations
Re: Waterfowl, Migratory; American Coot and
Common Moorhen (Common Gallinule)

I. Date of Initial Statement of Reasons: January 4, 2019

II. Dates and Locations of Scheduled Hearings

(a) Notice Hearing: Date: December 13, 2018
Location: Oceanside, CA

(b) Discussion Hearing: Date: February 6, 2019
Location: Sacramento, CA

(c) Adoption Hearing: Date: April 17, 2019
Location: Santa Monica, CA

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

The U.S. Fish and Wildlife Service (Service) annually establishes federal regulation frameworks (Frameworks) for migratory bird hunting. California must set its waterfowl hunting regulations within the Frameworks. The Frameworks describe the earliest dates that waterfowl hunting seasons may open, the maximum number of days hunting can occur, the latest dates that hunting seasons must close, and the maximum daily bag limit. The proposed hunting season Frameworks for a given year are developed in the fall of the prior year, for a majority of species and populations. For example, the breeding populations (including the California Breeding Population Survey) and habitat conditions observed in 2018 and the regulatory alternatives selected for the 2018 hunting season will be used to develop the Frameworks for the 2019-20 season.

States may make recommendations to change the Frameworks. These recommendations are made to flyway councils in August or September. The councils may elect to forward recommendations to the Service. The Service may elect to incorporate proposed changes in the Frameworks. The Service considers these and other recommendations at the Service's Regulation Committee public meeting held in late October. Proposed season Frameworks are typically published by mid-December and final Frameworks published by late February.

Section 355 of the Fish and Game Code authorizes the Fish and Game Commission (Commission) to adopt annual regulations pertaining to the hunting of migratory

birds that conform with, or further restrict, the regulations prescribed by the Service pursuant to its authority under the Migratory Bird Treaty Act. The Commission selects and establishes in State regulations the specific hunting season dates and daily bag limits within the Frameworks.

Current regulations in Section 502, Title 14, California Code of Regulations (CCR), provide definitions, hunting zone descriptions, season opening and closing dates, and daily bag and possession limits. The proposed Frameworks for the 2019-20 season were approved by the flyway councils and were considered for adoption at the Service's Regulations Committee meeting October 16-17, 2018. The proposed Frameworks allow for a liberal duck season which includes a 107 day season, 7 daily duck limit including 7 mallards but only 2 hen mallards, 1 pintail, 2 canvasback, 2 redheads, and 3 scaup (during an 86 day season), closing no later than January 31. Duck daily bag limit ranges and duck season length ranges are provided to allow the Commission flexibility.

A range of season length and bag limit (zero bag limit represents a closed season) is also provided for black brant. The range is necessary, as the black brant Framework cannot be determined until the Pacific Flyway Winter Brant Survey is conducted in January 2019. The regulatory package is determined by the most current Winter Brant Survey, rather than the prior year survey. The regulatory package will be prescribed per the Black Brant Harvest Strategy pending results of the survey, well before the Commission's adoption meeting. See the table in the Informative Digest for the range of season and bag limits.

Lastly, Federal regulations require that California's hunting regulations conform to those of Arizona in the Colorado River Zone and those of Oregon in the North Coast Special Management Area.

The specific recommended regulation changes are:

1) Add Small Canada geese to the Regular Season in subsection 502(d)(1)(B) for the Northeastern California Zone.

   The existing regulation only identifies Large Canada geese during the regular season. Small Canada geese were inadvertently omitted from the regular season when white-fronted goose seasons were modified in prior year rulemakings. Dark geese include both Small and Large Canada geese, and white-fronted geese. Dark geese remained listed under daily bag and possession limits but were removed from the regular season to accommodate the modified white-fronted goose seasons. This recommendation is to clarify the intent of the regulation and to maintain the hunting season for Small Canada geese in the zone.

2) Add Small Canada geese to Season in subsection 502(d)(6)(A)3 for the Klamath Basin Special Management Area.

   See item 1 above for justification. This recommendation is to clarify the intent of the regulation and to maintain the hunting season for Small Canada geese in the special management area.

3) Open the Late Season for white geese two weeks after the close of the Regular Season in subsection 502(d)(6)(A)9 for the Imperial County Special Management Area.

   The existing regulation opens the late season one week after the close of the regular season. The proposed change is intended to allow private landowners to use hunting as a tool to disperse geese and minimize depredation when the greatest concentration of white geese are present.

4) Allow 5 additional days of falconry-only season for the Balance of State Zone in subsection 502(f)(1)(B)2 and allow 2 additional days of falconry-only season for the Southern San Joaquin Valley Zone in subsection 502(f)(1)(B)3.

   The existing regulations do not use all 105 days available in these zones and is intended to provide opportunity to falconers outside of the general hunting season (eliminates conflict with gun season) as discussed between the Department and the California Hawking Club on June 18, 2018. This recommendation maintains a 100-day duck season length.

An alternative requested by Commissioners at the notice hearing:

1) Add up to five days a year to the general duck and goose seasons by closing on January 31 instead of the last Sunday in January, as proposed by California Waterfowl at the December notice hearing. This alternative eliminates the existing and proposed falconry-only seasons.

(b) Goals and Benefits of the Regulation:

The goals and benefits of the regulations are to provide for the conservation and maintenance of sufficient waterfowl populations to ensure their continued existence.

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

(c) Authority and Reference Sections from Fish and Game Code for Regulation

Authority: Sections 202 and 355, Fish and Game Code.
Reference: Sections 202, 355, and 356, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change: None.

(e) Identification of Reports or Documents Supporting Regulation Change: None.

(f) Public Discussions of Proposed Regulations Prior to Notice Publication:

This proposal was discussed at the Commission's Wildlife Resources Committee meeting held on September 20, 2018 and a public scoping session was held on October 18, 2018.

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change:

An alternative was offered by the public to use an additional 5 days (current regulations only use 100 of 105 days allowed in Frameworks) for the general duck and goose seasons in the Balance of State, Southern San Joaquin Valley and Southern California Zones, and close these seasons by closing on January 31 (Friday) rather than on the last Sunday in January, while maintaining the Saturday opener. This option has not been been fully vetted by local county commissions and communities.

Traditionally, most waterfowl opening and closing days occur on the weekend to allow hunting oppotunuities for hunters who work Monday through Friday and hunt on public hunt areas. Closing January 31 for the 2019-20 season uses 5 additional days allowed under the Frameworks. However, this alternative would eliminate the existing and proposed extended falconry season (requested by the California Hawking Club, June 18, 2018) because the season length would exceed what is allowed under the Frameworks. Falconers prefer to have a small number of days dedicated to falconry only to avoid conflicts with general (gun) seasons.

Closing on January 31 while maintaining a Saturday opener for the subsequent four seasons (through 2023-24) requires an annual adjustment to season length for both general and falconry seasons. The option would add between 0 and 5 additional weekdays for the general duck and goose seasons. This change. Making annual adjustments may confuse some hunters who prefer the traditional season ending datelast Sunday in January.

(b) No Change Alternative:

The No Change Alternative would not identify a season, or bag and possession limits for Small Canada geese in the Northeastern Zone.

The No Change Alternative would not identify a season, or bag and possession limits for Small Canada geese in the Klamath Basin Special Management Area.

The No Change Alternative would not open the late white goose season in the Imperial County Special Management Area two weeks after the close of the general season.

The No Change Alternative would not use 5 additional days of falconry-only season for the Balance of State Zone and not allow 2 additional days of falconry-only season for the Southern San Joaquin Valley Zone.

The No Change Alternative would not close on January 31 and not use an additional 5-days allowed under the federal frameworks.

(c) Description of Reasonable Alternatives That Would Lessen Adverse Impact on Small Business: None.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states.

The proposed regulations would provide additional recreational opportunity to the public and could result in minor increases in hunting days and hunter spending on equipment, fuel, food and accommodations.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission does not anticipate any impacts on the creation or elimination of jobs, the creation of new business, the elimination of existing businesses, or the expansion of businesses in California. The proposed waterfowl regulations will set the 2019-20 waterfowl hunting season dates and bag limits within the federal Frameworks. Little to minor positive impacts to jobs and/or businesses that provide services to waterfowl hunters may result from the proposed regulations for the 2019-20 waterfowl hunting season.

The most recent U.S. Fish and Wildlife national survey of fishing, hunting, and wildlife-associated recreation for California, estimated that migratory bird hunters contributed about $169,115,000 to businesses in California during the 2011 migratory bird hunting season. The impacted businesses are generally small businesses employing a few individuals and, like all small businesses, are subject to failure for a variety of causes. Additionally, the long-term intent of the proposed regulations is to sustainably manage waterfowl populations, and consequently, the long-term viability of the same small businesses.

(c) Cost Impacts on a Representative Private Person or Business:

The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.

(e) Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment:

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State:

Little to minor positive impacts on the creation of jobs within businesses that provide services to waterfowl hunters may result from the adoption of the proposed waterfowl hunting regulations for the 2019-20 season. The most recent U.S. Fish and Wildlife national survey of fishing, hunting, and wildlife-associated recreation for California, estimated that waterfowl hunters contributed about $169,115,000 to small businesses in California during the 2011 waterfowl hunting season. The impacted businesses are generally small businesses employing few individuals and, like all small businesses, are subject to failure for a variety of causes. Additionally, the long-term intent of the proposed regulations is to sustainably manage waterfowl populations, and consequently, the long-term viability of the same small businesses. The 2011 report is posted on the U.S. Department of Commerce website https://wsfrprograms.fws.gov/Subpages/NationalSurvey/2011_Survey.htm.

(a) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State:

The proposed regulation is not anticipated to prompt the creation of new businesses or the elimination of existing businesses within the state. Minor variations in regulations pertaining to hunting are, by themselves, unlikely to stimulate the creation of new businesses or cause the elimination of existing businesses. The number of hunting trips and the economic contributions from the trips are not expected to change substantially.

(b) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State:

The proposed minor variations in waterfowl bag limits are, by themselves, unlikely to stimulate substantial expansion of businesses currently doing business in the state. The long-term intent of the proposed regulations is to sustainably manage waterfowl populations, and consequently, the long-term viability of various businesses that serve recreational waterfowl hunters.

(c) Benefits of the Regulation to the Health and Welfare of California Residents:

Hunting is an outdoor activity that can provide several health and welfare benefits to California residents. Hunters and their families benefit from fresh game to eat, and from the benefits of outdoor recreation, including exercise. People who hunt have a special connection with the outdoors and an awareness of the relationships between wildlife, habitat and humans. With that awareness comes an understanding of the role humans play in being caretakers of the environment. Hunting is a tradition that is often passed from one generation to the next, creating a special bond between family members and friends.

(d) Benefits of the Regulation to Worker Safety:

The regulations will not affect worker safety because they do not address working conditions.

(e) Benefits of the Regulation to the State's Environment:

As set forth in Fish and Game Code section 1700, it is the policy of the state to encourage the conservation, maintenance and utilization of waterfowl resources for the benefit of all the citizens of the state. The objectives of this policy include, but are not limited to, the maintenance of sufficient populations of waterfowl to ensure their continued existence and the maintenance of a sufficient resource to support recreational opportunity. Adoption of scientifically-based waterfowl seasons, bag and possession limits provides for the maintenance of sufficient waterfowl populations to ensure those objectives are met. The fees that hunters pay for licenses and stamps fund wildlife conservation.

(e) Other Benefits of the Regulation:

Hunting seasons provide an incentive for private land owners to maintain waterfowl habitat, mainly wetlands, that benefit waterfowl and other wetland dependent wildlife.

Informative Digest/Policy Statement Overview

Current regulations in Section 502, Title 14, California Code of Regulations (CCR), provide definitions, hunting zone descriptions, season opening and closing dates, and daily bag and possession limits. The proposed Frameworks for the 2019-20 season were approved by the flyway councils and were considered for adoption at the Service's Regulations Committee meeting October 16-17, 2018. The proposed Frameworks allow for a liberal duck season which includes a 107 day season, 7 daily duck limit including 7 mallards but only 2 hen mallards, 1 pintail, 2 canvasback, 2 redheads, and 3 scaup (during an 86 day season), closing no later than January 31. Duck daily bag limit ranges and duck season length ranges are provided to allow the Commission flexibility.

A range of season length and bag limit (zero bag limit represents a closed season) is also provided for black brant. The range is necessary, as the black brant Framework cannot be determined until the Pacific Flyway Winter Brant Survey is conducted in January 2019. The regulatory package is determined by the most current Winter Brant Survey, rather than the prior year survey. The regulatory package will be prescribed per the Black Brant Harvest Strategy pending results of the survey, well before the Commission's adoption meeting. See the table in the Informative Digest for the range of season and bag limits.

Lastly, Federal regulations require that California's hunting regulations conform to those of Arizona in the Colorado River Zone and those of Oregon in the North Coast Special Management Area.

The Department's recommendations are as follows:

1) Add Small Canada geese to the Regular Season in subsection 502(d)(1)(B) for the Northeastern California Zone.
2) Add Small Canada geese to Season in subsection 502(d)(6)(A)3 for the Klamath Basin Special Management Area.
3) Open the Late Season for white geese two weeks after the close of the Regular Season in subsection 502(d)(6)(A)9 for the Imperial County Special Management Area.
4) Allow 5 additional days of falconry-only season for the Balance of State Zone in subsection 502(f)(1)(B)2 and allow 2 additional days of falconry-only season for the Southern San Joaquin Valley Zone in subsection 502(f)(1)(B)3.

An alternative requested by Commissioners at the notice hearing:

1) Maintain 100-day season length and use additional five days for falconry-only hunting (as discussed between DFW and California Hawking Club June 18, 2018).
    1) Or, add up to five days a year to the general duck and goose seasons and close these seasons by closing on January 31 instead of the last Sunday in January, as proposed by California Waterfowl at the December notice hearing. This alternative eliminates the existing and proposed falconry-only seasons.

Minor editorial changes are also proposed to clarify and simplify the regulations and to comply with existing federal Frameworks.

Benefits of the regulations
The benefits of the proposed regulations are consistency with federal law and the sustainable management of the State's waterfowl resources. Positive impacts to jobs and/or businesses that provide services to waterfowl hunters will be realized with the continued adoption of waterfowl hunting seasons in 2019-20.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity, and the increase in openness and transparency in business and government.

Evaluation of incompatibility with existing regulations

The Commission has reviewed its regulations in Title 14, CCR, and conducted a search of other regulations on this topic and has concluded that the proposed amendments to Section 502 are neither inconsistent nor incompatible with existing State regulations. No other State agency has the authority to promulgate waterfowl hunting regulations.

Summary of Proposed Waterfowl Hunting Regulations for 2019-20

AREA	SPECIES	SEASONS	DAILY BAG & POSSESSION LIMITS
Statewide	Coots & Moorhens	Concurrent w/duck season	25/day. 75 in possession
Northeastern Zone *Season may be split for Ducks, Pintail, Canvasback, Scaup, Dark Geese and White Geese. White geese and dark geese may be split 3-ways.*	Ducks	Between 38 & 105 days	[4-7]/day, which may include: [3-7] mallards no more than [1-2] females. 1 pintail, 2 canvasback, 2 redheads, 3 scaup. Possession limit triple the daily bag.
	Scaup	86 days	
	Geese	No longer than 105 days	30/day, which may include: 20 white geese, 10 dark geese, no more than 2 Large Canada geese. Possession limit triple the daily bag.
Southern San Joaquin Valley Zone *Season may be split for Ducks, Pintail, Canvasback and scaup*	Ducks	Between 38 & 105 days	[4-7]/day, which may include: [3-7] mallards no more than [1-2] females. 1 pintail, 2 canvasback, 2 redheads, 3 scaup. Possession limit triple the daily bag.
	Scaup	86 days	
	Geese	No longer than 105 days	30/day, which may include: 20 white geese, 10 dark geese. Possession limit triple the daily bag.
Southern California Zone *Season may be split for Ducks, Pintail, Canvasback and Scaup*	Ducks	Between 38 & 105 days	[4-7]/day, which may include: [3-7] mallards no more than [1-2] females. 1 pintail, 2 canvasback, 2 redheads, 3 scaup. Possession limit triple the daily bag.
	Scaup	86 days	
	Geese	No longer than 105 days	23/day, which may include: 20 white geese, 3 dark geese. Possession limit triple the daily bag.
Colorado River Zone *Season may be split for Ducks, Pintail, Canvasback and Scaup*	Ducks	101 days	7/day, which may include: 7 mallards no more than 2 females or Mexican-like ducks. 1 pintail, 2 canvasback, 2 redheads, 3 scaup. Possession limit triple the daily bag.
	Scaup	86 days	

	Geese	101 days	24/day, up to 20 white geese, up to 4 dark geese. Possession limit triple the daily bag.
Balance of State Zone *Season may be split for Ducks, Pintail, Canvasback, Scaup and Dark and White Geese.*	Ducks	Between 38 & 105 days	[4-7]/day, which may include: [3-7] mallards no more than [1-2] females. 1 pintail, 2 canvasback, 2 redheads, 3 scaup. Possession limit triple the daily bag.
	Scaup	86 days	
	Geese	Early Season: 5 days (Canada goose only) Regular Season: no longer than 100 days Late Season: 5 days (whitefronts and white geese)	30/day, which may include: 20 white geese, 10 dark geese. Possession limit triple the daily bag.
SPECIAL MANAGEMENT AREAS	**SPECIES**	**SEASON**	**DAILY BAG & POSSESSION LIMITS**
North Coast *Season may be split*	All Canada Geese	105 days except for Large Canada geese which cannot exceed 100 days or extend beyond the last Sunday in January.	10/day, only 1 may be a Large Canada goose. Possession limit triple the daily bag. Large Canada geese are closed during the Late Season.
Humboldt Bay South Spit (West Side)	All species	Closed during brant season	
Klamath Basin	Dark and white geese	105 days except for Canada geese which cannot exceed 100 days or extend beyond January 31.	30/day, which may include: 20 white geese, 10 dark geese only 2 may be a Large Canada goose. Possession limit triple the daily bag.
Sacramento Valley	White-fronted geese	Open concurrently with general goose season through Dec 21	3/day. Possession limit triple the daily bag.
Morro Bay	All species	Open in designated areas only	Waterfowl season opens concurrently with brant season.
Martis Creek Lake	All species	Closed until Nov 16	
Northern Brant	Black Brant	No longer than 37 days and closing no later than Dec 14.	[0-2]/day. Possession limit triple the daily bag.
Balance of State Brant	Black Brant	No longer than 37 days and closing no later than Dec 15.	[0-2]/day. Possession limit triple the daily bag.
Imperial County *Season may be split*	White Geese	Up to 102 days	20/day. Possession limit triple the daily bag.
YOUTH WATERFOWL HUNTING DAYS	(NOTE: To participate in these Youth Waterfowl Hunts, federal regulations require that hunters must be 17 years of age or younger and must be accompanied by a non-hunting adult 18 years of age or older.)		
	SPECIES	**SEASON**	**DAILY BAG & POSSESSION LIMITS**
Northeastern Zone	Same as regular season	The Saturday fourteen days before the opening of waterfowl season extending for 2 days.	Same as regular season
Southern San Joaquin Valley Zone	Same as regular season	The first or second Saturday in February following the closing of waterfowl season extending for 2 days.	Same as regular season
Southern California Zone	Same as regular season	The first or second Saturday in February following the closing of waterfowl season extending for 2 days.	Same as regular season
Colorado River Zone	Same as regular season	The Saturday following the closing for waterfowl season extending for 2 days.	Same as regular season
Balance of State Zone	Same as regular season	The first or second Saturday in February following the closing of waterfowl season extending for 2 days.	Same as regular season

FALCONRY OF DUCKS	SPECIES	SEASON	DAILY BAG & POSSESSION LIMITS
Northeastern Zone	Same as regular season	Between 38 and 105 days	3/day. Possession limit 9
Balance of State Zone	Same as regular season	Between 38 and 107 days	3/day. Possession limit 9
Southern San Joaquin Valley Zone	Same as regular season	Between 38 and 107 days	3/day. Possession limit 9
Southern California Zone	Same as regular season	Between 38 and 107 days	3/day. Possession limit 9
Colorado River Zone	Same as regular season	105 days	3/day. Possession limit 9

REGULATORY TEXT

Section 502, Title 14, CCR, is amended as follows:

§ 502. Waterfowl, Migratory; American Coot and Common Moorhen (Common Gallinule).

. . . [No changes to subsections (a) through (b)(6)]

(c) Seasons and Bag and Possession Limits for American Coots, and Common Moorhens.		
(1) Statewide Provisions.		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
American Coot and Common Moorhen	Concurrent with duck season(s)	Daily bag limit: 25, either all of one species or a mixture of these species. Possession limit: triple the daily bag limit.
(d) Seasons and Bag and Possession Limits for Ducks and Geese by Zone.		
(1) Northeastern California Zone (NOTE: SEE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers)	~~From the first Saturday in October extending for 105 days.~~ ~~Scaup: from the first Saturday in October extending for a period of 58 days and from the fourth Saturday in December extending for a period of 28 days.~~ [Opening no earlier than the Saturday closest to October 1 and closing no later than January 31. Season may be split into two segments and will be between 38 and 105 days except for some species that may have a shorter season than the general duck season.]	Daily bag limit: ~~7~~ [4-7] Daily bag limit may include: • ~~7~~ [3-7] mallards, but not more than ~~2~~ [1-2] females. • ~~2~~ 2 pintail (either sex). • 2 canvasback (either sex). • 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.
Geese	Regular Season: Small and Large Canada Geese: ~~from the first Saturday in October extending for 100 days.~~ [Opening no earlier than the Saturday closest to October 1 and closing no later than January 31. Season will be no longer than 100 days.]	Daily bag limit: 30 Daily bag limit may include: • 20 white geese. • 10 dark geese but not more than 2 Large Canada geese (see definitions: 502(a)).

	White-fronted ~~geese~~ and white geese ~~from the first Saturday in October extending for a period of 58 days and from the first Saturday in January extending for a period of 14 days~~. [opening no earlier than the Saturday closest to October 1 and closing no later than January 31. Season may be split into two segments and no longer than 100 days.] Late Season: White-fronted and white geese ~~from February 6 extending for 33 days.~~ [Season will be no longer than 33 days and closing no later than March 10.] During the Late Season, hunting is only permitted on Type C wildlife areas listed in Section 550-552, navigable waters, and private lands with the permission of the land owner under provisions of Section 2016, Fish and Game Code. Hunting is prohibited on Type A and Type B wildlife areas, the Klamath Basin National Wildlife Refuge Complex, the Modoc National Wildlife Refuge, and any waters which are on, encompassed by, bounded over, flow over, flow through, or are adjacent to any Type A and Type B wildlife areas, the Klamath Basin National Wildlife Refuge Complex, or the Modoc National Wildlife Refuge.	Possession limit: triple the daily bag limit.
(2) Southern San Joaquin Valley Zone (NOTE: SEE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers)	~~From the third Saturday in October extending for 100 days.~~ ~~Scaup: from the first Saturday in November extending for 86 days.~~ [Opening no earlier than the Saturday closest to October 1 and closing no later than January 31.] Season may be split into two segments and will be between 38 and 105 days except for some species that may have	Daily bag limit: ~~7~~ [4-7] Daily bag limit may include: • ~~7~~ [3-7] mallards, but not more than ~~2~~ [1-2] females. • ~~2~~ 1 pintail (either sex). • 2 canvasback (either sex). • 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.

	a shorter season than the general duck season.]	
Geese	~~From the third Saturday in October extending for 100 days.~~ [Opening no earlier than the Saturday closest to October 1 and closing no later than January 31. Season will be no longer than 105 days.]	Daily bag limit: 30 Daily bag limit may include: • 20 white geese. • 10 dark geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.
(3) Southern California Zone (NOTE: SE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers)	~~From the third Saturday in October extending for 100 days.~~ ~~Scaup: from the first Saturday in November extending for 86 days.~~ [Opening no earlier than the Saturday closest to October 1 and closing no later than January 31.] Season may be split into two segments and will be between 38 and 105 days except for some species that may have a shorter season than the general duck season.]	Daily bag limit: ~~7~~ [4-7] Daily bag limit may include: • ~~7~~ [3-7] mallards, but not more than ~~2~~ [1-2] females. • ~~2~~ 1 pintail (either sex). • 2 canvasback (either sex). • 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.
Geese	~~From the third Saturday in October extending for 100 days.~~ [Opening no earlier than the Saturday closest to October 1 and closing no later than January 31. Season will be no longer than 105 days.]	Daily bag limit: 23 Daily bag limit may include: • 20 white geese. • 3 dark geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.
(4) Colorado River Zone (NOTE: SEE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers).	~~From the third Friday in October extending for 101 days.~~ ~~Scaup: from the first Saturday in November extending for 86 days~~. [Opening no earlier than the Saturday closest to October 1 and closing no later	Daily bag limit: 7 Daily bag limit may include: • 7 mallards, but not more than 2 females or Mexican-like ducks. • ~~2~~ 1 pintail (either sex). • 2 canvasback (either sex).

	than January 31. Season will be 101 days except for some species that may have a shorter season than the general duck season.]	• 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.
Geese	~~From the third Friday in October extending for 101 days.~~ [Opening no earlier than the Saturday closest to October 1 and closing no later than January 31. Season will be 101 days.]	Daily bag limit: 24 Daily bag limit may include: • 20 white geese. • 4 dark geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.
(5) Balance of State Zone (NOTE: SEE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers).	~~From the third Saturday in October extending for 100 days.~~ ~~Scaup: from the first Saturday in November extending for 86 days.~~ [Opening no earlier than the Saturday closest to October 1 and closing no later than January 31.] Season may be split into two segments and will be between 38 and 105 days except for some species that may have a shorter season than the general duck season.]	Daily bag limit: ~~7~~ [4-7] Daily bag limit may include: • ~~7~~ [3-7] mallards, but not more than ~~2~~ [1-2] females. • ~~2~~ 1 pintail (either sex). • 2 canvasback (either sex). • 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.
Geese	Early Season: Large Canada geese only from the Saturday closest to October 1 for a period of 5 days EXCEPT in the North Coast Special Management Area where Large Canada geese are closed during the early season. Regular Season: Dark and white geese [opening no earlier than the Saturday closest to October 1 and closing no later than January 31] ~~from the third Saturday in October~~ extending for 100 days EXCEPT in the Sacramento Valley Special Management Area where the white-fronted goose season will close	Daily bag limit: 30 Daily bag limit may include: • 20 white geese. • 10 dark geese EXCEPT in the Sacramento Valley Special Management Area where only 3 may be white-fronted geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.

		after December 21. Late Season: White-fronted geese and white geese from the second Saturday in February extending for a period of 5 days EXCEPT in the Sacramento Valley Special Management Area where the white-fronted goose season is closed. During the Late Season, hunting is not permitted on wildlife areas listed in Sections 550-552 EXCEPT on Type C wildlife areas in the North Central and Central regions.	
(6) Special Management Areas (see descriptions in 502(b)(6))			
	(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
1. North Coast	All Canada Geese	From ~~October 31~~ November 1 extending for a period of ~~89~~ 87 days (Regular Season) and from February ~~23~~ 22 extending for a period of ~~16~~ 18 days (Late Season). During the Late Season, hunting is only permitted on private lands with the permission of the land-owner under provisions Section 2016, Fish and Game Code.	Daily bag limit: 10 Canada Geese of which only 1 may be a Large Canada goose (see definitions: 502(a)), EXCEPT during the Late Season the bag limit on Large Canada geese is zero. Possession limit: triple the daily bag limit.
2. Humboldt Bay South Spit (West Side)	All Species	Closed during brant season	
3. Klamath Basin	Geese	Small and Large Canada Geese ~~from the first Saturday in October~~ [opening no earlier than the Saturday closest to October 1 and closing no later than January 31] extending for 100 days. White-fronted and white geese ~~from the first Saturday in October~~ [opening no earlier than the Saturday closest to October 1 and closing no later than January 31]	Daily bag limit: 30 Daily bag limit may include: • 20 white geese. • 10 dark geese but not more than 2 Large Canada geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.

		extending for 105 days.	
4. Sacramento Valley	White-Fronted Geese	Open concurrently with the goose season through December 21, and during Youth Waterfowl Hunting Days.	Daily bag limit: 3 white-fronted geese. Possession limit: triple the daily bag limit.
5. Morro Bay	All species	Open in designated area only from the opening day of brant season through the remainder of waterfowl season.	
6. Martis Creek Lake	All species	Closed until November 16.	
7. Northern Brant	Black Brant	~~From November 8 extending for 37 days.~~[Season will be between 0 and 37 days, closing no later than December 14.]	Daily bag limit: ~~2~~ [0-2] Possession limit: triple the daily bag limit.
8. Balance of State Brant	Black Brant	~~From November 9 extending for 37 days~~. [Season will be between 0 and 37 days, closing no later than December 15.]	Daily bag limit: [0-2] Possession limit: triple the daily bag limit.
9. Imperial County	White Geese	From the first Saturday in November extending for a period of 86 days (Regular Season) and from the ~~first~~ second Saturday in February extending for a period of ~~17~~ 16 days (Late Season). During the Late Season, hunting is only permitted on private lands with the permission of the land owner under provisions of Section 2016, Fish and Game Code.	Daily bag limit: 20 Possession limit: triple the daily bag limit.

(e) Youth Waterfowl Hunting Days Regulations (NOTE: To participate in these Youth Waterfowl Hunts, federal regulations require that hunters must be 17 years of age or younger and must be accompanied by a non-hunting adult 18 years of age or older.)

(1) Statewide Provisions.

(A) Species	*(B) Season*	*(C) Daily Bag Limit*
Ducks (including Mergansers), American Coot,	1. Northeastern California Zone: The Saturday fourteen days before the opening of waterfowl season extending	Same as regular season.

Common Moorhen, Black Brant, Geese	for 2 days. 2. Southern San Joaquin Valley Zone: The [first or second] Saturday in February ~~following the closing of waterfowl season~~ extending for 2 days. 3. Southern California Zone: The [first or second] Saturday in February ~~following the closing of waterfowl season~~ extending for 2 days. 4. Colorado River Zone: The Saturday following the closing of waterfowl season extending for 2 days. 5. Balance of State Zone: The [first or second] Saturday in February ~~following the closing of waterfowl season~~ extending for 2 days.	
(f) Falconry Take of Ducks (including Mergansers), Geese, American Coots, and Common Moorhens.		
(1) Statewide Provisions		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers), Geese, American Coot and Common Moorhen	1. Northeastern California Zone. ~~Open concurrently with duck season through January 13, 2019.~~ [No longer than 105 days.] 2. Balance of State Zone. ~~Open concurrently with duck season and February 2-3, 2019~~ [No longer than 107 days] EXCEPT in the North Coast Special Management Area where the falconry season for geese runs concurrently with the season for Small Canada geese (see 502(d)(6)) 3. Southern San Joaquin Valley Zone. ~~Open concurrently with duck season and January 28-30, 2019.~~ [No longer than 107 days.] Goose hunting in this zone by means of	Daily bag limit: 3 Daily bag limit makeup: • Either all of 1 species or a mixture of species allowed for take. Possession limit: 9

	falconry is not permitted. 4. Southern California Zone. ~~Open concurrently with duck season and January 28-February 1, 2019.~~ [No longer than 107 days] EXCEPT in the Imperial County Special Management Area where the falconry season for geese runs concurrently with the season for white geese. 5. Colorado River Zone. ~~Open concurrently with duck season and January 28-31, 2019.~~ [No longer than 105 days.] Goose hunting in this zone by means of falconry is not permitted. Federal regulations require that California's hunting regulations conform to those of Arizona, where goose hunting by means of falconry is not permitted.	

Note: Authority cited: Sections 265 and 355, Fish and Game Code. Reference: Sections 265, 355 and 356, Fish and Game Code.

FINAL
ENVIRONMENTAL DOCUMENT
Section 502, Title 14
California Code of Regulations

MIGRATORY GAME BIRD HUNTING
(WATERFOWL, COOTS, MOORHENS)

April 17, 2019

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND WILDLIFE

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CHAPTER 1 - SUMMARY

PROPOSED PROJECT AND ALTERNATIVES

The project discussed in this document (the proposed project) involves modifications to the current waterfowl hunting regulations for the 2019-20 waterfowl hunting season. The California Department of Fish and Wildlife (Department) has amended the Draft Environmental Document dated December 3, 2018 to identify a new proposal as part of the project and a new alternative not originally considered as directed by the Commission and public comments. Specifically, the Department is proposing to:

- Add Small Canada geese to the Regular Season in the Northeastern California Zone

- Add Small Canada geese to Season in the Klamath Basin Special Management Area

- Open the Late Season for white geese two weeks after the close of the Regular Season in the Imperial County Special Management Area

- Allow 5 additional days of falconry-only season in the Balance of State Zone and 2 additional days of falconry-only season in the Southern San Joaquin Valley Zone

The U.S. Fish and Wildlife Service (Service) established the frameworks in late October. The Federal frameworks specify the outside dates, total number of hunting days, bag limits, shooting hours, and methods of take authorized for migratory game birds. States must set waterfowl hunting regulations within the federal frameworks. The Department will recommend specific season dates and bag limits to the Fish and Game Commission (Commission) that are within the federal frameworks.

The Commission may not select more liberal season dates or bag limits than those set by the Federal frameworks. The Department can only make recommendations within the Federal framework and the Commission's decision is whether to adopt the proposed changes or consider more restrictive regulations.

The Department is providing the Commission with a range of alternatives to the proposed project. Table 1 summarizes the Department findings that there are no

significant long-term adverse impacts associated with the proposed project or any of the project alternatives considered for the 2019-20 waterfowl hunting regulations.

SUMMARY OF IMPACTS AND MITIGATION

Table 1. Summary of Alternatives and Their Impacts

Alternative	Description	Significant Impact	Mitigation
Proposed Project	Add Small Canada geese to the Regular Season in the Northeastern California Zone Add Small Canada geese to Season in the Klamath Basin Special Management Area Open the Late Season for white geese two weeks after the close of the Regular Season in the Imperial County Special Management Area Allow 5 additional days of falconry-only season in the Balance of State Zone and 2 additional days of falconry-only season in the Southern San Joaquin Valley Zone and continue to close the last Sunday in January	No	N/A
Alternative 1. No Project	No change from the 2018-19 hunting regulations.	No	N/A
Alternative 2. Allow additional days of hunting by closing January 31	Add Small Canada geese to the Regular Season in the Northeastern California Zone Add Small Canada geese to Season in the Klamath Basin Special Management Area Open the Late Season for white geese two weeks after the close of the Regular Season in the Imperial County Special Management Area Allow up to 5 additional days of general duck and goose seasons in the San Joaquin Valley, Southern California, and Balance of State zones by closing January 31 rather than the last Sunday in January	No	N/A
Alternative 3. Reduced Season Lengths, Timing and Bag Limits	Reduce season lengths, timing, and/or bag limits by up to 50 percent.	No	N/A
Alternative 4. Elimination of All Mechanical Decoys.	Eliminate mechanical decoys as a method of take.	No	N/A

The Department concludes that the regulated harvest of migratory game birds within the Federal guidelines does not result in a significant adverse impact to their populations as analyzed in the 2006 Final Environmental Document for Migratory Game Bird Hunting of Waterfowl, Coots, and Moorhens (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). This is because the size of a wildlife population at any point in time is the result of the interaction between population (reproductive success and mortality rates) and its environment (habitat). Declines in habitat quality and quantity result in reduced carrying capacity, which results in corresponding declines in populations.

State and Federal roles in establishing waterfowl hunting regulations

Migratory birds are managed under the provisions of the Migratory Bird Treaty Act of July 3, 1918 (40. Stat. 755:16 U.S.C. 703 et seq.), Federal regulations [50 CFR 20 (K)(L)], as well as California statutes (Fish and Game Code sections 355 and 356) and regulations selected by the Commission.

The regulations governing the take of migratory game birds in California are selected by the Commission and forwarded to the Service each year. The regulations selected by the Commission must be within frameworks established by the Service through the following generalized three-step process:

1. The Service, with assistance from the states, assesses the status of migratory game bird populations.

2. The Service establishes regulatory frameworks;

3. The Commission makes and forwards season selections to the Service regarding regulations for California; and

4. The Service and the State publish the final regulations.

The Federal frameworks specify the outside dates, total number of hunting days, bag limits, shooting hours, and methods of take authorized for migratory game birds. Proposals selected by the Commission cannot be more liberal than the frameworks established by the Service (Fish and Game Code, Section 355).

In selecting hunting regulations, the Commission is governed by the State's Conservation of Wildlife Resources Policy (Fish and Game Code, Section 1801). This policy contains, among other things, objectives to maintain sufficient populations of wildlife resources in the State and to provide public hunting opportunities through

regulated harvest where such harvest is consistent with maintaining healthy wildlife populations (Section 1801 California Fish and Game Code).

In August, the Service provided notice to establish hunting regulations for the 2019-20 hunting season; see Federal Register 83 FR 27836. The notice also solicits public comments and establishes the annual schedule for meetings.

The Department is recommending four changes to the existing hunting regulations. The frameworks for the 2019-20 season have been approved by the Flyway Councils and adopted by the Service Regulation's Committee meeting October 16-17, 2018. The frameworks allow for a liberal duck season which includes a 107 day season, 7 daily duck limit including 7 mallards but only 2 hen mallards, 1 pintail, 2 canvasback, 2 redheads, and 3 scaup (during an 86 day season). The Department's proposals for the 2019-20 hunting season for waterfowl, coots, and moorhens are based on these Federal frameworks. A range of season length and bag limit (zero bag limit represents a closed season) is also provided for black brant. The range is necessary, as the black brant Framework cannot be determined until the Pacific Flyway Winter Brant Survey is conducted in January 2019. The regulatory package is to be determined by the most current Winter Brant Survey, rather than the prior year survey. The regulatory package will be prescribed per the Black Brant Harvest Strategy (Pacific Flyway Council 2018) pending results of the January survey

The 2019-20 Federal Frameworks Pertaining to California

Ducks, Mergansers, Coots, Common Moorhens, and Purple Gallinules
Hunting Seasons and Duck Limits: Concurrent 107 days. The daily bag limit is 7 ducks and mergansers, including no more than 2 female mallards, 1 pintail, 3 scaup (86-day season), 2 canvasback, and 2 redheads. The season on coots and common moorhens may be between the outside dates for the season on ducks, but not to exceed 107 days. Coot, Common Moorhen, and Purple Gallinule Limits: The daily bag limits of coots, common moorhens, and purple gallinules are 25, singly or in the aggregate. Possession limits for all species are triple the daily bag limit.

Outside Dates: Between the Saturday nearest September 24 (September 21) and January 31.

Zoning and Split Seasons: Arizona, California, Idaho, Nevada, Oregon, Utah, Washington, and Wyoming may select hunting seasons by zones. Arizona, California, Idaho, Nevada, Oregon, Utah, Washington, and Wyoming may split their seasons into two segments. Colorado, Montana, and New Mexico may split their seasons into two segments.

Colorado River Zone, California: Seasons and limits shall be the same as seasons and limits selected in the adjacent portion of Arizona (South Zone).

Geese
Season Lengths, Outside Dates, and Limits

Canada geese and brant: Except as subsequently noted, 107-day seasons may be selected with outside dates between the Saturday nearest September 24 (September 21) and January 31. In California, Oregon, and Washington, the daily bag limit is 4 Canada geese. For brant, the season framework will be determined by the harvest strategy in the management plan for the Pacific Population of Brant, pending results of the 2019 Winter Brant Survey (WBS). If the results of the 2019 WBS are not available, results of the most recent WBS will be used. Days must be consecutive. Washington and California may select hunting seasons for up to two zones. The daily bag limit is in addition to other goose limits. In Oregon and California, the brant season must end no later than December 15.

White-fronted geese: Except as subsequently noted, 107-day seasons may be selected with outside dates between the Saturday nearest September 24 (September 21) and March 10. The daily bag limit is 10.

Light geese: Except as subsequently noted, 107-day seasons may be selected with outside dates between the Saturday nearest September 24 (September 21) and March 10. The daily bag limit is 20.

Split Seasons: Unless otherwise specified, seasons for geese may be split into up to 3 segments. Three-way split seasons for Canada geese and white-fronted geese require Pacific Flyway Council and U.S. Fish and Wildlife Service approval and a 3-year evaluation by each participating State.

California: The daily bag limit for Canada geese is 10.

Balance of State Zone (includes Southern San Joaquin Valley Zone): A Canada goose season may be selected with outside dates between the Saturday nearest September 24 (September 21) and March 10. In the Sacramento Valley Special Management Area, the season on white-fronted geese must end on or before December 28, and the daily bag limit is 3 white-fronted geese. In the North Coast Special Management Area, hunting days that occur after the last Sunday in January should be concurrent with Oregon's South Coast Zone.

Northeast Zone: White-fronted goose seasons may be split into 3 segments.

Shooting Hours – From One-half hour before sunrise to sunset.

AREAS OF CONTROVERSY

A public scoping session regarding the preparation of environmental documents for hunting waterfowl was held on October 18, 2018, at the Wildlife Branch office located at 1812 9th Street, Sacramento. No areas of controversy regarding migratory bird hunting were identified at the meeting. However, members of the public have expressed concern regarding the following: 1) mechanical spinning wing decoys in the use of taking waterfowl during past hunting seasons. Specifically, since 2002 about 100 letters and or public testimony has been received by the Fish and Game Commission to ban mechanically spinning wing decoys while only about 12 letters of support or public testimony in favor of mechanically spinning wing decoys during the same time period (Department files); 2) the Commission has received numerous letters both supporting and opposing the continued hunting in Morro and Tomales bays; and 3) opposition to the continued restrictions on bag limit and season length for white-fronted geese in the Sacramento Valley Special Management Area.

Concerns about the effect of climate change since the 2006 Final Environmental Document for Migratory Game Bird Hunting of Waterfowl, Coots, and Moorhens (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811) was published led to a discussion of this topic in Appendix F.

ISSUES TO BE RESOLVED

As provided by existing law, the Commission is the decision-making body (lead agency) considering the proposed project, while the Department has responsibility for conducting management activities such as resource assessments, preparing management plans, operating public hunting opportunities and enforcing laws and regulations. The primary issue for the Commission to resolve is whether to change waterfowl hunting regulations, within the federal framework, as an element of waterfowl management. If such changes are authorized, the Commission will specify the areas, season lengths, and bag and possession limits and other appropriate special conditions.

FUNCTIONAL EQUIVALANCY

The California Environmental Quality Act (CEQA) requires all public agencies in the State to evaluate the environmental impacts of projects they approve, including regulations, which may have a potential to significantly affect the environment. CEQA review of the proposed project will be conducted in accordance with the Commission's

certified regulatory program (CRP) approved by the Secretary for the California Resources Agency pursuant to Public Resources Code section 21080.5 (See generally Cal. Code Regs., tit. 14, §§ 781.5, and 15251, subd. (b).). The Department has prepared this Environmental Document (ED) which is the functional equivalent of an Environmental Impact Report, on behalf of the Commission in compliance with this requirement. The ED provides the Commission, other agencies, and the general public with an objective assessment of the potential effects.

In addition, pursuant to Section 15087 of the CEQA Guidelines, this environmental document is available for public review for 45 days. During the review period, the public is encouraged to provide written comments regarding the environmental document to the Department of Fish and Wildlife, Wildlife Branch, 1812 9th Street, Sacramento, California 95811. Comments must be received by the Department by 5:00 p.m. on March 25, 2019.

CHAPTER 2 - THE PROPOSED ACTION

The proposed project being considered consists of the following modifications to existing migratory game bird hunting regulations:

1. Add Small Canada Geese to the Regular Season in the Northeastern California Zone.

2. Add Small Canada Geese to Season in the Klamath Basin Special Management Area.

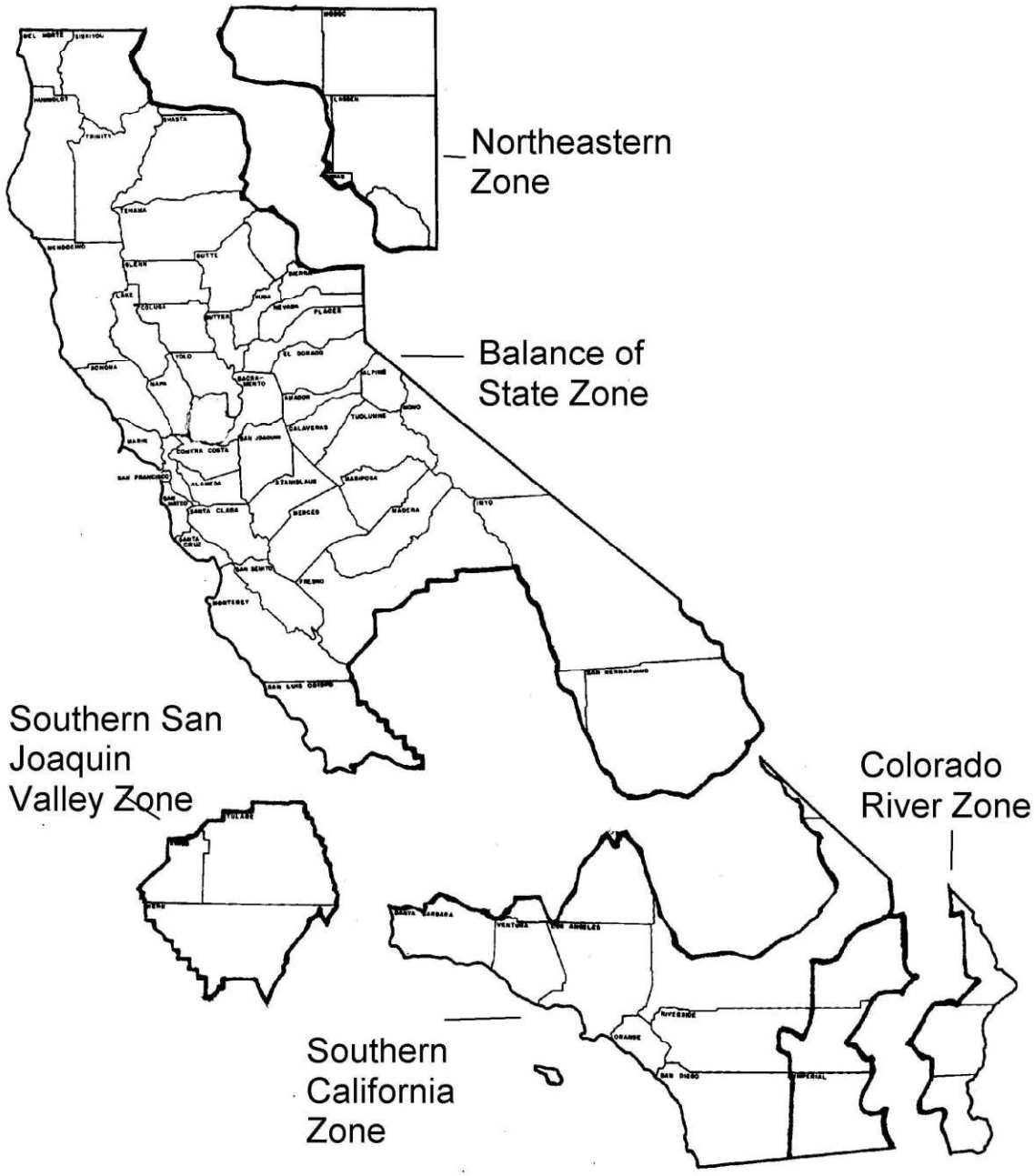
3. Open the Late Season for white geese two weeks after the close of the Regular Season in the Imperial County Special Management Area.

4. Allow 5 additional days of falconry-only season in the Balance of State Zone and 2 additional days of falconry-only season in the Southern San Joaquin Valley Zone

Table 2. Proposed Changes to Season Dates and Bag Limits for 2019-20.

Species by Zone	Daily Bag Limit	Possession limit	Season Length
COOTS AND MOORHENS			
Northeastern CA	no change	no change	no change
So. San Joaquin Valley	no change	no change	no change
So. California	no change	no change	no change
Colorado River	no change	no change	no change
Balance of State	no change	no change	no change
DUCKS			
Statewide	no change	no change	
EXCEPTIONS			
Mallard (max.)	no change	no change	no change
Mallard Hen (max.)	no change	no change	no change
Pintail (max.)	1	no change	no change
Redhead (max.)	no change	no change	no change
Scaup (max.)	no change	no change	no change
Canvasbacks (max.)	no change	no change	no change
Northeastern Calif.	no change	no change	no change
So. San Joaquin Valley	no change	no change	107 days
Southern California	no change	no change	107 days
Colorado River	no change	no change	no change
Balance of State	no change	no change	107 days
GEESE			
Northeastern Calif.		no change	no change
EXCEPTIONS			
Large Canada Geese (max.)	no change	no change	
White-Front (max.)	no change	no change	no change
Small Canada Geese (max.)	no change	no change	
White Geese (max.)	no change	no change	no change
So. San Joaquin Valley	no change	no change	107 days
EXCEPTIONS			
Large Canada Geese (max.)	no change	no change	
White-Front (max.)	no change	no change	
Small Canada Geese (max)	no change	no change	
White Geese (max.)	no change	no change	
Southern Calif.	no change	no change	107 days
EXCEPTIONS			
Large Canada Goose (max.)	no change	no change	
White-Front Geese (max.)	no change	no change	
Small Canada Geese (max)	no change	no change	
White Geese (max.)	no change	no change	
Colorado River	no change	no change	no change
EXCEPTIONS			
White Geese (max.)	no change	no change	
Dark Geese (max.)	no change	no change	
Balance of State	no change	no change	no change
EXCEPTIONS			
Large Canada Geese (max.)	no change	no change	
White-Front (max.)	no change	no change	
Small Canada Geese (max)	no change	no change	
White Geese (max.)	no change	no change	
Special Management Areas	**Species**		**Season**
North Coast	no change		no change
Humboldt Bay South Spit	no change		no change
Klamath Basin	no change		no change
Sacramento Valley (West)	no change		no change
Morro Bay	no change		no change
Martis Lake	no change		no change
North Coast Brant	no change		0-37 days
Balance of State Brant	no change		0-37 days
Imperial County	no change		no change

Figure 1. Waterfowl Zones in California



BACKGROUND AND EXISTING CONDITIONS

Background

Waterfowl, coots and moorhens are migratory game birds that use varied habitat types in different geographical areas of North America. Many individuals of these species reproduce in other states and countries and migrate in the fall and winter to California, although there are substantial resident populations of some species.

There are 36 species of migratory game birds from two of the taxonomic families that occur in California, listed below. Migratory game birds are defined by convention and law as belonging to the following taxonomic families (USDI 1988a:1):

Anatidae (ducks, geese, brant, and swans);
Columbidae (doves and pigeons);
Gruidae (cranes);
Rallidae (rails, coots, and gallinules);
Scolopacidae (woodcock and snipe);
Corvidae (crows).

The two families discussed in this ED are *Anatidae* and *Rallidae*. These families are combined herein due to similarities in basic life-history characteristics. These characteristics include: (1) the use of California as a migration and wintering area (Palmer 1976, Bellrose 1980, Zeiner *et al*. 1990); (2) the use of seasonal wetlands as roosting and foraging habitats (Bellrose 1980, Heitmeyer and Raveling 1988, USDI 1988a:31-56); and (3) for most duck species, similarities in nesting areas, habitat types, age at reproduction, and clutch sizes (Palmer 1976, Bellrose 1980, USDI 1988). Some differences among the species in these families exist. Geese and some duck species breed at an older age than do most ducks (Palmer 1976, Bellrose 1980). Deepwater and estuarine habitats are more important to some species (Palmer 1976, Bellrose 1980), and the use of dry and wet agricultural fields are more important to other species (Bellrose 1980, Zeiner *et al*. 1990).

Individuals and populations of migratory birds spend parts of the year in different geographical areas. Due to this geographic distribution and migratory nature, management for these species is based on geographic units, or flyways, (USDI 1975, USDI 1988a:63) comprised of several states (Figure 2).

These units, or flyways, incorporate populations that are generally discrete from populations in other units. Therefore, an analysis of the environmental effects of

Figure 2. Administrative Waterfowl Flyways

the proposed project in California must consider the status of the affected species at a flyway level.

Adaptive Harvest Management

In March 1995 (60 FR 15642–15648), the Service implemented a general harvest strategy for setting duck framework regulations and the process will be used again in 2019 (83 FR 27836–27844). The regulatory process for migratory birds has evolved since the early 1900s from one that included little or no monitoring of populations and the establishment of regulations based on traditions, to today's more data-driven process (Johnson *et al*. 1993). The current process, known as Adaptive Harvest Management (AHM)(USFWS 2018a) establishes explicit harvest objectives and a single regulatory package is selected from a limited array of options. This single package is evaluated based on mathematical models, with the goal of ensuring that duck populations are healthy over the long-term while providing hunting opportunity consistent with the long-term health while learning more about the effect of hunting mortality on population parameters (See Final Environmental Document for Migratory Game Bird Hunting August 2006, incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811)

AHM balances hunting opportunities with the desire to achieve the duck population goals identified in the North American Waterfowl Management Plan (NAWMP). Currently, a set of four regulatory options, each containing flyway-specific season lengths, bag limits, and dates are being used. The selection of a specific option is recommended each year from a decision matrix based on mid-continent mallard breeding populations and habitat conditions in the current year, although the State continues to have the option to establish more restrictive regulations.

For the Pacific Flyway, the proposed regulatory packages vary primarily in season length (closed, 60, 86, or 107 days) and total duck bag limit (either four or seven ducks per day). Species- (e.g. mallard) and sex- (e.g. mallard) specific limits are contained within the AHM packages. Additionally, prescriptive regulation processes for pintail, canvasback and scaup have been adopted by the Service that determine daily bag limits depending on breeding population size, habitat conditions, and the season length established through the AHM process (see below).

In March 2008, the Pacific Flyway Council recommended that the Service set duck season frameworks in the Pacific Flyway based on a separate modeling approach that uses data from western mallards rather than mallards from the mid-continent region. This is because most of the mallards harvested in the Pacific Flyway originate from within the Flyway. The Service adopted the separate mallard model in August 2008 and plans to continue the use of that approach in 2019 (83 FR 27836–27844).

The western mallard approach uses the same regulatory packages as currently in use under continental AHM. Instead of a harvest objective constrained by the population goal in the NAWMP plan, the harvest objective for western mallards is based on a "shoulder approach", or a proportion of maximum sustained yield. Current modeling suggests that western mallards have been harvested at about 80% of their maximum potential, compared to about 90% for mid-continent mallards under the continental AHM approach.

As in mid-continent AHM, daily bag limits and season length will be set based on the status of the mallard breeding population. Bag limits for other species, including those for which individual harvest strategies have been adopted (pintail, canvasbacks, scaup) are based on mid-continent AHM and will be used in the Pacific Flyway. The State continues to have the option to establish more restrictive regulations.

Pintail Harvest Strategy

In 1997 a prescribed harvest strategy was developed (62 FR 39721 and 50662) with several modifications since inception. The harvest strategy was revised in 2002 when Flyway-specific harvest models were updated (67 FR 40131). In 2002 and 2003, the Service set pintail regulations that deviated from the strict prescriptions of the harvest strategy (i.e., partial season), but remained true to the intent of the strategy (67 FR 53694 and 59111; 68 FR 50019 and 55786). In 2004, the harvest strategy was modified to include a partial season option (69 FR 43696 and 52971). In adopting those changes, the USFWS and others called for review of the pintail strategy (69 FR 57142) and consideration of technical modifications that could be made to improve it. As a result of this review, the strategy was revised in 2006 to include updated flyway-specific harvest models, an updated recruitment model, and the addition of a procedure for removing bias in the breeding population size estimate based on its mean latitude (71 FR 50227 and 55656). Pursuant to requests from flyways and other stakeholders, a compensatory model was added to the strategy in 2007 (72 FR 18334, 31791, and 40198) as an alternative to the existing additive harvest model, and this update made the harvest strategy adaptive on an annual basis. The current strategy was developed in 2010 (75 FR 32873) and designed to maximize long-term cumulative harvest, which inherently requires perpetuation of a viable population. Hunting will be allowed when the observed breeding population is above 1.75 million birds (based on the lowest observed breeding population size since 1985 of 1.79 million birds in 2002).

The adaptive management protocol considers a range of regulatory alternatives for pintail harvest management that includes a closed season, 1-bird daily bag limit, or 2-bird daily bag limit. The maximum pintail season length depends on the general duck season framework (characterized as liberal, moderate, or restrictive and varying by Flyway) specified by mallard AHM.

An optimal pintail regulation is calculated under the assumption of a liberal mallard season length in all Flyways. However, if the season length of the general duck season determined by mallard AHM is less than liberal in any of the Flyways, then an appropriate pintail daily bag limit would be substituted for that Flyway. Thus, a shorter season length dictated by mallard AHM would result in an equivalent season length for pintails, but with increased bag limit if the expected harvest remained within allowable limits.

Canvasback Harvest Strategy

Since 1994 the Service has followed a harvest strategy that if canvasback population status and production are sufficient to permit a harvest of 1-bird daily bag limit nationwide for the entire length of the regular duck season, while still attaining a projected spring population objective of 500,000 birds. In 2008 (73 FR 43290), the strategy was modified to incorporate the option for a 2-bird daily bag limit for canvasbacks when the predicted breeding population the subsequent year exceeds 725,000 birds. A partial season would be permitted if the estimated allowable harvest was within the projected harvest for a shortened season. If neither of these conditions can be met, the harvest strategy calls for a closed season.

Scaup Harvest Strategy

The scaup population has experienced a significant long-term decline. The 2007 population estimate was the third lowest on record. Recent population estimates have been more than 30 percent below the 55 year average with the biggest decline occurring over the last 25 years. There is evidence that the long-term scaup decline may be related to changes in scaup habitat. Several different ideas have been proposed to explain the decline, including a change in migration habitat conditions and food availability, effects of contaminants on scaup survival and reproduction and changing conditions on the breeding grounds possibly related to warming trends in portions of northern North America. Hunting has not been implicated as a cause of the past scaup decline, but the Service is committed to ensuring that harvest levels remain commensurate with the ability of the declining population to sustain harvest. In 2008 the Service implemented a new scaup harvest strategy (73 FR 43290) that used restrictive, moderate, and liberal regulatory alternatives. The scaup harvest strategy prescribes optimal harvest levels given an observed breeding population size and an explicit harvest management objective; maximize 95% of long-term cumulative harvest.

Service Changes in the Timing of Annual Migratory Bird Hunting Adoption

Historically, the Service published preliminary federal frameworks in mid-August and states adopted hunting regulations in early August based on the decisions of the Service Regulation Committee (SRC) in late July. The Service then published final

frameworks, which contained the state-selected seasons in September. Beginning with the 2016 hunting seasons (79 FR 56864) a new schedule is now used for setting annual migratory bird hunting regulations. The new schedule will establish migratory bird hunting seasons much earlier than the historic system. Under the new process, proposed hunting season frameworks for a given year will be developed in early fall of the prior year. Those frameworks will be finalized in October, thereby enabling the state agencies to select their seasons by late April and the Service will publish final frameworks in early summer.

Biological data (spring and summer surveys) for the following year will not be available in the fall, when the Flyway Councils and the Service will be developing hunting regulations for the next year. Thus, regulation development will be based on predictions derived from long-term biological information and established harvest strategies (as described above). This process will continue to use the best science available and will balance hunting opportunities with long-term migratory game bird conservation, while fulfilling all administrative requirements. Existing individual harvest strategies have been modified using either data from the previous year(s) or model predictions to fit this new schedule. Many existing regulatory prescriptions used for Canada Goose, Sandhill Cranes, Mourning Doves, and American Woodcock currently work on this basis. Uncertainty associated with these population status predictions has been accounted for and incorporated into the decision-making process. The Service concluded (Boomer, *et al.* 2015) that this uncertainty should not result in a disproportionately higher harvest rate for any stock, nor substantially diminish harvest opportunities, either annually or on a cumulative basis.

Service Changes to Season Ending Date (Season Extensions)

At the Service's Regulation Committee meeting in October 2018 the ending date for the duck season framework was changed to January 31, replacing the last Sunday in January. The framework ending date of the last Sunday in January has been in place since 2002, as previously analyzed in the 2006 Final Environmental Document for Migratory Game Bird Hunting of Waterfowl, Coots, and Moorhens (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). The maximum season length remains 107 days.

This change results in up to a 6-day later ending date, depending on the year. For example, the new closing date for the 2019-20 season is Friday, January 31, 2020, rather than Sunday, January 26, 2020. For the 2020-21 season, January 31 falls on a Sunday, resulting in no difference from historic regulations.

Existing Conditions

Northeastern Zone: In that portion of California lying east and north of a line beginning at the intersection of Interstate 5 with the California-Oregon line; south along Interstate 5 to its junction with Walters Lane south of the town of Yreka; west along Walters Lane to its junction with Easy Street; south along Easy Street to the junction with Old Highway 99; south along Old Highway 99 to the point of intersection with Interstate 5 north of the town of Weed; south along Interstate 5 to its junction with Highway 89; east and south along Highway 89 to Main Street in Greenville; north and east to its junction with North Valley Road; south to its junction of Diamond Mountain Road; north and east to its junction with North Arm Road; south and west to the junction of North Valley Road; south to the junction with Arlington Road (A22); west to the junction of Highway 89; south and west to the junction of Highway 70; east on Highway 70 to Highway 395; south and east on Highway 395 to the point of intersection with the California-Nevada state line; north along the California-Nevada state line to the junction of the California-Nevada-Oregon state lines west along the California-Oregon state line to the point of origin.

Ducks: From the first Saturday in October extending for 105 days, 7/day which may include 7 mallards, 2 hen mallards, 2 pintail, 2 canvasback, 2 redheads, 3 scaup during the 86-day season. Possession limit triple the daily bag.

Large Canada Geese: from the first Saturday in October extending for 100 days, White-fronted geese and white geese from the first Saturday in October extending for a period of 58 days and from the first Saturday in January extending for a period of 14 days. 30/day, up to 20 white geese and up to 10 dark geese, but not more than 2 Large Canada geese Possession limit triple the daily bag.,

Coots and Moorhens: Concurrent with Duck Season. 25/day. Possession limit triple the daily bag.

Youth Hunting Days: The Saturday fourteen days before the opening of waterfowl season extending for 2 days. To participate in these youth hunts hunters must be 17 years of age or younger and must be accompanied by a non-hunting adult 18 years of age or older.

Falconry Take of Ducks: Open concurrently with duck season extending for 105 days. 3/day. Possession limit triple the daily bag.

Southern San Joaquin Valley Zone: All of Kings and Tulare counties and that portion of Kern County north of the Southern California Zone.

Ducks: From the third Saturday in October extending for 100 days, 7/day which may include, 7 mallards, 2 hen mallards, 2 pintail, 2 canvasback, 2 redheads, 3 scaup during the 86-day season. Possession limit triple the daily bag.

Geese: From the third Saturday in October extending for 100 days, 30/day, up to 20 white geese and up to 10 dark geese. Possession limit triple the daily bag.

Coots and Moorhens: Concurrent with Duck Season, 25/day. Possession limit triple the daily bag.

Youth Hunting Days: The Saturday following the closing of waterfowl season extending for 2 days. To participate in these youth hunts hunters must be 17 years of age or younger and must be accompanied by a non-hunting adult 18 years of age or older.

Falconry Take of Ducks: Ducks only, concurrent with duck season and January 28-30, 2019. 3/day. Possession limit triple the daily bag.

Southern California Zone: In that portion of southern California (but excluding the Colorado River zone) lying south and east of a line beginning at the mouth of the Santa Maria River at the Pacific Ocean; east along the Santa Maria River to where it crosses Highway 101-166 near the City of Santa Maria; continue north on 101-166; east on Highway 166 to the junction with Highway 99; south on Highway 99 to the junction of Interstate 5; south on Interstate 5 to the crest of the Tehachapi Mountains at Tejon Pass; east and north along the crest of the Tehachapi Mountains to where it intersects Highway 178 at Walker Pass; east on Highway 178 to the junction of Highway 395 at the town of Inyokern; south on Highway 395 to the junction of Highway 58; east on Highway 58 to the junction of Interstate 15; east on Interstate 15 to the junction with Highway 127; north on Highway 127 to the point of intersection with the California-Nevada state line.

Ducks: From the third Saturday in October extending for 100 days, 7/day which may include, 7 mallards, 2 hen mallards, 2 pintail, 2 canvasback, 2 redheads, 3 scaup during the 86-day season. Possession limit triple the daily bag.

Geese: From the third Saturday in October extending for 100 days, 23/day, up to 20 white geese, up to 3 dark geese. Possession limit triple the daily bag.

Coots and Moorhens: Concurrent with duck season, 25/day. Possession limit triple the daily bag.

Youth Hunting Days: The Saturday following the closing of waterfowl season extending for 2 days. To participate in these youth hunts hunters must be 17 years of age or younger and must be accompanied by a non-hunting adult 18 years of age or older.

Falconry Take of Ducks: Concurrent with duck season and January 28 – February 1, 2019. 3/day. Possession limit triple the daily bag.

Colorado River Zone: In those portions of San Bernardino, Riverside, and Imperial counties lying east of the following lines: Beginning at the intersection of Nevada State Highway 95 with the California-Nevada state line; south along Highway 95 through the junction with Highway 40; continue south on Highway 95 to Vidal Junction; south through the town of Rice to the San Bernardino-Riverside county line on a road known as "Aqueduct Road" also known as Highway 62 in San Bernardino County; southwest on Highway 62 to Desert Center Rice Road; south on Desert Center Rice Road/Highway 177 to the town of Desert Center; continue east 31 miles on Interstate 10 to its intersection with the Wiley Well Road; south on this road to Wiley Well; southeast along the Milpitas Wash Road to the Blythe, Brawley, Davis Lake intersections; south on the Blythe Ogilby Road also known as County Highway 34 to its intersection with Ogilby Road; south on this road to Highway 8; east seven miles on Highway 8 to its intersection with the Andrade-Algodones Road/Highway 186; south on this paved road to the intersection of the Mexican boundary line at Los Algodones, Mexico.

Ducks: From the third Friday in October extending for 101 days, 7/day which may include 7 mallards, 2 hen mallards or Mexican-like ducks, 2 pintail, 2 canvasback, 2 redheads, 3 scaup during the 86-day season. Possession limit triple the daily bag.

Geese: From the third Friday in October extending for 101 days, 24/day, up to 20 white geese, up to 4 dark geese. Possession limit triple the daily bag.

Coots and Moorhens: Concurrent with Duck Season, 25/day, 25 in possession.

Youth Hunting Days: The Saturday following the closing for waterfowl season. To participate in these youth hunts hunters must be 17 years of age or younger and must be accompanied by a non-hunting adult 18 years of age or older.

Falconry Take of Ducks: Ducks only. Concurrent with duck season and from January 28 – 31, 2019. 3/day. Possession limit triple the daily bag.

Balance of State Zone: That portion of the state not included in Northeastern California, Southern California, Colorado River or the Southern San Joaquin Valley zones.

Ducks: From the third Saturday in October extending for 100 days, 7/day which may include 7 mallards, 2 hen mallards, 2 pintail, 2 canvasback, 2 redheads, 3 scaup during the 86-day season. Possession limit triple the daily bag.

Geese: Early Season: Large Canada only from the Saturday closest to October 1 for a period of 5 days EXCEPT in the North Coast Management Area where Large Canada geese are closed during the early season. Regular Season: Dark and white geese from the third Saturday in October extending for 100 days EXCEPT in the Sacramento Valley Special Management Area where the white-fronted goose season will close after December 21. Late Season: White-fronted geese and white geese from the second Saturday in February extending for a period of 5 days EXCEPT in the Sacramento Valley Special Management Area where the white-fronted geese is closed. During the Late Season, hunting is not permitted on wildlife areas listed in Sections 550 – 552 EXCEPT on Type C wildlife areas in the North Central Region. 30/day, up to 20 white geese and up to 10 dark geese, but not more than 3 white-fronted geese in the Sacramento Valley Special Management Area. Possession limit triple the daily bag.

Coots and Moorhens: Concurrent with Duck Season, 25/day. Possession limit triple the daily bag.

Youth Hunting Days: The Saturday following the closing of waterfowl season extending for 2 days. To participate in these youth hunts hunters must be 15 years of age or younger and must be accompanied by a non-hunting adult 18 years of age or older.

Falconry Take of Ducks: Open concurrently with duck season and February 2–3, 2019. 3/day. Possession limit triple the daily bag.

North Coast Special Management Area: All of Del Norte and Humboldt counties.

All Canada Geese: From the second Sunday in November extending for a period of 85 days (Regular Season) and from the third Saturday in February extending for a period of 20 days (Late Season). During the Late Season, hunting is only permitted on private lands with the permission of the land owner under provisions of Section 2016. Up to 10/day Canada geese of which only 1 may be a Large Canada goose, EXCEPT during the Late Season the bag limit on Large Canada geese is 0/day. Possession limit triple the daily bag.

Falconry Take of Ducks: Geese only. Concurrent with Small Canada goose season. 3/day. Possession limit triple the daily bag.

Humboldt Bay South Spit (West Side) Special Management Area: Beginning at the intersection of the north boundary of Table Bluff County Park and the South Jetty Road; north along the South Jetty Road to the South Jetty; west along the South Jetty to the mean low water line of the Pacific Ocean; south along the mean low water line to its intersection with the north boundary of the Table Bluff County Park; east along the north boundary of the Table Bluff County Park to the point of origin.

All species: Closed during brant season

Klamath Basin. Beginning at the intersection of Highway 161 and Highway 97; east on Highway 161 to Hill Road; south on Hill Road to N Dike Road West Side; east on N Dike Road West Side until the junction of the Lost River; north on N Dike Road West Side until the Volcanic Legacy Scenic Byway; east on Volcanic Legacy Scenic Byway until N Dike Road East Side; south on the N Dike Road East Side; continue east on N Dike Road East Side to Highway 111; south on Highway 111/Great Northern Road to Highway 120/Highway 124; west on Highway 120/Highway 124 to Hill Road; south on Hill Road until Lairds Camp Road; west on Lairds Camp Road until Willow Creek; west and south on Willow Creek to Red Rock Road; west on Red Rock Road until Meiss Lake Road/Old State Highway; north on Meiss Lake Road/Old State Highway to Highway 97; north on Highway 97 to the point of origin.

Large Canada Geese from the first Saturday in October extending for 100 days, White-fronted and white geese from the first Saturday in October extending for 105 days. 30/day, up to 20 white geese and up to 10 dark geese, but not more than 2 Large Canada geese Possession limit triple the daily bag.

Sacramento Valley (West) Special Management Area: Beginning at the town of Willows; south on Interstate 5 to the junction with Hahn Road; east on Hahn Road and the Grimes-Arbuckle Road to the town of Grimes; north on Highway 45 to its junction with Highway 162; north on Highway 45-162 to the town of Glenn; west on Highway 162 to the point of beginning.

White-fronted geese: Closed after Dec 21, 3/day. Possession limit triple the daily bag.

*Morro Bay Special Management Area***:** Beginning at a point where the high tide line intersects the State Park boundary west of Cuesta by the Sea; northeasterly to a point 200 yards offshore of the high tide line at the end of Mitchell Drive in Baywood Park;

northeasterly to a point 200 yards offshore of the high tide line west of the Morro Bay State Park Boundary, adjacent to Baywood Park; north to a point 300 yards south of the high tide line at the end of White Point; north along a line 400 yards offshore of the south boundary of the Morro Bay City limit to a point adjacent to Fairbanks Point; northwesterly to the high tide line on the sand spit; southerly along the high tide line of the sand spit to the south end of Morro Bay; easterly along the Park boundary at the high tide line to the beginning point.

All species: Open in designated areas only

Martis Creek Lake Special Management Area: The waters and shoreline of Martis Creek Lake, Placer and Nevada counties.

All species: Closed until Nov 16

*Northern Brant Special Management Area***:** Del Norte, Humboldt and Mendocino Counties.

Black Brant: From November 8 extending for 37 days. Possession limit triple the daily bag.

Balance of State Brant Special Management Area: That portion of the state not included in the Northern Brant Special Management Area.

Black Brant: From November 9 extending for 37 days. Possession limit triple the daily bag.

Imperial County Special Management Area: Beginning at Highway 86 and the Navy Text Base Road; south on Highway 86 to the town of Westmoreland; continue through the town of Westmoreland to Route S26; east on Route S26 to Highway 115; north on Highway 115 to Weist Rd.; north on Weist Rd. to Flowing Wells Rd.; northeast on Flowing Wells Rd. to the Coachella Canal; northwest on the Coachella Canal to Drop 18; a straight line from Drop 18 to Frink Rd.; south on Frink Rd. to Highway 111; north on Highway 111 to Niland Marina Rd.; southwest on Niland Marina Rd. to the old Imperial County boat ramp and the water line of the Salton Sea; from the water line of the Salton Sea, a straight line across the Salton Sea to the Salinity Control Research Facility and the Navy Test Base Road; southwest on the Navy Test Base Road to the point of beginning.

White geese: From the first Saturday in November extending for a period of 86 days (Regular Season) and from the first Saturday in February extending for 16 days (Late Season). During the Late Season, hunting is only permitted on private lands with the permission of the land owner under provisions of Section 2016. Up to 15 geese. Possession limit triple the daily bag.

Proposed Changes and Analysis

- Add Small Canada Geese to the Regular Season in the Northeastern California Zone.

  The existing regulation only identifies Large Canada geese under the heading of "Regular Season". Small Canada geese were inadvertently omitted from that section when white-fronted goose seasons were modified in prior year rulemakings. Dark geese, by definition, include both Small and Large Canada geese, and white-fronted geese. Dark geese remained listed under the heading of "Daily Bag and Possession Limits" but were removed from the heading of "Regular Season" to accommodate the modified white-fronted goose seasons. This recommendation is to clarify the intent of the regulation and to maintain the hunting season for Small Canada geese in the zone.

- Add Small Canada Geese to Season in the Klamath Basin Special Management Area.

  See analysis above for justification. This recommendation is to clarify the intent of the regulation and to maintain the hunting season for Small Canada geese in the special management area.

- Open the Late Season for white geese two weeks after the close of the Regular Season in the Imperial County Special Management Area.

  The existing regulation opens the Late Season one week after the close of the Regular Season. The proposed change is intended to allow private land owners to use hunting as a tool to disperse geese and minimize depredation when the greatest concentration of white geese are present.

- Allow five additional days for falconry-only season in the Balance of State Zone and two additional days of falconry-only season in the Southern San Joaquin Valley Zone

  The existing regulations do not use all 105-days available in the stated zones and is intended to provide opportunity to falconers outside of the general hunting season (eliminates conflict with gun season) as discussed between the Department and the California Hawking Club on June 18, 2018. This recommendation maintains a 100-day general duck season length and a traditional Saturday opening day.

POLICY CONSIDERATIONS

The legislature formulates laws and policies regulating the management of fish and wildlife in California. The general wildlife conservation policy of the State is to encourage the conservation and maintenance of wildlife resources under the jurisdiction and influence of the State (Section 1801, Fish and Game Code). The policy includes several objectives, as follows:

1. To provide for the beneficial use and enjoyment of wildlife by all citizens of the State;
2. To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to man;
3. To provide for aesthetic, educational, and non-appropriative uses of the various wildlife species;
4. To maintain diversified recreational uses of wildlife, including hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with public safety, and a quality outdoor experience;
5. To provide for economic contributions to the citizens of the State through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the State, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resource;
6. To alleviate economic losses or public health and safety problems caused by wildlife; and
7. To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the above-state objectives.

With respect to migratory game birds, Sections 355 and 356 of the Fish and Game Code provides that the Commission may adopt migratory game bird hunting regulations as long as they are within the federal frameworks.

The Department has concluded that the proposed project will not have a significant adverse effect on the environment. No mitigation measures or alternatives to the proposed project are needed.

POTENTIAL FOR SIGNIFICANT EFFECTS

Previous reviews of other potential environmental effects were analyzed extensively in previous environmental documents. The analysis of these fifteen factors regarding

migratory game bird hunting were examined in the 2006 Final Environmental Document for Migratory Game Bird Hunting of Waterfowl, Coots, and Moorhens (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811) and certified by the Fish and Game Commission. The modifications proposed are to increase hunter opportunity and reduce depredation of some goose populations that winter in California. The Department concludes that the proposed project and existing hunting regulations will not cause significant adverse effects on the factors analyzed in the 2006 FED and summarized below.

EFFECTS OF HABITAT DEGRADATION

Breeding Areas

The 2006 analysis was presented on page 100 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). The primary impacts on breeding waterfowl from agriculture are the cultivation or tillage of nesting cover (Higgins 1977, Kirsch 1969, Milonski 1958). A secondary effect of the agricultural process is the tillage of lands right up to the edges of ponds or other water sources, which effectively eliminates brood rearing habitat. These activities in the prairies are especially prevalent in years of drought where farmers are able to intensively farm all of a wetland basin.

In the primary duck production areas of Canada, there is greater opportunity during drought periods for intensive farming and greater demand for available forage for cattle. Unfortunately, waterfowl must compete for the same resources. Agriculture does not generally impact breeding habitats for the majority of goose populations, because most goose nesting occurs in undeveloped areas of the arctic.

Wintering Areas

The 2006 analysis was presented on page 101 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). Wetland habitats in California have been reduced from an estimated five million acres to less than 450,000 acres at present. Most of these wetlands have been converted to agricultural uses, but urban developments have also reduced the wetland acreage in California. In the critically important Central Valley, about 70 percent of the remaining acreage is in private ownership and managed primarily as duck hunting clubs.

Some of the agricultural areas continue to provide habitat of value to waterfowl through the availability of waste grains and the provision of nesting cover. However, certain agricultural activities, such as fall plowing, can reduce food availability for waterfowl.

Habitat conversions by humans have reduced the habitat available for waterfowl. These conversions take place over a period of time, such that substantial habitat losses during the period of the proposed project are not likely to occur and act in a cumulative manner with the hunting of waterfowl, coots and moorhens in California that would result in significant adverse effects to the environment.

EFFECTS OF DISEASES, PESTICIDES, AND OTHER CONTAMINANTS

The 2006 analysis was presented on page 101 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). Diseases, pesticides and other contaminants will likely cause the death of waterfowl, coots, moorhens, and common snipe in California. Even though some losses to disease can be in the tens of thousands of individual birds, these losses are small relative to the populations present in the State. Accordingly, the Department concludes that the combination of the proposed project and existing regulations and potential losses to diseases and other contaminants will not result in a significant adverse impact to waterfowl, coot and moorhen populations in California in 2019-20.

EFFECTS OF ILLEGAL HARVEST

The 2006 analysis was presented on pages 110 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). The Department currently has a staff of about 430 game wardens stationed throughout the State. The Department analyzed waterfowl-related citations to estimate the extent of waterfowl mortality occurring as a result of illegal take of waterfowl in California. The level of illegal harvest is difficult to determine (USDI 1988a:29–30). In an attempt to model the possible extent of illegal harvest, the Service compared known survival rates of mallards against known hunting mortality (USDI 1988a). Estimated average annual survival rates are 66 percent and estimated hunting mortality is 18 percent (based on recoveries of banded birds), all other forms of mortality would thus equal 16 percent of the population. Since other mortality factors are known to exist (disease, predation, starvation, weather), it would seem that illegal harvest is considerably less than 16 percent and is probably not a significant portion of the annual mortality of mallards (USDI 1988a).

EFFECTS OF SUBSISTENCE HARVEST

The 2006 analysis was presented on page 112 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811).

Native and nonnative peoples living in remote areas of Alaska and Canada are dependent on migratory birds and other wildlife for subsistence. They take birds and eggs during spring and summer for food (USDI 1988a:26). These levels of harvest do not appear to be acting as a cumulative effect in conjunction with current hunting, because in general, the populations of migratory birds that are being monitored continue to increase. In particular, goose populations affected by this project are growing and some are at or near record levels.

EFFECTS OF HARVEST OUTSIDE UNITED STATES

The 2006 analysis was presented on page 113 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). The harvest of waterfowl in areas outside of California is easier to quantify than to determine what specific effects it has on California's migratory and resident populations because of mixing of different populations on the winter grounds. Harvest in two areas, Canada, where the majority of California's waterfowl originate, and Mexico, where segments of some populations winter, could act in addition to the harvest in California.

This information identifies the need for migratory game bird management to be conducted on a flyway, multi-flyway, or population basis. The total harvest of waterfowl throughout North America results in a decrease in the number of waterfowl in that year. Issues, such as subsistence harvest in Alaska and Canada and the harvest of birds outside the United States, clearly identify the need for a comprehensive perspective. The establishment of framework regulations by the Service addresses this issue by modifying hunting regulations in response to long-term population fluctuations. The Department concludes that the combination of the increased California harvest from this proposed project and harvest outside the State will not result in significant adverse impacts to migratory bird populations.

EFFECTS OF MAJOR DEVELOPMENT PROJECTS

The 2006 analysis was presented on page 115 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). Migratory game bird habitat will continue to be altered in California as the human population increases. However, strong enforcement of State and Federal laws, such as the Clean Water Act, as well as Commission policy of no net loss of wetlands, will help to minimize any adverse effect. Changes in agricultural policies at the national level may also affect the quantities of waste grain available to some species of migratory game birds. Competitive urban needs for water, especially as it relates to rice production, may affect waterfowl food supplies in the future. This will be especially prevalent when drought conditions return.

EFFECTS ON LISTED SPECIES

The 2006 analysis was presented on page 91 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). The Department is charged with the responsibility to determine if any hunting regulations will impact threatened and endangered species. It complies with this mandate by consulting internally and with the Commission when establishing migratory game bird regulations to ensure that the implementation of the proposed project and existing hunting regulations do not affect these species. The Department has concluded that, based on conditions of the proposed project and existing hunting regulations, differences in size, coloration, distribution, and habitat use between the listed species and legally harvested migratory game birds, the proposed project will not jeopardize these species.

EFFECTS ON MIGRATORY BIRD HABITATS

Habitat Protection Effects

The 2006 analysis was presented on page 93 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). Waterfowl, coot and moorhen hunting in California provide a positive incentive for private individuals to acquire, develop, and maintain habitat that might otherwise be converted to other uses. Habitat provided by hunters is entirely available at night as a roosting site and is partially available during the day during hunting season (during days when private wetlands are not hunted or on portions of private wetlands that are not hunted). Long-term vegetative changes may occur in areas that are managed specifically for wintering waterfowl foods. This may affect species more dependent upon climax vegetation than waterfowl, coots and moorhens, which favor early successional stages of vegetation.

Short-term Effects on Habitat

The 2006 analysis was presented on pages 93 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). Some short-term impacts of the proposed project, and existing hunting regulations such as vegetative trampling and litter in the form of spent shell casings, occur. These impacts are considered minor, and the effects on vegetation are generally reversed in the next growing season (USDI 1975:205).

EFFECTS ON RECREATIONAL OPPORTUNITIES

The 2006 analysis was presented on page 96 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). The implementation of the proposed project and existing regulations will result in the presence of hunters, their vehicles, and their dogs in migratory bird habitats throughout the State. The enjoyment of observing waterfowl by those opposed to hunting may be reduced by some degree by the knowledge or observation of hunters in the field. Because the proposed project and existing regulations occurs for no more than 107 days in largely unpopulated areas of the State, this will not result in significant adverse environmental impacts.

EFFECTS OF METHODS OF TAKE AND IMPACTS ON INDIVIDUAL ANIMALS

The 2006 analysis was presented on page 88 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). Section 20.21, subpart C, of Part 20, Title 50, CFR, and Section 507, Title 14, CCR, stipulate the methods of hunting that are allowed by the Service for migratory game birds. The Commission, in concert with Federal law, has authorized the use of shotguns 10-gauge or smaller, muzzle-loading shotguns, falconry, bow and arrow and crossbows, and dogs for retrieval or take. Historically, these methods of take have been used on a variety of migratory game birds throughout North America. In previous regulation-setting processes, both the Service and the Commission have stipulated restrictions on equipment and methods of take which attempt to provide for reasonably efficient and effective taking of waterfowl, coots and moorhens.

EFFECTS FROM DROUGHT

Drought cycles are part of the ecological system in California and waterfowl are well adapted to dealing with low water years e.g., delaying nest initiation, re-nesting capability, and reduced clutch size. Still, multi-year droughts can reduce waterfowl populations on a local scale and a much broader continental scale. Drought conditions impact waterfowl in a variety of ways including: degraded habitat quality which creates poor breeding habitat conditions (McLandress *et al*. 1996), lower food production (both natural and agricultural) which can limit the ability of birds to migrate and breed successfully (McWilliams *et al.* 2004), as well as expose large portions of waterfowl populations to disease. This section summarize potential impacts that drought may have on waterfowl throughout the annual cycle in California.

California is an area of continental importance for waterfowl during various annual life history events (CVJV 2009). Winter is more significant than breeding due to the abundance of waterfowl that migrate here from northern breeding areas (Bellrose 1980). Stresses encountered on wintering areas can have carry over effects during spring migration or the breeding season, which ultimately can limit populations (Klaassen 2002, Inger *et al.* 2008). It is critical that adequate habitat for waterfowl is provided during winter.

Breeding

Female ducks find a mate on wintering areas and breed where they were hatched because of high natal fidelity (Rowher and Anderson 1988). Critical components to when and where a hen will nest are available brood water and adjacent upland habitat. In dry years females may leave their natal area and migrate to areas with better quality habitat (Johnson and Grier 1988). Females need time in a location to build energy stores such as protein which is typically associated with aquatic invertebrates (Krapu 1974). Egg formation and laying will be delayed until conditions are adequate (Ankney and Alisauskas 1991). Early in the breeding season many species of ducks delay nest-initiation in response to drought. During periods of severe drought many species of waterfowl may not breed at all. If a rapid decline in water levels occurs midway into nesting or during incubation females may desert their nests (Smith, 1971). By not breeding when conditions are poor, birds enhance their survival and their probability of reproducing later when habitat conditions improve (Krapu *et al.* 1983).

Reduced recruitment can occur when ducks travel great distances to find adequate habitat conditions for nesting or re-nesting because energy reserves have been depleted. Reduced recruitment can result from: choosing not to nest, smaller clutch sizes, a lower likelihood of laying a second clutch (Grand and Flint 1991) and later laying date which has been shown to reduce nest success and brood survival in some species (Dzus and Clark 1998). Further, females that migrate out of their natal area may also have a higher mortality rate due to increase susceptibility to predation in unfamiliar areas. Reduced recruitment and adult survival could decrease short-term population levels and if poor habitat conditions persist for subsequent years, reduce long term population levels. An adaptation to drought is in years of good habitat conditions, hens can raise numerous broods giving waterfowl populations the ability to recover quickly (McLandress *et al.* 1996).

Critical breeding areas for ducks in California as identified by the Department's breeding population survey for waterfowl (Figure 3-A) are the Sacramento Valley, San Joaquin Valley Grasslands, Suisun Marsh and high desert region of Northeastern California. Figures are for mallards because they make up the majority of the breeding duck population in California (see Figure D-4). Breeding population numbers in the Central Valley (i.e. Sacramento and San Joaquin valleys) are correlated to precipitation as well as recruitment from previous years (Figure 3-B and C). Breeding mallard populations in northeastern California however, do not follow precipitation trends (Figure 3-D) indicating that other factors may be impacting duck production and breeding population trends in that region. The

statewide breeding population of mallards has remained relatively stable except for northeastern California where the population trends are decreasing. The cause of this decline is unknown but speculated to be the lack of adequate brood water in early spring and the increase in invasive plant species (e.g. *Lepidium sp*.) throughout the area (Dave Mauser, Klamath Basin NWR personal communication).

Another breeding population indicating a decline is Canada geese that nest in northeastern California. Historically, Canada geese nested in this region in larger numbers but have declined considerably (Figure 4). Climate change is speculated (i.e. dry conditions over the long term; NOAA unpublished data) to play a significant role in the decline but no analysis or studies has been conducted (Melanie Weaver CDFW personal communication). The Department will include an analysis of possible climate change impacts as well as a survival analysis from Department leg banding data in an upcoming management plan for this population.

Molting

During late July, male ducks will typically migrate to a large permanent water marsh to molt while females follow soon after nesting in August. Like nest site fidelity, ducks will molt in the same location as previous years (Yarris *et al.* 1994). One study has indicated that 60 percent of mallards that breed in the Central Valley will migrate 280 miles to northeastern California to molt while 25% molt in marshes in the Central Valley (Yarris *et al.* 1994). Molt is an extremely vulnerable time for ducks because they become completely flightless for 30–40 days. Marsh water levels are critically important during the molting period and must be maintained or birds could be subject to depredation by mammalian and avian predators (Arnold *et al.* 1987).

Avian botulism

Botulism outbreaks typically occur in marshes with warm water, little flow, high organic load (rotting vegetation) and high amounts of algae (Rocke and Samuel 1999). Botulism is a bacterium that naturally occurs in wetland environments and persists in marshes with histories of outbreaks due to the release of spores into the environment. Ducks are infected by ingesting the bacterium and become paralyzed, eventually dying. Duck carcasses attract flies which lay eggs that produce maggots that in-turn eat the flesh of the carcass and consume botulism spore. Maggots drop into the water and are eaten by ducks in the marsh thereby escalating mortality events (Rocke and Samuel 1999). Outbreaks of avian botulism (Fleskes *et al.* 2010) often coincide with the molt cycle of ducks and the brood rearing stages of late nesting duck species. Many studies have been conducted to better understand the cycle of botulism and inform managers of how to prevent or minimize outbreaks

In California, botulism outbreaks have been reported in every region of the state however, frequency is not well known due to reporting inconsistencies (Figure 5; USGS National Wildlife Health Center personal communication). A robust analysis on this disease data is not possible because of the reporting inconsistences and the

numerous factors possible that may have caused the outbreaks. In some years die-offs can be quite severe (Figure 5). Botulism outbreaks can kill large numbers of hens, broods and molting ducks (Fleskes *et al.* 2010).

During drought summer water allocation is reduced for managed wetlands in the Central Valley and the Klamath Basin in northeastern California. Decreasing the number of flooded wetlands increases concentrations of waterfowl, thus raising the chance of an outbreak and more birds being affected. Breeding mallards throughout California molt in the Klamath Basin. The Klamath Basin experiences botulism annually, even during normal water years (Figure 5-C). During drought years the potential for a high mortality event is great.

Wintering Waterfowl

Waterfowl migrate from northern latitudes to California beginning in August. Multiple stopover sites are used during migration to rebuild energy reserves. The Klamath Basin in northeastern California is one of the most important waterfowl stopover sites during fall and spring for waterfowl in the Pacific Flyway (Bellrose 1980). Peak numbers of waterfowl are seen on major wintering areas south of the Klamath Basin by December.

During early January, the Department and the Service and conduct the Midwinter Waterfowl Survey. This survey has been conducted since 1953 and has provided managers with midwinter indices of waterfowl species. During midwinter California supports 66 percent of all ducks (excluding mergansers; based on long term average 1955–2014) in the Pacific Flyway, 40 percent of which occur in the Sacramento Valley. Of total waterfowl in the Pacific Flyway (i.e. geese, ducks, swans, coots and cranes), California supports 73 percent, the Sacramento Valley alone supports 43 percent (Olson 2014, Department unpublished data). California waterfowl distribution based on this survey indicates the Sacramento Valley harbors 60 percent of total waterfowl, the San Joaquin has 20 percent, and the Delta, Suisun Marsh, northeastern California combined hold 10 percent of total waterfowl.

Sensitive wintering populations

Sensitive waterfowl subspecies also occur in California during winter. Tule greater white-fronted geese are monitored by the Department and Service through telemetry and population surveys throughout the winter in the Sacramento Valley, the Delta and northeastern California. This subspecies of white-fronted goose uses permanent marshes early in winter and begins to feed in rice fields during midwinter. The bulk of the Tule population overwinters (November to February) adjacent to and on the Sacramento National Wildlife Refuge Complex. A special management area that has a reduced season length and bag limit has been maintained in the Sacramento Valley for this population compared to the rest of the state. Department staff monitor harvest by actively measuring all greater white-fronted geese at check stations on the Sacramento National Wildlife Refuge Complex.

This population could be negatively impacted by poor body condition caused by limited habitat, particularly reduced rice decomposition flooding.

Wintering waterfowl habitat

Since the implementation of the NAWMP (USFWS 1986) and the subsequent initiation of the Central Valley Joint Venture (CVJV 1990), the wetlands of the Central Valley have fluctuated in size and quality (Fleskes *et al*. 2005, CVJV 2009). Wetland acres as of 2006 were estimated to be 205,900. Current wetland acres are being calculated as there have been a number of large easement properties acquired since 2006. The amount of wetland acres as well as the quality have increased since the last update (i.e. moist soil management and infrastructure).

Additionally, since 1996 changes in post-harvest rice straw decomposition have added an estimated 209,000 acres of flooded rice for wintering waterfowl in the Sacramento Valley (Garr 2014). Increased post-harvest flooded rice and increased wetland area is speculated to be the cause for the increasing densities of waterfowl seen in the Sacramento Valley relative to other areas on the midwinter survey (Fleskes and Yee 2005). Recent body condition studies of numerous wintering waterfowl species have improved significantly (Ely and Raveling 1989, Miller 1986, Thomas et al. 2008, Skalos *et al*. 2011) particularly within the Sacramento Valley. Numerous duck and goose species have changed their roosting and feeding habits considerably because of the increase in water on the landscape (Fleskes et al. 2005). For example, prior to post-harvest flooded rice Pacific greater white-fronted geese traveled an average of 17.5 miles from roost to forage areas. This distance has been reduced to 15 miles (14%) because the proximity of undisturbed roost areas (Ackerman et al. 2006). Increased body condition (Skalos *et al*. 2011) combined with undisturbed roost areas (Ackerman et al. 2006) has probably been a major contributor to the recovery of Pacific greater white-fronted geese since the record low in the mid 1970's (USFWS 2018b; Pacific greater white-fronted goose population indices). Waterfowl and non-game waterbird species have been known to use flooded agriculture in the Sacramento/San Joaquin Delta region (Shuford 1998) as well as the Tulare Basin in the San Joaquin Valley (Fleskes *et al*. 2013). Reduction of post-harvest agricultural field flooding because of drought in these regions could have a large impact on wintering waterfowl populations because most of the natural marsh habitat has been eliminated (Gilmer et al. 1982).

The CVJV has modeled the food resource needs of wintering ducks in California. The CVJV estimated that California currently has an adequate supply of food resources for all waterfowl species during winter. The drought model scenario decreased the total winter flooded wetlands from an estimated 197,200 to 148,000 acres and flooded rice from 305,000 to 135,000 acres in the Central Valley. Flooding rice for decomposition was assumed to be limited and at least 136,000 acres of the dry acreage would be harvested and not deep tilled post-harvest (therefore accessible). In this scenario energy available to ducks would be reduced to below adequate levels by mid-January (CVJV 2014).

Waterfowl can make up energetic shortfalls from limited food resources (Skalos et al. 2011) on wintering areas during migration if the adequate food resources are

provided on stopover sites (Bauer *et al*. 2008). If the Central Valley has limited food resources for waterfowl, the CVJV speculates that further stress would be applied to waterfowl populations migrating through the Klamath Basin during spring due to the ongoing water allocation issues in that region (CVJV 2014).

Avian cholera

Avian cholera (*Pasturella multocida*) is a common winter bacterial infection in waterfowl. This disease agent occurs naturally in waterfowl populations and particular species (e.g. Lesser snow geese, Ross's geese, mute swans) tend to be reservoirs for cholera (Samuel et al. 2005, Pedersen *et al*. 2014). Environmental and physiological conditions that stress (e.g. prolonged cold temperatures, wind, precipitation, inadequate food resources and injury) birds tend to influence the expression of this disease. Blanchong et al. (2006) found that highly eutrophic water conditions are correlated to cholera abundance in wetlands. These conditions would be promoted in years of drought due to slow flow-through in wetlands. Eutrophic conditions would also be exacerbated by large concentrations of waterfowl defecating in wetlands, agricultural runoff (i.e. cattle and fertilizer) or other upstream sources of nutrients. This study also cited the increased abundance of cholera in wetlands with higher protein concentrations. Increased protein concentrations were correlated with the number of dead bird carcasses found emphasizing the need for monitoring and removal to stem outbreaks.

Figure 6 indicates the frequency and intensity of avian cholera mortality events in California as reported to the USGS Wildlife Health Center. Cholera outbreaks tend to be more common in the Sacramento Valley and northeastern California. This may be from colder temperatures experienced during winter but more likely from the high densities of waterfowl (particularly *Chen sp*.) at the time of the outbreak. Cholera outbreaks have the potential to be very severe; an outbreak in the Salton Sea during 1991 claimed an estimated 155,000 birds.

Concerning sensitive waterfowl populations Greater white-fronted geese (i.e.Tule geese) seem to be resistant to outbreaks of avian cholera (Blanchong 2006).

Hunter harvest impacts on waterfowl populations

Wintering numbers of mallards are relatively low compared to other wintering species and the population of mallards that breed in the state. The 2018 California midwinter survey indicate 1,486,970 Northern pintail, 602,930 Northern shoveler, 595,890 American wigeon, 508,490 American green-winged teal, compared to 211,400 mallards counted on the survey. Nonetheless, mallards are the most sought after species by hunters by proportion of population (USFWS 2018c).

Currently, little evidence supports hunter harvest having an additive effect on duck population trends (Afton and Anderson 2001). Rather, available breeding habitat (i.e. nesting habitat and brood habitat) is the driving factor behind most duck population changes. Even in absence of hunter or other mortality factors, density dependent factors on breeding areas (available habitat, predator response etc.) drive duck populations (Newton 1994, Clark and Shulter 1999, Viljugrein et al.

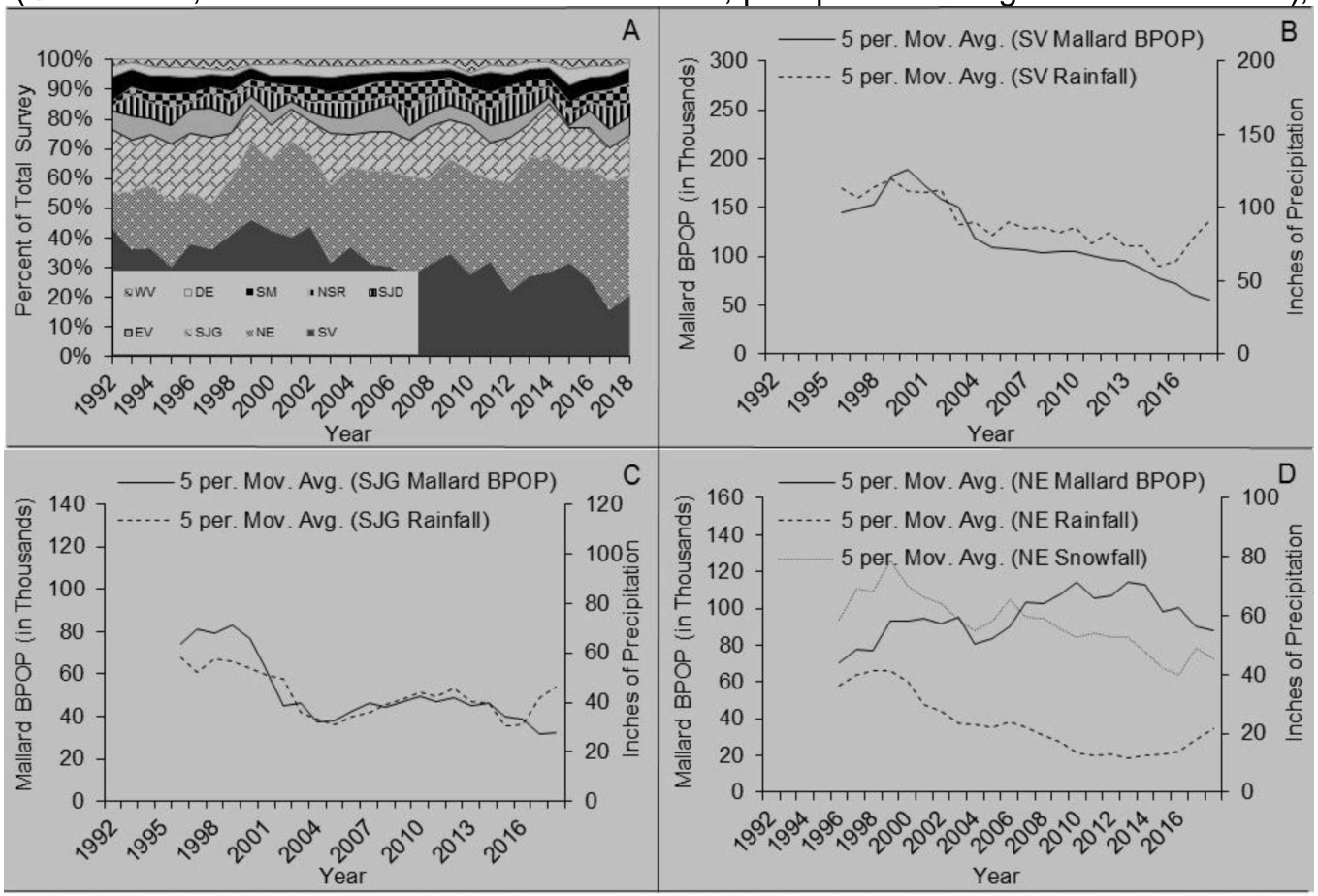
2005). Figure 7 compares hunter harvest in relation to the breeding population of mallards in California. Harvest has very little correlation (Chart A; R^2=0.11, Chart B; R^2=0.25, respectively) with subsequent breeding population levels.

A number of goose populations have increased substantially in the Pacific Flyway in recent years, with continued hunting and more liberal season and bag limits. Examples are the Pacific greater white-fronted goose and the Ross's goose. Pacific greater white-fronted geese have increased from 75,000 in 1978 to 650,000 by 2010. Surveys conducted in the 1960's estimated Ross's geese at 10,000 while the current population estimate is 700,000. When goose populations are low they are vulnerable to over exploitation by sport hunting. Ducks can breed successfully at age one while geese will breed at age two to three (refer to "K selection"). In the past, goose populations have been subject to overexploitation by predators (e.g. Aleutian Canada goose; PFC 2006[b]) or overharvest by subsidence or sport hunting (Pacific greater white-fronted goose; Pamplin 1986). Recovery actions have successfully increased these populations.

The Service implemented a general harvest strategy for setting duck framework regulations that regularly occur in California and are sought after by hunters (as explained in the Adaptive Harvest Management Section under Background and Existing Conditions). These harvest management strategies ensure duck populations are healthy over the long-term while providing hunting opportunity consistent with the long-term health. As a participant of the Pacific Flyway Council, the Department reviewed and voted to adopt these management strategies for establishing seasons and bag limits. In addition, the Department participates in the monitoring of various populations, both wintering and breeding. If defined populations goals are not met than bag or season limit reductions are triggered. For example the California Breeding Population Survey is used in the Adaptive Harvest Management strategy that establishes regulatory packages for most duck species for all 11 states in the Pacific Flyway.

The Pacific Flyway is currently working on revising the management plan for Tule white-fronted geese. The plan will incorporate population estimates derived from Department ground surveys, telemetry data and public hunt area harvest from check station measurements. These management actions will ensure that population levels of waterfowl species in California are being monitored and hunter harvest is sustainable over the long term.

Figure 3. Proportion of California breeding population by area (Chart A) and area specific mallard BPS estimates with total rainfall (Charts B-D, mallard on left Y axis in thousands; precipitation on right Y axis in inches), 1992–2018



[1]Total precipitation values derived January to April prior to breeding season using Lincoln, Nicolaus, Stonyford, Bango, Paradise, Thomas Creek weather statiions.
[2]Total precipitation values derived January to April prior to breeding season using Green Springs and Stockton weather stations.
[3]Total precipitation values derived January to May prior to breeding season using Cedarville, Doyle, Juniper Creek and Tulelake weather stations.
[4]Total precipitation values derived January to May prior to breeding season using Adin Mountain, Cedar Pass, Dismal Swamp and Independence SNOTEL stations..

Figure 4. California Department of Fish and Wildlife, Northeastern California Canada Goose Survey 1950–2013.

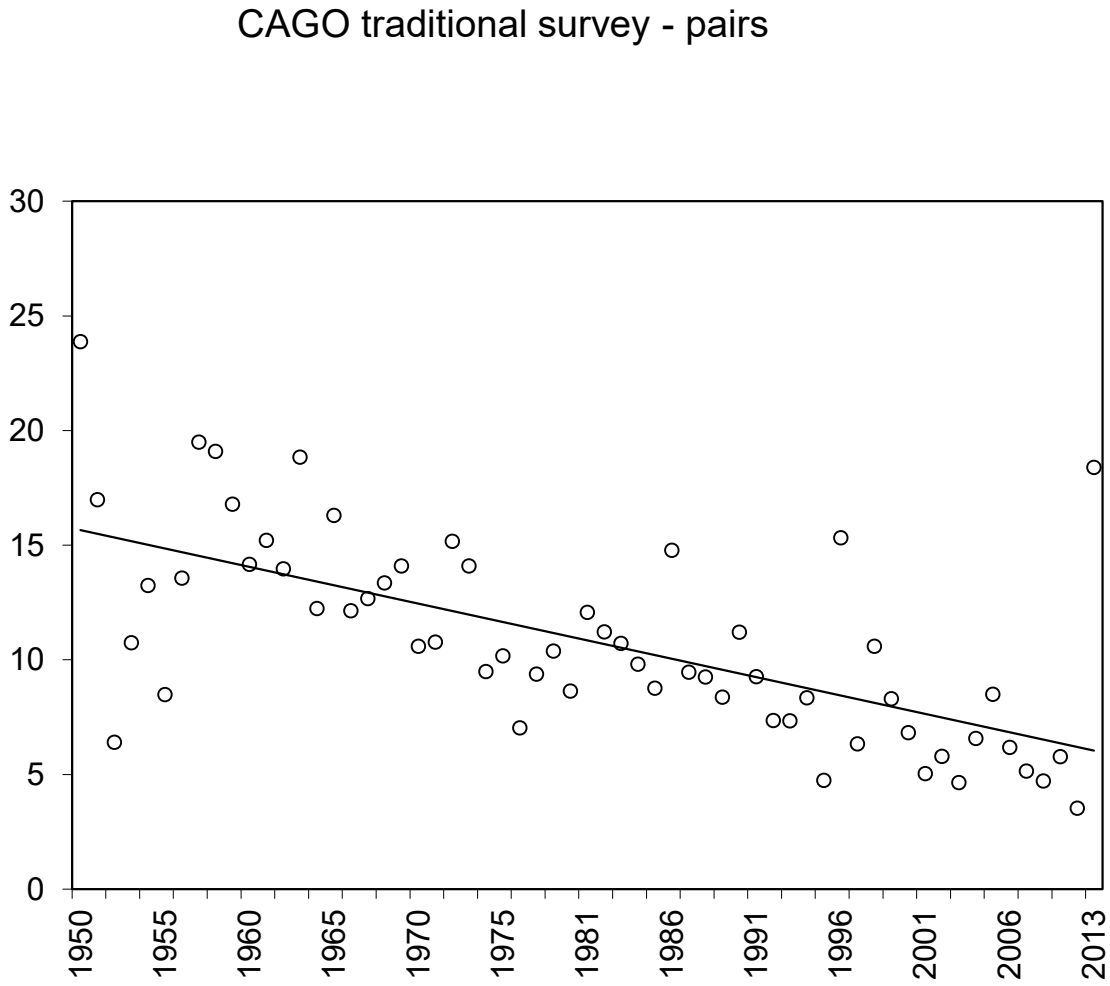


Figure 5. Waterfowl mortality from botulism by area, California 1970–2017.

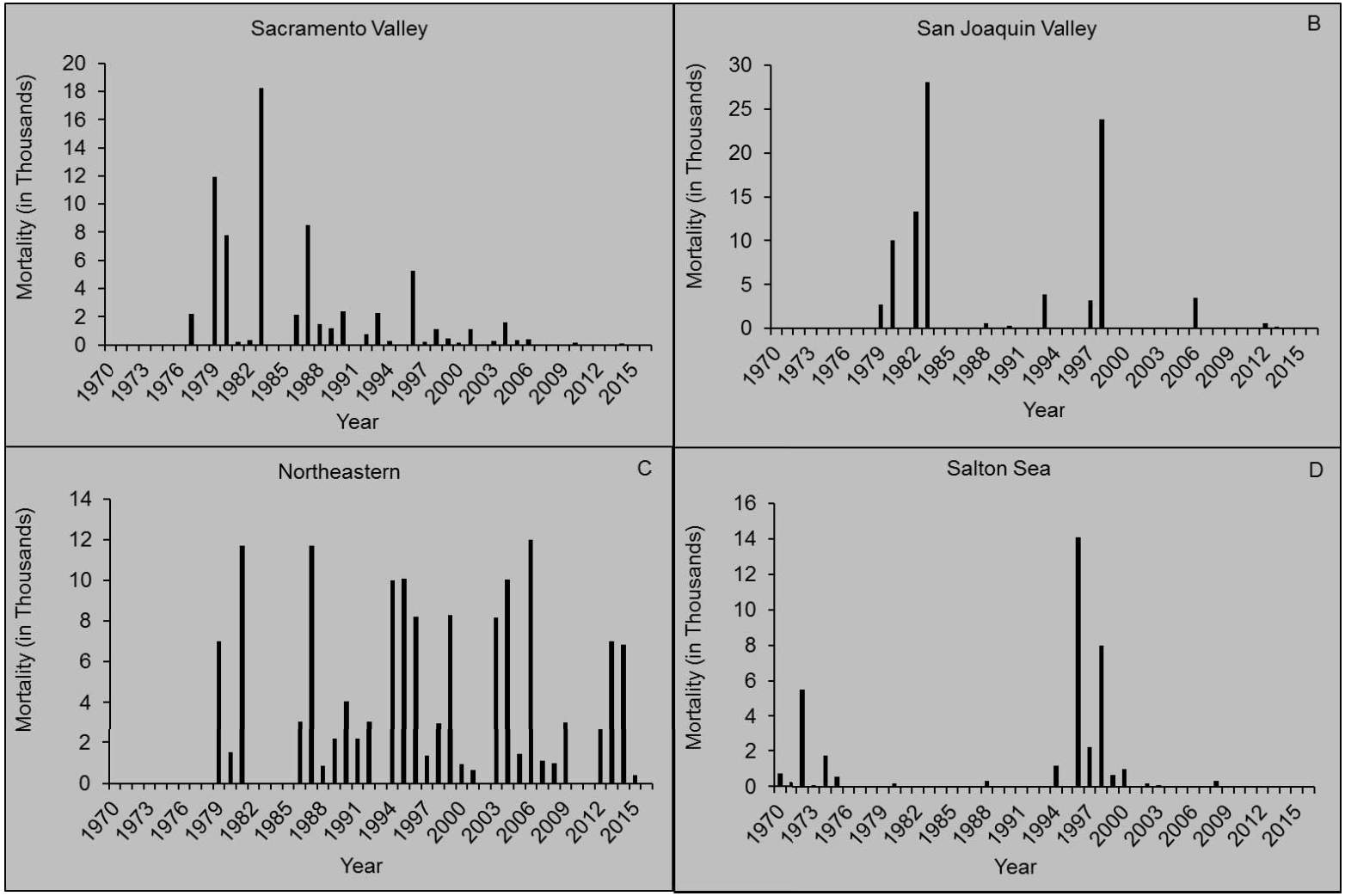


Figure 6. Waterfowl mortality from avian cholera by area, California 1970–2017.

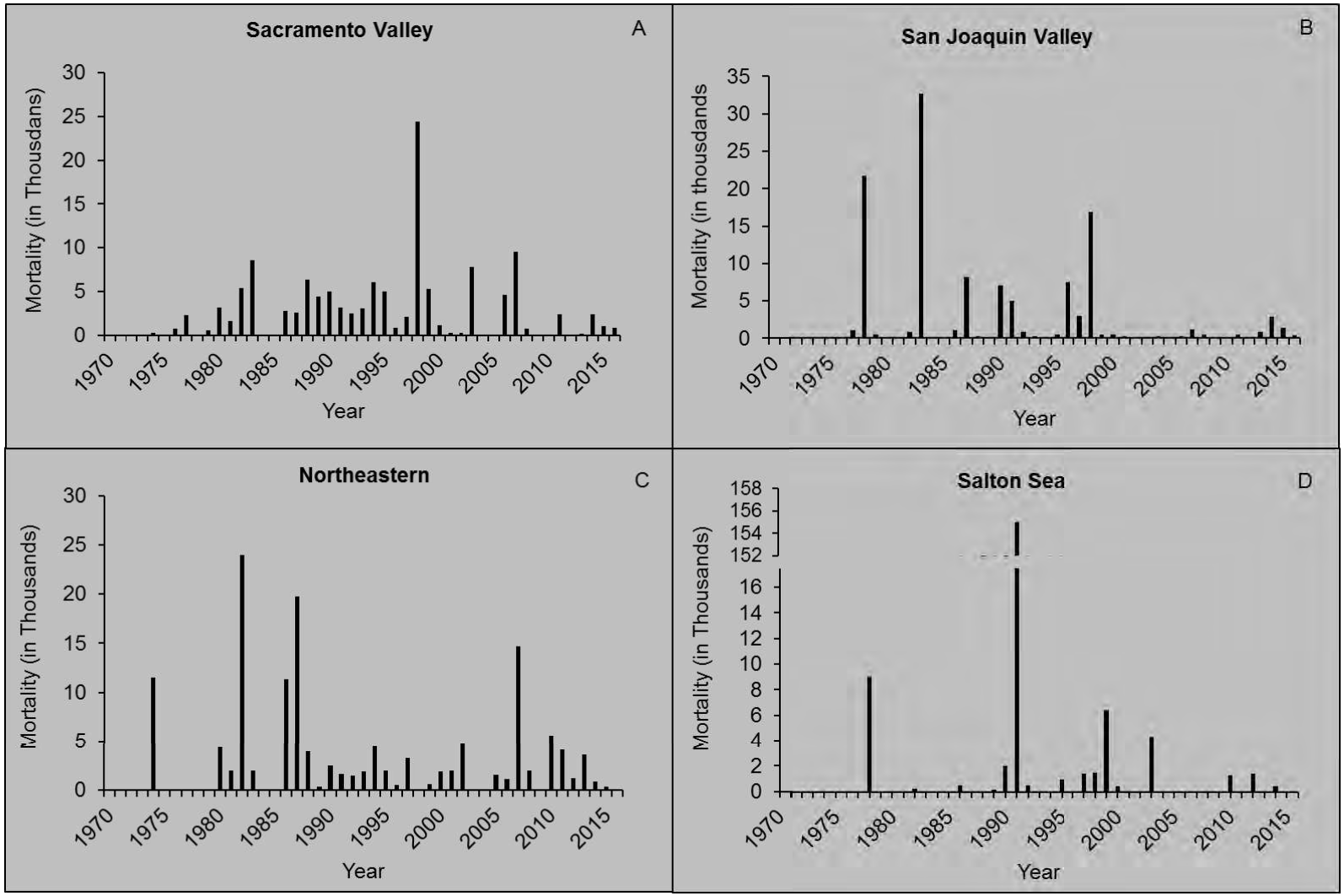
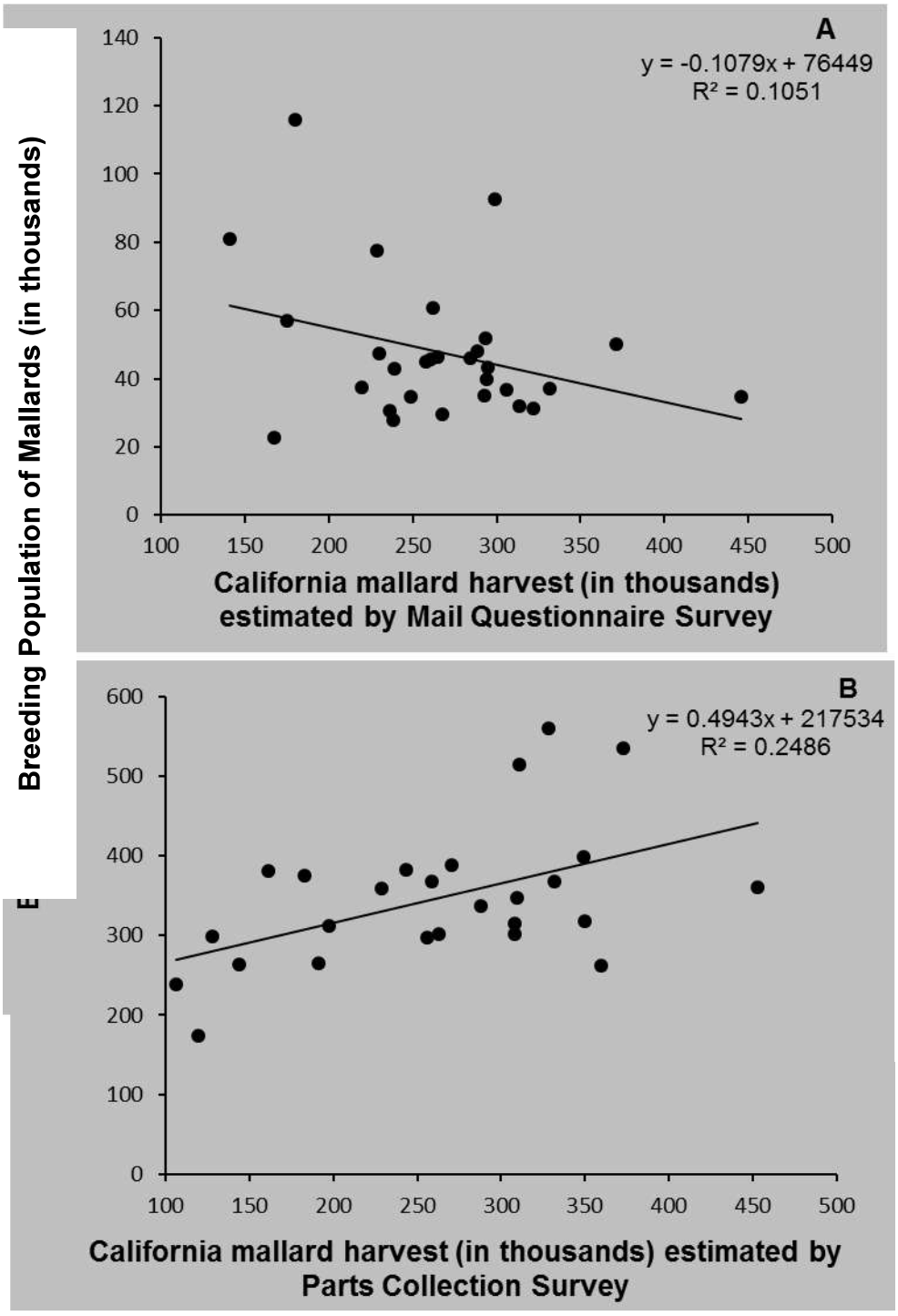


Figure 7. California breeding mallard populations estimates vs hunter harvest: 1960–1990 (Chart A), 1991–2017 (Chart B)



CUMMULATIVE IMPACTS

Short-term uses and Long-term Productivity

The 2006 analysis was presented on page 97 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). The proposed project and existing hunting regulations will result in the temporary reduction of waterfowl, coot and moorhen populations and the use of nonrenewable fuels by hunters and the Department in the assessment of migratory game bird populations and the enforcement of the regulations. On the other hand, the Service concluded (USDI 1975:215) that the issuance of annual hunting regulations contributes significantly to the long-term productivity of the migratory game bird resource and their habitats, because hunting is allowed for only a few species of migratory birds for a limited period of time, and the revenues from hunting are important in the acquisition and management of migratory game bird habitats. Therefore, the project and existing regulations actually enhances long-term productivity of migratory game birds and results in no significant adverse impact on long-term productivity.

Growth Inducing Impacts

The 2006 analysis was presented on page 98 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). Because the hunting of migratory game birds is undertaken for a limited period and generally occurs in sparsely populated regions of the State, it is not likely to add to the growth in population in California or result in large-scale developments in any particular city or area. Overall numbers of migratory game bird hunters are declining, and because these numbers are declining, there is not likely to be an additional demand for housing in the specific areas in which hunting will occur. Therefore, the project and existing hunting regulations will not result in significant adverse impacts through growth.

Significant Irreversible Environmental Changes

The 2006 analysis was presented on page 98 (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). The proposed project and existing hunting regulations would result in the continued commitment of energy resources by biologists and wardens in data collection, regulation promulgation, and law enforcement, and by hunters traveling to hunting areas. Therefore, the project will not result in significant adverse environmental impacts through irreversible changes.

The 2006 analyses and document referenced (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811) is located and available upon request from California Department of Fish and Game, Wildlife Branch, 1812 9th Street, Sacramento, CA 95811.

CULTURAL RESOURCES

The proposed Project would modify current waterfowl hunting regulations for the 2019-20 waterfowl hunting season. The regulations governing the take of migratory game birds in California are selected by the Commission and forwarded to the Service each year. The Federal frameworks specify the range of dates, total number of hunting days, bag limits, shooting hours, and methods of take authorized for migratory game birds, statewide. The proposed Project provides continued opportunity for migratory game bird hunting via season lengths and bag limits. The regulations selected by the Commission must be within the frameworks established by the Service.

The proposed Project is statewide on both public and private lands. Hunting on public lands that have identified Tribal Cultural Resources would have restrictions or mitigation measures in place to prevent harm to Cultural Resources. There is no evidence that suggests the Project (modification or issuance of annual waterfowl hunting regulations) would cause any adverse change in the significance of a Tribal Cultural Resource; cause any change in the significance of an historical or archaeological resource; directly or indirectly destroy a unique paleontological resource site or unique geologic feature; or disturb any human remains. No Tribal Cultural Resources assessments have been conducted because the Project is not expected to impact Tribal Cultural Resources. As a result, the proposed Project would have no impact to Tribal Cultural Resources.

CHAPTER 3 – ALTERNATIVES

The three California project alternatives evaluated herein are: (1) no project – no change from the 2018-19 hunting regulations; (2) reduced season lengths and bag limits; (3) up to five additional days of general duck and goose hunting; and (4) elimination of all mechanical decoys.

Alternative 1. No project – no change from the 2018-19 hunting regulations

This alternative provides identical season and bag limit regulations as the 2018-19 seasons. Under this alternative, the addition of Small Canada geese to the "Regular Season" in the Northeastern California Zone, the addition of Small Canada geese to "Season" in the Klamath Basin Special Management Area and opening the late goose season two weeks after the close of the regular season in the Imperial County Special Management Area would not occur.

Advantages of This Alternative

Waterfowl regulations are inherently complicated and any changes may result in confusion for some members of the public. Maintaining the 2018-19 regulations for the 2019-20 season may result in less confusion to some members of the public.

Disadvantages of This Alternative

The no change alternative is not consistent with federal frameworks, including a reduction in the daily pintail daily bag limit from 2 to 1. In addition, less hunting opportunity and use of hunting as a tool to alleviate goose depredation in the Imperial County Special Management Area would be reduced.

Conclusion Regarding Alternative 1

It is unlikely that significant irreversible impacts would occur immediately or statewide as a result of selecting the no change alternative. However, this alternative was not recommended because it conflicts with Federal frameworks.

Alternative 2. Reduced Season Lengths, Season Timing and Bag Limits

This alternative provides a suite of restrictions that when taken alone or in combination are expected to reduce harvests. This alternative could be selected by the Commission based on changes in Federal frameworks or a conclusion by the Commission that reduced harvests are a better alternative than the project or existing regulations. Under this alterative, for a generalized analysis, the length of each migratory bird season could be reduced by about 50 percent. For ducks, more conservative Adaptive Harvest Management regulatory alternatives (86 or 60 days) could be used. For brant, the 37-day season would be reduced to 19 days and for most other geese the season would be reduced from either 107 or 100 days to 51 days.

The AHM alternatives for the Pacific Flyway include total duck bag limits that range from 4 to 7 with differing restrictions on mallards and hen mallards. Other bag limit reductions considered in this alternative include a reduction from as many as 20 to as few as 1 geese depending on zone; a reduction in brant from two to one; and a reduction in the coot limit from 25 to 12 birds per day. Additionally, species-specific regulations, for pintail, redheads, canvasback or scaup could be further reduced under this alternative.

Advantages of This Alternative

Selection of Alternative 2, reduced season lengths, timing and bag limits, would reduce total harvest, although the magnitude of this reduction is not precisely predictable. This alternative has advantages only if the levels of harvest are suppressing populations. In 2017-18, the estimated retrieved harvest in California was 1,305,600 ducks, 239,000 geese and 10,300 coots. If harvest regulation restrictions cause a larger than expected decline in hunter participation, harvests might be reduced by more than 50 percent. If, as experienced in the 1989-90 season, there is a drop in hunter participation but fall flights are larger or contain higher percentages of juveniles than are expected, harvests would probably not decline by 50 percent. If harvests declined by exactly 50 percent; approximately 652,800 ducks, 119,500 geese, and 5,150 coots would not be harvested in California. If waterfowl, coots and moorhens have access to habitat of sufficient quality and quantity and these populations are being suppressed due to the levels of harvest previously experienced, populations might increase in following years as a result of the selection of this alternative. This alternative would provide recreational opportunity for hunters and meet one of the goals of the Conservation of Wildlife Resources Policy (Fish and Game Code, Section 1801), which is to include hunting as part of maintaining diversified recreational uses of wildlife.

Non-hunting opportunities to view migratory birds would not differ substantially from the proposed project, because while this would increase viewing days on hunting areas,

these areas are a small percent of total waterfowl habitat. Reduction in possible conflicts between non-hunters and hunters would be a likely result of this alternative.

Disadvantages of This Alternative

Harvest restrictions for waterfowl, coots and moorhens would probably be a disincentive for many of those private landowners who provide habitat through flooding of seasonal wetlands and agricultural lands during the fall and winter. These habitats form the majority of available wintering habitat for waterfowl and wetland dependent wildlife in California *(*Heitmeyer et al. 1989*)*. Habitat provided only during the hunting season would be available for a shorter time. For many of these private landowners, the short period of time allowed for hunting may be judged to be not worth the high costs associated with providing water and managing this habitat. This would reduce the amount of habitat available for waterfowl and other wetland dependent wildlife. Overcrowding, and as a result, reduced food resources and increased losses to diseases, would be expected.

Conclusion Regarding Alternative 2

Selection of this alternative might lead to a greater decline in participation by hunters. The reductions in the number of days that waterfowl, coots and moorhens could be hunted might not be deemed to be worth the costs of licenses, stamps, travel, and entry fees. A change in season timing is not likely to significantly affect the number of active hunters. A reduction in hunter participation would result in reduced revenues to the Department and the Service which are used to acquire, manage, and maintain vital habitats. If the reduced season length resulted in a lower hunting harvest and hunting mortality was additive to natural mortality, an increase in some populations of waterfowl would be possible. However, the Department concludes that this alternative alone would not result in a significant increase in waterfowl numbers in future years.

Alternative 3. Allow up to five additional days of general duck and goose seasons in the Southern San Joaquin Valley, Southern California, and Balance of State zones by closing January 31 rather than the last Sunday in January

This alternative was requested by the public and would replace the Department's recommendation to maintain 100-day general duck and goose season and use the remaining five days for falconry-only. While in the AHM liberal regulation package, a total of 107 days of hunting is allowed for most duck species. Most goose populations that winter in California are at or above population goals which also allows a season length of 107 days (based on harvest strategies described in management plans). The

Southern San Joaquin Valley and Southern California zones use 102 days of hunting for ducks and geese; however, the Balance of State Zone uses all 107 days allowed for goose hunting while only using 102 days for duck hunting.

To estimate the potential increase in duck harvest by allowing five additional days of duck hunting when 107-day seasons are allowed, the Department conducted a regression analysis of harvest (dabbling ducks and mallards) and season length. Harvest data was obtained from the Cooperative Waterfowl Parts Collection Survey (PCS) from 2004 to 2017. The Northeastern Zone harvest data was excluded from the query because of differences in both weather and season dates. Harvest data was arranged by date and the cumulative total harvest by day for each season was calculated. Harvest data was then aggregated to derive a mean and variance for each day and generated a regression equation to predict cumulative harvest by additional hunt day for both total dabbling ducks and mallards.

Total dabbling ducks followed a curvilinear trend ($R^2 = 0.99$; Figure 8). A 5-day increase in season length is predicted to increase total dabbling duck harvest to 1,262,690 (95% CI 1,139,790 – 1,385,696), an additional 72,193 ducks representing a 5.7 percent increase.

Total mallard harvest and season length was best fit by a linear relationship with an R^2 of 0.99 (Figure 9). A 5-day increase in season length is predicted to increase the average daily mallard harvest to 2,083 (95% CI 1,665 – 2,502), similar to the previous analysis presented on page 68 in the 2006 Final Environmental Document (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811). The previous analysis estimated an increase of 2,500 per day (95% CI = 2,200 – 2,800). The slight reduction in the new analysis is a result of the overall decline in mallard harvest over time. A 5-day increase in season length would increase total mallard harvest to 218,734 (95% CI 174,810 – 262,657), an additional 11,916 ducks. This represents a 5.4 percent increase.

Analyses for predicting the increase in goose harvest were not conducted because most wintering goose populations in California are at or above their population goals (Appendix C). Bag limits have been raised considerably during the past 10 years to provide: hunting opportunity commensurate with population status, a tool to minimize depredation on private lands and to reduce population size. Onehundred-day goose seasons were maintained in the Southern San Joaquin Valley and the Southern California zones to mimic duck seasons (minimize regulation complexity) because goose hunting opportunity in those zones is negligible, especially that late in the season. Increasing the goose season length in the Southern San Joaquin Valley and Southern California zones will not affect those goose populations who have season and or bag limit restrictions (Tule greater white-fronted geese in the Sacramento Valley Special Management Area and Large Canada geese in Northeastern California).

Figure 8. California Mean Season Cumulative Dabbling Duck Harvest, 2004–2017

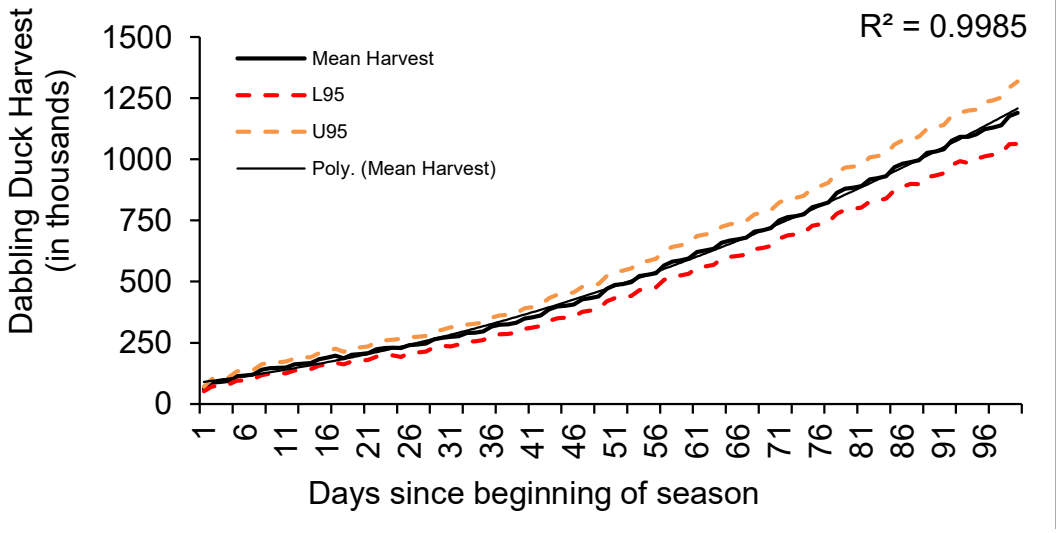
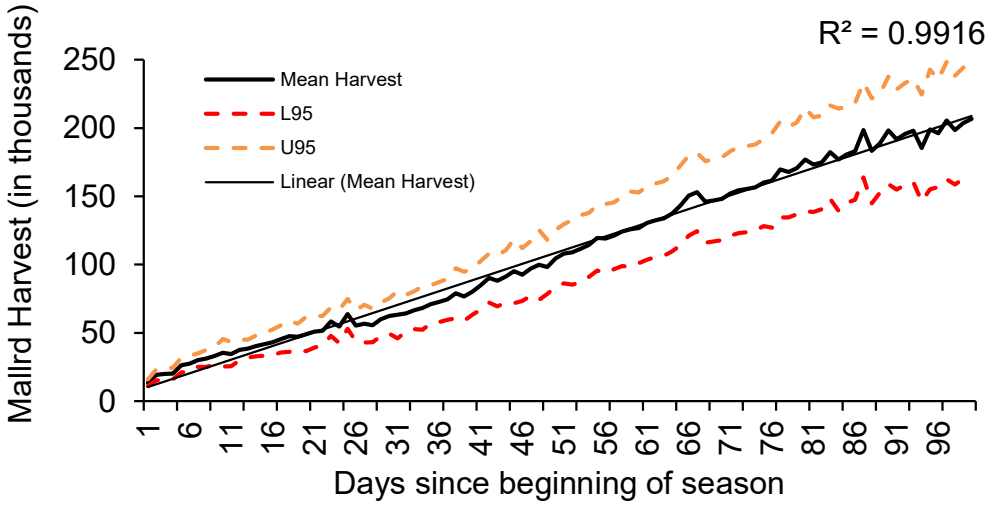


Figure 9. California Mean Season Cumulative Mallard Harvest, 2004–2017



Advantages of This Alternative

As described in Chapter 3 of the 2006 Final Environmental Document (incorporated by reference, State Clearinghouse Number 2006042115, available at 1812 9th Street, Sacramento 95811), all measures of the status and harvest of waterfowl have unmeasured degrees of uncertainty. These uncertainties are inherent due to annual changes in the system (weather, agricultural practices, predation), limitations in monitoring programs (sampling error), and the variable effort and success of hunters. An estimated harvest increase of 5% by selecting 107-day seasons will not likely negatively impact duck populations. Most hunters in California especially those in drier and more southerly portions of the State, feel that hunting opportunity is best late in the hunting season and the later closing date will provide better hunting. Many hunters feel that better hunting serves as an incentive to own and manage wetland habitats for ducks and other wildlife.

Disadvantages of This Alternative

Using up to five additional days by closing on January 31 rather than on the last Sunday in January has not been fully vetted by the hunting public or local county commissions and communities. Traditionally, most waterfowl opening and closing days occur on the weekend to allow hunting opportunities for hunters who work Monday through Friday and hunt on public hunt areas. In addition, closing January 31 for the 2019-20 season would eliminate the existing and falconry-only seasons as recommended in the Department's proposed project; the extended falconry season would have to be eliminated because the season length would exceed what is allowed under the frameworks. Falconers prefer to have a small number of days dedicated to falconry only to avoid conflicts with the general (gun) seasons. Lastly, closing January 31 while maintaining the traditional Saturday opener for the subsequent seasons requires an annual adjustment to season length for both general and falconry seasons.

For example:

Season	Traditional Saturday Opening Day	Closing Day	General Season Length	Falconry-only Season Length
2019-20	October 19	Friday, January 31	105-days	Zero
2020-21	October 24	Sunday, January 31	100-days	5-days
2021-22	October 23	Monday, January 31	101-days	4-days

Making annual adjustments to season length and closing on a fixed date rather than the last Sunday in January may not be preferred by hunters and considered confusing.

Conclusion Regarding Alternative 3

The selection of this alternative would not result in a significant adverse environmental impact and would be viewed favorably by those hunters who prefer to use the maximum allowable days. However, selecting this alternative would eliminate the 5-day falconry-only season as requested by the public for the 2019-20 season but allow up to 5-days in subsequent seasons (changes annually). This alternative would be viewed unfavorably by those hunters who prefer an established set of days and closing on the last Sunday of January.

Alternative 4. Elimination of all mechanically- and artificially-powered spinning wing decoys as a method of take.

The use of mechanical or electronic duck decoys (also known as spinning wing decoys (SWDs), “rotoducks”, “motoducks”, motion wing decoys, etc.) may lead to increases in harvest beyond those anticipated by existing bag limits and season length. Some hunters and other members of the public are opposed to the use of these devices because they believe that the devices exceed the bounds of “fair chase” and eliminate the emphasis on traditional hunting skills needed to successfully hunt ducks, and the advantages detract from the experience and dedication needed to sustain the hunting tradition.

This alternative would eliminate the use of all mechanical and artificially powered spinning wing decoys as a method of take. The Department analyzed several sources of information relative to the possible effects of spinning wing decoys and these analyses are provided in Appendix D.

Advantages of This Alternative

The evidence seems clear that spinning blade and spinning wing decoys increase harvest at the individual hunt level, and level of observed increases in harvest at the individual hunt level are not reflected in overall estimates of harvest (Appendix E). However, the role of harvest in duck population dynamics is not clearly understood and the effect of reducing harvest success at the individual hunt level may or may not result in observable changes in population parameters. Some members of the hunting public have expressed concerns that continual advances in technology ultimately detract from the traditional hunting experience and potentially may lead to a reduction in the support for waterfowl hunting. This is thought to be due to hunters becoming less dedicated to developing skills and investing in the activity to a level that generates support for conservation and potentially increasing the negative view of hunting by those that are currently not opposed to hunting. As technology continues to improve, debates such as

the one over spinning blade and spinning wing devices would continue. A new debate over each new technological advance would seem likely. Resources would continually be re-directed to assess each new technological advance.

Disadvantages of This Alternative

As detailed in Appendix D, existing analyses do not clearly establish an effect of harvest on duck population dynamics. To some unmeasured extent, the use of SWD may influence more hunters to join or remain in hunting, thereby providing support for wetland and waterfowl conservation. Commercial enterprises that develop and market these devices would likely be opposed to their regulation. There is no information regarding other duck attracting devices currently in use and there is no basis to conclude that these devices increase duck harvest. Commercial enterprises exist or may be developed to increase technological improvements for attracting ducks.

Conclusions Regarding Alternative 4

The selection of this alternative would not result in a significant adverse environmental impact. As reported in Appendix D, to date, the Department is unable to scientifically associate observed changes in duck population status, except perhaps for certain cohorts of local mallards, with the use of SWDs. The selection of this alternative would be viewed favorably by those hunters and other members of the public who are opposed to the use of non-traditional methods, but would be viewed unfavorably by those hunters who are not opposed to their use. Those commercial enterprises that develop and market these devices would likely be opposed to their regulation.

CHAPTER 4 – RESPONSE TO COMMENTS REGARDING THE PROPOSED PROJECT

In accordance with CEQA, public input and agency consultation were encouraged during the environmental review process. An NOP was provided to the State Clearinghouse, land management agencies having a key role in migratory game bird management, and all individuals and organizations which expressed an interest in migratory game bird management. No comments were received as a result of the NOP circulation.

The Department prepared a DED regarding waterfowl hunting (Section 502, Title 14, CCR). The DED was made available for public review on December 3, 2018 and again on February 5, 2019. In addition, correspondence was either emailed or letters sent to every county library for public posting and notice of the availability of the DED. Additionally, notice of availability of the DED for public review on the Department's website and was provided to the State Clearinghouse, which provided notice of availability to interested organizations, including all county governments in California as well as the Native American Heritage Commission. A formal notice letter proposing the 2018-19 waterfowl hunting regulations dated August 20, 2018, was also sent on behalf of the Department and the Fish and Game Commission to California Tribes, who requested to be notified for CEQA projects. No California Tribes requested consultation.

LITERATURE CITED

Ackerman, J.T, J. M. Eadie, M. L. Szymanski, J. H. Caswell, M. P Vrtiska, A. H. Raedeke, J. M. Checkett, A. D. Afton, T. G. Moore, F. D. Caswell, D. D. Humburg and J. Yee. Effectiveness of spinning-wing decoys varies among dabbling duck species and locations. Journal of Wildlife Management 70: 799–804.

Ackerman, J. T., J. Y. Takekawa, D. L. Orthmeyer, J. P. Fleskes, J. L. Yee and K. L. Kruse. 2006. Spatial use by wintering greater white-fronted geese relative to a decade of habitat change in California's Central Valley. The Journal of Wildlife Management 70: 965–976.

Afton, A.D and M.G. Anderson. 2001. Declining scaup populations: A retrospective analysis of long-term population and harvest survey data. Journal of Wildlife Management 65(4): 781–796.

Anderson, M. G., and L. G. Sorenson. 2001. Global climate change and waterfowl: adaptation in the face of uncertainty. Transactions of the North American Wildlife and Natural Resources Conference 66:307–319.

Anderson, D.R., and K.P. Burnham. 1976. Population ecology of the mallard: VI. The effect of exploitation on survival. U.S. Fish and Wildl. Serv. Resour. Publ. 128. 66pp.

Ankney, and R. Alisauskas. 1991. Nutrient reserve dynamics and diet of breeding female gadwalls. The Condor 93:799–810.

Arnold, T.W. and E.K. Fritzell. 1987. Food habits of prairie mink during the waterfowl breeding season Canadian Journal of Zoology 65: 2322–2324.

Batt, B. D. J., editor. 1998. The greater snow goose: report of the Arctic Goose Habitat Working Group. Arctic Goose Joint Venture special publication. U.S. Fish and Wildlife Service, Washington, D.C., USA, and Canadian Wildlife Service, Ottawa, Ontario, Canada.

Bauer, S., M. Van Dinther, K. Hogd, M. Klaassen and J. Madsen. 2008. The consequences of climate-driven stop-over sites changes on migration schedules and fitness of Arctic geese. Journal of Animal Ecology 77: 654–660.

Bellrose, F.C. 1980. Ducks, Geese and Swans of North America. Stackpole Books, Harrisburg, PA. 540pp.

Blanchong, J.A., M.D. Samuel, D.R. Goldberg, D.J. Shadduck and L.H. Creekmore. 2006. Wetland environmental conditions associated with the risk of avian cholera outbreaks and the abundance of *Pasteurella multocida*. Journal of Wildlife Management, 70(1): 54–60.

Boomer, G.S., F.A. Johnson, and G.S. Zimmerman. 2015. Adaptive harvest management: adjustments for SEIS 2013. U.S. Department of Interior, Washington, D.C. 20 pp. Available online at http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/AHM/AHM-intro.htm

Brownlee, W.C. 1985. Steel vs. lead. A ten year summary on the Murphree Wildlife Management Area. Texas Parks and Wildlife Department, Administrative Report, Federal Aid Project W-106-R. 10pp.

Burnham, K.P. and D.R. Anderson. 1984. Tests of compensatory vs. additive hypotheses of mortality in mallards. Ecology 65:105–112.

Caswell, J. H., and F. D. Caswell. 2003. Vulnerability of mallards to hunting with a spinning-wing decoy in Manitoba. Wildlife Society Bulletin 32:1297–1304.

Clark, R.G. and D. Shulter. 1999. Avian habitat selection: Pattern from process in nest-site use by ducks. Ecology 80(1): 272–287.

Conn, P. B. and W. L. Kendall. 2004. Evaluating Mallard adaptive management models with time series. J. Wildl. Manage. 68:1065–1081.

CVJV. 1990. Central Valley Joint Venture Implementation Plan – A component of the North American Waterfowl Management Plane. U.S. Fish and Wildlife Service, Sacramento, CA

CVJV. 2006. Central Valley Joint Venture Implementation Plan – Conserving bird habitat. U.S. Fish and Wildlife Service, Sacramento, CA.

CVJV. 2014. California Drought: Potential Impacts on Ducks in the Central Valley. Report. Sacramento, CA.

Drever, M. C. and R. G. Clark. 2007. Spring temperature, clutch initiation date, and duck nest success: a test of the mismatch hypothesis. Journal of Animal Ecology 76:139–148.

Dzus, E.H. and R.G. Clark 1998. Brood survival and recruitment in Mallards of relation to wetland density and hatching date. The Auk 115(2): 311–318.

Eadie, J. M., T. G. Moore and J. T. Ackerman. 2001. Experimental evaluation of the effect of mechanical wing decoys on hunting success and waterfowl response in California, 1999-2000. Technical Report to the California Waterfowl Association, Sacramento, California.

Ely, C. R. and D.G. Raveling. 1989. Body composition and weight dynamics of greater white-fronted geese. Journal of Wildlife Management 53: 80–87.

Emery, R.B. D.W. Howerter, L.M. Armstrong, M.G. Anderson, J.H. Devries, and B.L. Joynt. 2005. Seasonal variation in waterfowl nesting success and its relation to cover management in the Canadian prairies. Journal of Wildlife Management 69:3 pp 1181–1193.

Fleskes, J.P., D. A. Skalos and M.A. Farinha. 2013. Changes in types and area of post-harvest flooded fields available to waterbirds in Tulare Basin, California. Journal of Fish and Wildlife Management

Fleskes, J.P., D. M Mauser, J.L. Yee, D.S. Blehert and G.S. Yarris. 2010. Flightless and post-molt survival and movements of female Mallards molting in Klamath Basin. Waterbirds 33(2): 208–220.

Fleskes, J. P., J. L. Yee, M. L. Casazza, M.R. Miller, J. Y. Takekawa, and D.L. Orthmeyer. 2005. Waterfowl distribution, movements, and habitat use relative to recent habitat changes in the Central Valley of California: A cooperative project to investigate impacts of the Central Valley Joint Venture and changing agricultural practices on the ecology of wintering waterfowl. Final Report. U.S. Geological Survey-Western Ecological Research Center, Dixon Field Station, Dixon, CA.

Garr, J.D. 2014. The status of status of rice fields during midwinter in the Sacramento Valley California: Final Report 2014. Wildlife Friendly Farming, Colusa, CA.

Gilmer, D. S., M. R. Miller, R. D. Bauer, and J. R. Ledonne. 1982. California USA Central Valley wintering waterfowl concerns and challenges. Proceedings of the 47th North American Wildlife and Natural Resources Conference. Pgs. 441–452. K. Sabol, Editor. Washington, DC, USA.

Grand, J.B. and P.F. Flint. 1996. Renesting ecology of Northern pintail on the Yukon-Kuskokwim Delta, Alaska. The Condor 98: 820–824

Giudice, J. H. 2003. Survival and recovery of mallards and gadwalls banded in eastern Washington, 1981-1998. Journal of Field Ornithology 74:1–11.

Heitmeyer, M.E. and D.G. Raveling. 1988. Winter resource use by three species of dabbling ducks in California. Unpub. Rept. Delta Waterfowl and Wetlands Res. Sta. Manitoba, Canada. 201 pp.

_____, D.P. Connelly, and R.L. Pederson. 1989. The Central, Imperial, and Coachella valleys of California. Pages 475-505 *in* L.M. Smith, R.L. Pederson, and R.M. Kaminski, eds. Habitat Management for Migrating and Wintering Waterfowl in North America. Texas Tech. Univ. Press, Lubbock.

Higgins, K.F. 1977. Duck nesting in intensively farmed areas of North Dakota. J. Wildlife Management 41(2): 232–242.

Inger, R., G. A. Gudmundsson, G. D. Ruxton, J. Newton, K. Colhoun, S. Auhage and S. Bearhop. 2008. Habitat utilization during staging affects body condition in a long distance migrant, *Branta bernicla hrota*: potential impacts on fitness. Journal of Avian Biology 39: 704–708.

Johnson, D. H. and Grier, J. W. 1988. Determinants of breeding distributions of ducks. Wildlife Monograph 100:1–37.

Johnson, F.A., J.E. Hines, F. Montalbano III, and J.D. Nichols. 1986. Effects of liberalized harvest regulations on wood ducks in the Atlantic Flyway. Wildl. Soc. Bull. 14:383–388.

Johnson, F.A., B.K. Williams, J.D. Nichols, J.E. Hines, W.L. Kendall, G.W. Smith, and D.F. Caithamer. 1993. Developing an adaptive management strategy for harvesting waterfowl in North America. Trans. North Am. Wildl. Nat. Resour. Conf. 58:565–583.

Johnson, W. C., B. V. Millett, T. Gimangy, R. A. Voldseth, G. R. Guntensnergen, and D. E. Naugle. 2005.Vulnerability of northern prairie wetlands to climate change. Bioscience 55:863–872.

Klaassen, M.2002. Relationships between migration and breeding strategies in arctic breeding birds. In Berthold, P. Gwinner, E. & Sonnenschein, E. (eds) Avian Migration: 237–249.

Krapu, G.L. 1974. Feeding ecology of pintail hens during reproduction. The Auk 91: 278–290.

Krapu, G. L., A. T. Klett, and D. G. Jorde. 1983. The effect of variable spring water conditions on mallard reproduction. Auk 100:689–698.

Kirsch, L.M. 1969. Waterfowl production in relation to grazing. J. Wildlife Management 33(4): 821–828.

McLandress, R. M., G. S. Yarris, A. E. H. Perkins, D.P. Connelly and D. G. Raveling. 1996. Nesting Biology of Mallards in California. The Journal of Wildlife Management 60(1): 94–107.

McWilliams, S.R., C. Guglielmo, B. Pierce and M. Klaassen. 2004. Flying, fasting, and feeding in birds during migration: a nutritional and physiological ecology perspective. Journal of Avian Biology 35: 377–393.

Miller, M. R. 1986. Northern pintail body condition during wet and dry winters in the Sacramento Valley, California. The Journal of Wildlife Management 50: 189–198.

Miller, M. R., J. Beam, and D.P. Connelly. 1988. Dabbling duck harvest dynamics in the Central Valley of California - implications for recruitment. Pages 553–569 *in* M.W. Weller, ed. Waterfowl in winter. Univ. of Minnesota Press, Minneapolis MN. 624 pp.

Miller, N.L., K. Bashford, E. Strem. 2003. Potential Impacts of Climate Change on California Hydrology. Journal of the American Water Resources Association 39:771–784.

Milonski, M. 1958. The significance of farmland for waterfowl nesting and techniques for reducing losses due to agricultural practices. Trans. N. Am. Wildl. Conf. 23:215–228.

Murphy-Klassen, H., T. Underwood, S. G. Sealy, and A. A. Czymyi. 2005. Long-term tends in spring arrival dates of migrate birds at Delta Marsh, Manitoba, in relation to climate change. Auk 122:1130–1148.

Newton, I. 1994. The role of nest sites in limiting the numbers of hole-nesting birds: A review. Biological Conservation 70(3) 265–276.

Nichols, J.D. and J.E. Hines. 1982. The relationship between harvest and survival rates of mallards: a straight forward approach with portioned data sets. J. Wildl. Manage. 47:334–348.

Nichols, J.D. 1991. Responses of North American duck populations to exploitation. Pages 498–525 *in* J. D. Lebreton and G. J. M. Hirons, Eds. Bird population studies: Their relevance to conservation and management. Oxford Univ. Press, Oxford, England.

Nichols, J.D., M.J. Conroy, D.R. Anderson, and K.P. Burnham. 1984. Compensatory mortality in waterfowl populations: A review of the evidence and implications for research and management. Trans. North Am. Wildl. and Nat. Resour. Conf. 49:535–554.

Nichols, J.D., Blohm, R. J., Reynolds, R. E., Trost, R. E., Hines, J. E., and Blade, J. P. 1991. Band reporting rates for mallards with reward bands of different dollar values. Journal of Wildlife Management 55:1119–126.

Nichols, J. D., Reynolds, R. E., Blohm, R. J., Trost, R. E., Hines, J. E. and Bladen, J. P. (1995). Geographic variation in band reporting rates for mallards based on reward banding. Journal of Wildlife Management 59 697–708.

Olson, S.M., Compiler. 2015. Pacific Flyway Data Book. U.S. Fish and Wildlife Service, Vancouver, WA.

Orthmeyer, D., J. Y. Takekawa, C. R. Ely, M. L. Wege and W. E. Newton. 1995. Morphological variation in greater white-fronted geese in the Pacific flyway. Condor 97: 123–132.

Pacific Flyway Council. 2018. Pacific Flyway management plan for Pacific brant. Pacific Flyway Study Comm. [c/o USFWS, DMBM], Portland, OR. Unpubl. rept. 40 pp.+ appendices.

_____. 2006. Pacific Flyway management plan for the Aleutian goose. Aleutian Goose Subcomm., Pacific Flyway Study Comm. [c/o USFWS], Portland, OR. Unpubl. rept. 20 pp.+ appendices.

Pamplin, W.L. Jr. 1986. Cooperative efforts to halt population declines of geese nesting on Alaska's Yukon Kuskokwim Delta. Transcripts of the North American Wildlife and Natural Resources Conference 51: 487–506.

Palmer, R.S. 1976. Handbook of North American birds. Vols. 2 and 3. Yale University Press, New Haven and London, CT. 521 pp. and 560 pp.

Parry, G. D. 1981. The meanings of r- and K-selection. Oecologia 48(2): 260–264.

Raveling, D. G. and M.E. Heitmeyer. 1989. Relationships of population size and recruitment of pintails to habitat conditions and harvest. J. Wildl. Manage. 53:1088–1103.

Rocke, T.E. and M. D. Samuel. 1999. Water and sediment characteristics associated with avian botulism outbreaks in wetlands. The Journal of Wildlife Management 63(4) 1249–1260.

Rohwer, F.C and M. Anderson. 1988. Female-biased philopatry, monogamy, and the timing of pair formation in migratory waterfowl. Current Ornithology 5: 187–221.

Royle, J.A., and P. Garrettson. 2005. The effect of reward band value on mid-continent mallard band reporting rates. Journal of Wildlife Management 69:800–804.

Sedinger, J.S., N. D. Chelgren, D. H. Ward, M. S. Lindberg. 2008. Fidelity and breeding probability related to population density and individual quality in black brent geese Branta bernicla nigricans. *Journal of Animal Ecology* 77:4 pp 702–712.

Sedinger, J. S., and E. Rexstad. 1994. Do restrictive harvest regulations result in higher survival rates in mallards? Reply to Smith and Reynolds (1992). Journal of Wildlife Management 58:571–577.

Shuford, W.D., G.W. Page and J.E. Kjelmyr. 1998. Patterns and dynamics of shorebird use of California's Central Valley. The Condor 100: 227–244.

Skalos, D.A 2011. Evaluating body condition and predicting lipid mass of wintering Pacific greater white-fronted geese (*Anser albifrons frontalis*). M.S. Thesis, UC Davis.

Smith, G.W. and R.E. Reynolds. 1992. Hunting and mallard survival. J. Wildl. Manage. 56(2):306–316.

Sorenson, L. G., R. Goldberg, T. L. Root, and M. G. Anderson. 1988. Potential effects of global warming on waterfowl populations breeding in the northern Great Plains. Climatic Change 40:343–369.

Szymanski, M. L., and A. D. Afton. 2004. Effects of spinning-wing decoys on flock behavior and hunting vulnerability of mallards in Minnesota. Wildlife Society Bulletin 33:993–1001.

Thomas, D.R. 2009. Assessment of waterfowl body condition to evaluate the effectiveness of The Central Valley Joint Venture. M.S. Thesis, UC Davis.

Trost, R.E. 1987. Mallard survival and harvest rates: a reexamination of relationships. Trans. N.Am. Wildl. Nat. Resour. Conf. 52:264–284.

USDI. 1975. Issuance of annual regulations permitting the sport hunting of migratory birds. U.S. Fish and Wildl. Serv. Final environ. impact statement. Wash. D.C. 710pp. + append.

USDI. 1988. Issuance of annual regulations permitting the sport hunting of migratory birds. U.S. Fish Wildl. Serv. Final supplem. environ. impact statement. Wash. D.C. 130 pp. + append.

USDI. 2013. Issuance of annual regulations permitting the sport hunting of migratory birds. U.S. Fish Wildl. Serv. Final supplem. Environ. Impact statement. Wash. D.C. 271 pp. + append.

U. S. Fish and Wildlife Service. 1989. North American Wetland Conservation Act. U.S. Department of the Interior, Washington, D.C. USA.

_____. 2018a. Adaptive Harvest Management: 2019 Hunting Season. U.S. Department of Interior, Washington, D.C. 72 pp. Available online at https://www.fws.gov/birds/surveys-and-data/reports-and-publications.php.

_____. 2018b. Waterfowl population status, 2018 U.S. Department of the Interior, Washington, D.C. USA.

_____. 2018c. Migratory bird hunting activity and harvest during the 2016-17 and 2017-18 hunting seasons: Preliminary estimates. U.S. Department of the Interior, Washington, D.C. U.S.A.

Viljugrien, H., N.C. Stenseth, G.W. Smith, and G.H. Steinbakk. 2005. Density dependence in North America Ducks. Ecology 86(1): 245–254.

Ward, D. H., A. Reed, J. S. Sedinger, J. M. Black, D. V. Derksen, and P. M. Caselli. 2005. North American brant: effects of changes in habitat and climate on population dynamics. Global Change Biology 11:869–880.

White, G. C., and K. P. Burnham. 1999. Program MARK: survival estimation from populations of marked animals. Bird Study 46 Supplement: 120–138.

Yarris, G.S., R.M. McLandress and A. E. H. Perkins. 1994. Molt migration of postbreeding female mallards from Suisun Marsh, California. The Condor 96(1): 36–45.

Zeiner, D.C., W.F. Laudenslayer Jr., K.E. Mayer, and M. White. 1990. California's wildlife. Vol. II - birds. California statewide wildlife habitat relationships system. Calif. Dep. Fish and Game, Wildl. Manage. Div., Sacramento, CA.

Appendix A. 2018-19 Regulations Related to Migratory Waterfowl, Coot, Moorhen, (Common Gallinule).

§502. Waterfowl, Migratory; American Coot and Common Moorhen (Common Gallinule).

(a) Definitions.
(1) Dark geese. Dark geese include Canada geese, cackling geese, Aleutian geese and white-fronted geese ("specklebelly").
(2) Large Canada geese. Large Canada geese include western Canada geese ("honker") and lesser Canada geese ("lessers").
(3) Small Canada geese. Small (about the size of a mallard) Canada geese include cackling geese and Aleutian geese. Both are white-cheeked geese nearly identical in appearance to Large Canada geese. Aleutian geese have a thin white neck ring and Cackling geese have dark breasts. Both species have a high-pitched cackle as opposed to the deeper "honking".
(4) White geese. White geese include Ross' geese, snow geese and blue phase of both species.
(b) Waterfowl Hunting Zones.
(1) Northeastern California Zone: In that portion of California lying east and north of a line beginning at the intersection of Interstate 5 with the California-Oregon state line; south along Interstate 5 to its junction with Walters Lane south of the town of Yreka; west along Walters Lane to its junction with Easy Street; south along Easy Street to the junction with Old Highway 99; south along Old Highway 99 to the point of intersection with Interstate 5 north of the town of Weed; south along Interstate 5 to its junction with Highway 89; east and south along Highway 89 to Main Street in Greenville; north and east to its junction with North Valley Road; south to its junction of Diamond Mountain Road; north and east to its junction with North Arm Road; south and west to the junction of North Valley Road; south to the junction with Arlington Road (A22); west to the junction of Highway 89; south and west to the junction of Highway 70; east on Highway 70 to Highway 395; south and east on Highway 395 to the point of intersection with the California-Nevada state line; north along the California-Nevada state line to the junction of the California-Nevada-Oregon state lines west along the California-Oregon state line to the point of origin.
(2) Southern San Joaquin Valley Zone: All of Kings and Tulare counties and that portion of Kern County north of the Southern California Zone.
(3) Southern California Zone: In that portion of southern California (but excluding the Colorado River zone) lying south and east of a line beginning at the mouth of the Santa Maria River at the Pacific Ocean; east along the Santa Maria River to where it crosses Highway 101-166 near the City of Santa Maria; continue north on 101-166; east on Highway 166 to the junction with Highway 99; south on Highway 99 to the junction of Interstate 5; south on Interstate 5 to the crest of the Tehachapi Mountains at Tejon Pass; east and north along the crest of the Tehachapi Mountains to where it intersects Highway 178 at Walker Pass; east on Highway 178 to the junction of Highway 395 at

the town of Inyokern; south on Highway 395 to the junction of Highway 58; east on Highway 58 to the junction of Interstate 15; east on Interstate 15 to the junction with Highway 127; north on Highway 127 to the point of intersection with the California-Nevada state line.

(4) Colorado River Zone: In those portions of San Bernardino, Riverside, and Imperial counties lying east of the following lines: Beginning at the intersection of Nevada State Highway 95 with the California-Nevada state line; south along Highway 95 through the junction with Highway 40; continue south on Highway 95 to Vidal Junction; south through the town of Rice to the San Bernardino-Riverside county line on a road known as “Aqueduct Road” also known as Highway 62 in San Bernardino County; southwest on Highway 62 to Desert Center Rice Road; south on Desert Center Rice Road/Highway 177 to the town of Desert Center; continue east 31 miles on Interstate 10 to its intersection with the Wiley Well Road; south on this road to Wiley Well; southeast along the Milpitas Wash Road to the Blythe, Brawley, Davis Lake intersections; south on the Blythe Ogilby Road also known as County Highway 34 to its intersection with Ogilby Road; south on this road to Highway 8 ; east seven miles on Highway 8 to its intersection with the Andrade-Algodones Road/Highway 186; south on this paved road to the intersection of the Mexican boundary line at Los Algodones, Mexico.

(5) Balance of State Zone: That portion of the state not included in Northeastern California, Southern California, Colorado River or the Southern San Joaquin Valley zones.

(6) Special Management Areas

(A) North Coast. All of Del Norte and Humboldt counties.

(B) Humboldt Bay South Spit (West Side). Beginning at the intersection of the north boundary of Table Bluff County Park and the South Jetty Road; north along the South Jetty Road to the South Jetty; west along the South Jetty to the mean low water line of the Pacific Ocean; south along the mean low water line to its intersection with the north boundary of the Table Bluff County Park; east along the north boundary of the Table Bluff County Park to the point of origin.

(C) Klamath Basin. Beginning at the intersection of Highway 161 and Highway 97; east on Highway 161 to Hill Road; south on Hill Road to N Dike Road West Side; east on N Dike Road West Side until the junction of the Lost River; north on N Dike Road West Side until the Volcanic Legacy Scenic Byway; east on Volcanic Legacy Scenic Byway until N Dike Road East Side; south on the N Dike Road East Side; continue east on N Dike Road East Side to Highway 111; south on Highway 111/Great Northern Road to Highway 120/Highway 124; west on Highway 120/Highway 124 to Hill Road; south on Hill Road until Lairds Camp Road; west on Lairds Camp Road until Willow Creek; west and south on Willow Creek to Red Rock Road; west on Red Rock Road until Meiss Lake Road/Old State Highway; north on Meiss Lake Road/Old State Highway to Highway 97; north on Highway 97 to the point of origin.

(D) Sacramento Valley. Beginning at the town of Willows; south on Interstate 5 to the junction with Hahn Road; east on Hahn Road and the Grimes-Arbuckle Road to the town of Grimes; north on Highway 45 to its junction with Highway 162; north on Highway 45-162 to the town of Glenn; west on Highway 162 to the point of beginning.

(E) Morro Bay. Beginning at a point where the high tide line intersects the State Park boundary west of Cuesta by the Sea; northeasterly to a point 200 yards offshore of the high tide line at the end of Mitchell Drive in Baywood Park; northeasterly to a point 200 yards offshore of the high tide line west of the Morro Bay State Park Boundary, adjacent to Baywood Park; north to a point 300 yards south of the high tide line at the end of White Point; north along a line 400 yards offshore of the south boundary of the Morro Bay City limit to a point adjacent to Fairbanks Point; northwesterly to the high tide line on the sand spit; southerly along the high tide line of the sand spit to the south end of Morro Bay; easterly along the Park boundary at the high tide line to the beginning point.
(F) Martis Creek Lake. The waters and shoreline of Martis Creek Lake, Placer and Nevada counties.
(G) Northern Brant. Del Norte, Humboldt and Mendocino counties.
(H) Balance of State Brant. That portion of the state not included in the Northern Brant Special Management Area.
(I) Imperial County. Beginning at Highway 86 and the Navy Test Base Road; south on Highway 86 to the town of Westmoreland; continue through the town of Westmoreland to Route S26; east on Route S26 to Highway 115; north on Highway 115 to Weist Rd.; north on Weist Rd. to Flowing Wells Rd.; northeast on Flowing Wells Rd. to the Coachella Canal; northwest on the Coachella Canal to Drop 18; a straight line from Drop 18 to Frink Rd.; south on Frink Rd. to Highway 111; north on Highway 111 to Niland Marina Rd.; southwest on Niland Marina Rd. to the old Imperial County boat ramp and the water line of the Salton Sea; from the water line of the Salton Sea, a straight line across the Salton Sea to the Salinity Control Research Facility and the Navy Test Base Road; southwest on the Navy Test Base Road to the point of beginning.

(c) Seasons and Bag and Possession Limits for American Coots, and Common Moorhens.		
(1) Statewide Provisions.		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
American Coot and Common Moorhen	Concurrent with duck season(s)	Daily bag limit:25, either all of one species or a mixture of these species. Possession limit: triple the daily bag limit.
(d) Seasons and Bag and Possession Limits for Ducks and Geese by Zone.		
(1) Northeastern California Zone (NOTE: SEE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*

Ducks (including Mergansers)	From the first Saturday in October extending for 105 days. Scaup: from the first Saturday in October extending for a period of 58 days and from the fourth Saturday in December extending for a period of 28 days.	Daily bag limit: 7 Daily bag limit may include: • 7 mallards, but not more than 2 females. • 2 pintail (either sex). • 2 canvasback (either sex). • 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.
Geese	Regular Season: Dark geese from the first Saturday in October extending for 100 days. White geese from the first Saturday in October extending for a period of 58 days and from the first Saturday in January extending for a period of 14 days. Late Season: White-fronted and white geese from February 6 extending for 33 days. During the Late Season, hunting is only permitted on Type C wildlife areas listed in Section 550-552, navigable waters, and private lands with the permission of the land owner under provisions of Section 2016, Fish and Game Code. Hunting is prohibited on Type A and Type B wildlife areas, the Klamath Basin National Wildlife Refuge Complex, the Modoc National Wildlife Refuge, and any waters which are on, encompassed by, bounded over, flow over, flow through,	Daily bag limit: 30 Daily bag limit may include: • 20 white geese. • 10 dark geese but not more than 2 Large Canada geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.

	or are adjacent to any Type A and Type B wildlife areas, the Klamath Basin National Wildlife Refuge Complex, or the Modoc National Wildlife Refuge.	
(2) Southern San Joaquin Valley Zone (NOTE: SEE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers)	From the third Saturday in October extending for 100 days. Scaup: from the first Saturday in November extending for 86 days.	Daily bag limit: 7 Daily bag limit may include: • 7 mallards, but not more than 2 females. • 2 pintail (either sex). • 2 canvasback (either sex). • 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.
Geese	From the third Saturday in October extending for 100 days.	Daily bag limit: 30 Daily bag limit may include: • 20 white geese. • 10 dark geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.
(3) Southern California Zone (NOTE: SEE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers)	From the third Saturday in October extending for 100 days. Scaup: from the first Saturday in November extending for 86	Daily bag limit: 7 Daily bag limit may include: • 7 mallards, but not more than 2 females. • 2 pintail (either sex). • 2 canvasback (either sex).

	days.	• 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.
Geese	From the third Saturday in October extending for 100 days.	Daily bag limit: 23 Daily bag limit may include: • 20 white geese. • 3 dark geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.
(4) Colorado River Zone (NOTE: SEE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers).	From the third Friday in October extending for 101 days. Scaup: from the first Saturday in November extending for 86 days.	Daily bag limit: 7 Daily bag limit may include: • 7 mallards, but not more than 2 females or Mexican-like ducks. • 2 pintail (either sex). • 2 canvasback (either sex). • 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.
Geese	From the third Friday in October extending for 101 days.	Daily bag limit: 24 Daily bag limit may include: • 20 white geese. • 4 dark geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.
(5) Balance of State Zone (NOTE: SEE SUBSECTION 502(d)(6) BELOW FOR SPECIAL SEASONS AND CLOSURES.)		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers).	From the third Saturday in October extending for	Daily bag limit: 7 Daily bag limit may include:

	100 days. Scaup: from the first Saturday in November extending for 86 days.	• 7 mallards, but not more than 2 females. • 2 pintail (either sex). • 2 canvasback (either sex). • 2 redheads (either sex). • 3 scaup (either sex). Possession limit: triple the daily bag limit.
Geese	Early Season: Large Canada geese only from the Saturday closest to October 1 for a period of 5 days EXCEPT in the North Coast Special Management Area where Large Canada geese are closed during the early season. Regular Season: Dark and white geese from the third Saturday in October extending for 100 days EXCEPT in the Sacramento Valley Special Management Area where the white-fronted goose season will close after December 21. Late Season: White-fronted geese and white geese from the second Saturday in February extending for a period of 5 days EXCEPT in the Sacramento Valley Special Management Area where the white-fronted goose season is closed. During the Late Season, hunting is not permitted on wildlife areas listed in Sections 550-552 EXCEPT on Type C wildlife areas in the North Central and Central regions.	Daily bag limit: 30 Daily bag limit may include: • 20 white geese. • 10 dark geese EXCEPT in the Sacramento Valley Special Management Area where only 3 may be white-fronted geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.

(6) Special Management Areas (see descriptions in 502(b)(6))				
	(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*	
1. North Coast	All Canada Geese	From October 31 extending for a period of 89 days (Regular Season) and from February 23 extending for a period of 16 days (Late Season). During the Late Season, hunting is only permitted on private lands with the permission of the land owner under provisions Section 2016, Fish and Game Code.	Daily bag limit: 10 Canada Geese of which only 1 may be a Large Canada goose (see definitions: 502(a)), EXCEPT during the Late Season the bag limit on Large Canada geese is zero. Possession limit: triple the daily bag limit.	
2. Humboldt Bay South Spit (West Side)	All Species	Closed during brant Season		
3. Klamath Basin	Geese	Large Canada Geese from the first Saturday in October extending for 100 days. White-fronted and white geese from the first Saturday in October extending for 105 days.	Daily bag limit: 30 Daily bag limit may include: • 20 white geese. • 10 dark geese but not more than 2 Large Canada geese (see definitions: 502(a)). Possession limit: triple the daily bag limit.	
4.Sacramento Valley	White-Fronted Geese	Open concurrently with the goose season through December 21, and during Youth Waterfowl Hunting Days.	Daily bag limit: 3 white-fronted geese. Possession limit: triple the daily bag limit.	
5. Morro Bay	All species	Open in designated area only from the opening day of brant season through the remainder of waterfowl season.		

6. Martis Creek Lake	All species	Closed until November 16.		
7. Northern Brant	Black Brant	From November 8 extending for 37 days.	Daily bag limit: 2 Possession limit: triple the daily bag limit.	
8. Balance of State Brant	Black Brant	From November 9 extending for 37 days.	Daily bag limit: 2 Possession limit: triple the daily bag limit.	
9. Imperial County	White Geese	From the first Saturday in November extending for a period of 86 days (Regular Season) and from the first Saturday in February extending for a period of 16 days (Late Season). During the Late Season, hunting is only permitted on private lands with the permission of the land owner under provisions of Section 2016, Fish and Game Code.	Daily bag limit: 20 Possession limit: triple the daily bag limit.	

(e) Youth Waterfowl Hunting Days Regulations (NOTE: To participate in these Youth Waterfowl Hunts, federal regulations require that hunters must be 17 years of age or younger and must be accompanied by a non-hunting adult 18 years of age or older.)

(1) Statewide Provisions.

(A) Species	*(B) Season*	*(C) Daily Bag Limit*
Ducks (including Mergansers), American Coot, Common Moorhen, Black Brant, Geese	1. Northeastern California Zone: The Saturday fourteen days before the opening of waterfowl season extending for 2 days. 2. Southern San Joaquin Valley Zone: The Saturday following the closing of waterfowl season extending for 2 days. 3. Southern California Zone: The Saturday following the closing of	Same as regular season.

	waterfowl season extending for 2 days. 4. Colorado River Zone: The Saturday following the closing of waterfowl season extending for 2 days. 5. Balance of State Zone: The Saturday following the closing of waterfowl season extending for 2 days.	
(f) Falconry Take of Ducks (including Mergansers), Geese, American Coots, and Common Moorhens.		
(1) Statewide Provisions		
(A) Species	*(B) Season*	*(C) Daily Bag and Possession Limits*
Ducks (including Mergansers), Geese, American Coot and Common Moorhen	1. Northeastern California Zone. Open concurrently with duck season through January 13, 2019. 2. Balance of State Zone. Open concurrently with duck season and February 2-3, 2019 EXCEPT in the North Coast Special Management Area where the falconry season for geese runs concurrently with the season for Small Canada geese (see 502(d)(6)) 3. Southern San Joaquin Valley Zone. Open concurrently with duck season and January 28-30, 2019. Goose hunting in this zone by means of falconry is not permitted. 4. Southern California Zone. Open concurrently with duck season and January 28-February 1, 2019. EXCEPT in the Imperial County Special	Daily bag limit: 3 Daily bag limit makeup: • Either all of 1 species or a mixture of species allowed for take. Possession limit: 9

	Management Area where the falconry season for geese runs concurrently with the season for white geese. 5. Colorado River Zone. Open concurrently with duck season and January 28-31, 2019. Goose hunting in this zone by means of falconry is not permitted. Federal regulations require that California's hunting regulations conform to those of Arizona, where goose hunting by means of falconry is not permitted.	

Appendix B. Estimated Retrieved Harvest of Geese in California, 1962–2017.

Year	Canada	White-Front	Snow	Ross'	Brant	TOTAL
1962	53,532	50,088	28,826	0	9,433	141,879
1963	99,888	56,694	66,810	0	8,008	231,400
1964	77,920	51,735	55,151	0	3,748	188,554
1965	49,685	42,211	33,771	0	10,735	136,402
1966	72,415	65,321	155,543	1,022	7,155	301,456
1967	8,756	62,819	72,413	533	6,929	151,450
1968	72,935	47,345	53,308	0	8,298	181,886
1969	72,613	68,443	72,545	2,514	10,056	226,171
1970	95,112	70,639	112,614	5,114	393	283,872
1971	74,008	34,216	94,123	3,646	2,524	208,517
1972	148,888	51,813	41,998	0	13,698	256,397
1973	69,701	44,615	106,721	4,398	2,161	227,596
1974	72,166	40,682	50,764	8,464	1,693	173,769
1975	62,002	30,193	81,993	6,968	0	181,156
1976	58,444	44,044	127,678	7,726	515	238,407
1977	42,610	33,572	77,771	3,395	9,700	167,048
1978	46,530	34,719	28,578	2,360	674	112,861
1979	31,373	21,399	26,179	4,419	0	83,370
1980	26,950	18,693	28,459	2,795	0	76,897
1981	52,089	21,781	28,591	6,316	0	108,777
1982	46,418	15,004	26,263	7,298	0	94,983
1983	56,384	16,157	43,223	6,789	3,573	126,126
1984	38,004	6,686	49,609	8,373	0	102,672
1985	40,313	15,157	65,085	8,913	0	129,468
1986	21,999	7,542	31,839	3,477	0	64,857
1987	1,348	9,634	28,601	2,375	0	41,958
1988	26,296	4,707	30,571	884	0	62,458
1989	24,486	9,519	30,263	5,106	566	69,940
1990	32,691	7,003	8,104	2,438	475	50,711
1991	9,474	9,828	25,839	3,253	211	48,605
1992	28,546	11,705	26,407	3,076	1,810	71,544
1993	21,066	12,311	46,461	7,430	2,368	89,636
1994	28,469	12,597	21,847	7,476	2,774	73,163
1995	21,119	11,476	30,679	4,833	328	68,435
1996	25,487	16,530	46,849	12,405	2,639	103,910
1997	23,659	22,448	27,628	8,058	4,029	85,822
1998	23,299	21,984	38,371	6,049	12,097	101,800
1999	14,017	23,925	35,563	23,545	2,639	99,689
2000	25,877	21,184	31,721	6,749	1,800	87,331
2001	30,228	27,080	33,167	13,015	4,100	107,590
2002	37,762	31,497	30,279	15,662	1,100	116,300
2003	41,946	24,685	32,851	16,333	2,300	118,115
2004	44,492	39,924	35,355	10,329	800	130,900
2005	49,182	42,156	46,653	7,729	900	146,620
2006	41,381	52,492	43,296	5,875	2,900	145,944
2007	50,484	59,416	52,038	7,961	1,800	171,699
2008	49,252	110,523	70,946	13,779	1,000	245,500
2009	53,865	56,101	30,693	8,740	900	150,299
2010	68,666	67,810	54,548	14,974	541	206,539
2011	51,870	55,760	43,718	14,635	750	166,733
2012	47,877	41,842	45,261	14,886	1,093	150,959
2013	44,071	65,071	38,747	13,310	952	162,151
2014	52,735	74,976	66,492	18,343	3,080	215,626
2015	40,431	62,484	51,947	12,007	2,238	169,100
2016	41,280	34,885	56,979	6,977	4,786	145,200
2017*	52,876	64,098	91,487	25,107	3,176	239,000
Averages:						
1962-2017	46,339	36,736	50,236	7,283	2,919	143,558
1962-65	70,256	50,182	46,140	0	7,981	174,559
1966-70	64,366	62,913	93,285	1,837	6,566	228,967
1971-75	85,353	40,304	75,120	4,695	4,015	209,487
1976-80	41,181	30,485	57,733	4,139	2,178	135,717
1981-85	46,642	14,957	42,554	7,538	715	112,405
1986-90	21,364	7,681	25,876	2,856	208	57,985
1991-95	21,735	11,583	30,247	5,214	1,498	70,277
1996-00	22,468	21,214	36,026	11,361	4,641	95,710
2001-05	40,722	33,068	35,661	12,614	1,840	123,905
2005-12	52,100	63,465	48,842	10,528	1,256	176,191
2010-14	53,044	61,092	49,753	15,230	1,283	180,402
% Change from:						
2016	28.1%	83.7%	60.6%	259.9%	-33.6%	64.6%
1962-2016	14.1%	74.5%	82.1%	244.7%	8.8%	66.5%
% State's Total Goose Harvest:						
2017	23.4%	28.3%	40.5%	11.1%	1.4%	
1962-2016	32.3%	25.6%	35.0%	5.1%	2.0%	

*Preliminary Data

Appendix C. Pacific Flyway Fall and Winter Goose Surveys

Pacific White-fronted Goose abundance indices from breeding pair surveys in Alaska (Yukon-Kuskokwim Delta Coastal Zone Survey and Alaska-Yukon Waterfowl Breeding Population and Habitat Survey) and fall counts in California, 1979–current.

	Yukon-Kuskokwim				Projected fall	
Year	Delta	Interior	Bristol Bay	Total	population[2]	Fall Survey[1]
1979						73,100
1980						93,500
1981						116,500
1982						91,700
1983						112,900
1984						100,200
1985	16,914	12,082	5,050	36,046	163,249	93,900
1986	13,400	10,019	4,266	27,685	141,930	107,100
1987	15,717	7,564	3,657	26,938	140,026	130,600
1988	27,191	14,145	3,918	45,254	186,728	124,690
1989	26,004	16,307	5,398	49,709	198,087	263,350
1990	37,835	18,458	2,003	58,307	220,010	237,050
1991	31,286	13,262	4,527	49,075	196,470	215,655
1992	34,671	16,110	7,052	57,833	218,802	230,675
1993	39,748	22,790	1,306	63,844	234,128	253,820
1994	56,513	12,966	4,092	73,571	258,930	298,930
1995	77,710	10,215	2,612	90,537	302,190	251,970
1996	78,032	36,543	4,353	118,928	374,582	350,850
1997	83,215	30,452	3,657	117,324	370,492	318,954
1998	87,661	34,381	1,915	124,177	387,966	413,100
1999	95,040	27,800	3,483	126,323	393,437	285,514
2000	91,911	16,798	1,654	110,363	352,743	284,044
2001	113,603	24,460	6,095	144,158	438,913	337,848
2002	90,407	17,387	5,311	113,105	359,734	402,565
2003	117,951	17,387	2,177	137,515	421,975	424,900
2004	100,622	16,601	1,828	119,051	374,895	337,971
2005	121,017	18,566	6,530	146,113	443,898	506,690
2006	138,067	28,979	4,702	171,748	509,252	426,300
2007	178,515	28,488	2,177	209,180	604,706	476,009
2008	161,979	54,913	1,045	217,937	627,035	602,699
2009	144,678	32,712	5,137	182,527	536,746	457,802
2010	174,556	44,402	7,923	226,881	649,840	783,648
2011	168,925	33,989	6,095	209,009	604,270	646,501
2012	181,519	47,250	3,744	232,513	664,201	831,955
2013	164,399	29,566	5,485	199,452	579,902	No Survey
2014	205,081	16,503	348	221,932	637,221	663,257
2015	140,313	18,468	1,132	159,913	479,085	634,478
2016	206,503	31,042	3,309	240,854	685,469	727,419
2017	216,219	43,616	697	260,532	735,643	743,488
2018	190,586	11,788	1,045	203,419	590,017	
Averages:						
Long Term	106,824	24,001	3,639	134,463	414,194	402,060
3-yr	204,436	28,815	1,664	234,935	670,376	735,454
% Change from:						
Long Term	78.4	-50.9	-71.3	51.3	42.4	-100.0
3-yr	-6.8	-59.1	-37.9	-13.4	-12.0	-100.0
2017	-11.9	-73.0	49.9	-21.9	-19.8	-100.0

[1]Fall surveys were initiated in 1979 and guided management actions until 1996. Management actions after 1996 were based on total indicated birds (AK Total) from the breeding ground survey and a factor derived from the historic relationship between the fall survey and breeding ground survey (1985–1998). Timing of the Fall survey is as follows: 1979–1988 (November) and 1989–2015 (October).

[2]Projected fall population = (Alaska total * 2.5498) + 71,339.

White Goose (Snow Goose and Ross's Goose) abundance indices from the California Special white goose survey and Skagit-Fraser photo inventory conducted in December, 1979–current, and the Oregon Winter light goose and tundra swan survey, conducted in January, 2016–current.

Year	Skagit-Fraser	Oregon	California	Total
1979	35,600		492,500	528,100
1980	22,400		181,800	204,200
1981	48,600		711,300	759,900
1982	26,100		328,000	354,100
1983	24,500		523,100	547,600
1984	26,600		439,700	466,300
1985	46,200		503,600	549,800
1986	39,900		481,800	521,700
1987	47,700		477,600	525,300
1988	43,800		397,200	441,000
1989	32,200		431,700	463,900
1990	31,700		676,800	708,500
1991	39,100		651,000	690,100
1992	34,300		605,000	639,300
1993	49,100		520,100	569,200
1994	42,600		436,600	478,200
1995	37,000		464,400	501,400
1996	45,800		320,500	366,300
1997	47,000		369,400	416,400
1998	47,100		307,200	354,300
1999	28,600		550,400	579,000
2000	56,300		600,500	656,800
2001	52,000		396,200	448,200
2002	73,100		523,700	596,800
2003	66,800		521,000	587,800
2004	68,141		682,128	750,269
2005	60,040		630,686	710,726
2006	79,891		719,810	799,701
2007	94,859		978,622	1,073,481
2008	57,000		900,403	957,403
2009	73,964		827,055	901,019
2010	63,641		800,156	863,797
2011	69,964		1,027,887	1,097,851
2012	56,973		824,432	881,405
2013	75,313		1,275,890	1,351,203
2014	58,007		1,141,579	1,199,586
2015[1]	66,501	19,666		
2016	103,617	29,676	1,773,493	1,906,788
Averages:				
Long Term	52,421	24,772	634,925	687,768
3-yr	76,042	24,772	1,396,987	1,485,859
% Change from:				
Long Term	103.0	49.4	194.0	191.6
3-yr	36.3	19.8	27.0	28.3
2015	55.8	49.4	55.4	59.0

[1]The California Special White Goose Survey was not conducted.

Aleutian Canada Goose abundance indices from direct count and mark-resight methods, 1975–current.

Year	Estimate	SE	L95% C.I.	U95% C.I.	Method
1975	790				Direct count
1976	900				Direct count
1977	1,280				Direct count
1978	1,500				Direct count
1979	1,590				Direct count
1980	1,740				Direct count
1981	2,000				Direct count
1982	2,700				Direct count
1983	3,500				Direct count
1984	3,800				Direct count
1985	4,200				Direct count
1986	4,300				Direct count
1987	5,000				Direct count
1988	5,400				Direct count
1989	5,800				Direct count
1990	6,300				Direct count
1991	7,000				Direct count
1992	7,680				Direct count
1993	11,680				Direct count
1994	15,700				Direct count
1995	19,150				Direct count
1996*	21,420				Direct count
1997*	22,800				Direct count
1998*	27,600				Direct count
1999*	15,451	558	14,357	16,544	Mark-resight
2000*	20,392	763	18,898	21,887	Mark-resight
2001*	32,440	1,070	30,343	34,536	Mark-resight
1999	35,336	3,120	29,220	41,452	Mark-resight
2000	34,182	1,339	31,557	36,806	Mark-resight
2001	88,292	18,736	51,570	125,014	Mark-resight
2002	65,211	12,822	39,963	90,459	Mark-resight
2003	73,030	2,761	67,618	78,441	Mark-resight
2004	111,091	4,375	102,517	119,666	Mark-resight
2005	87,841	4,841	78,353	97,329	Mark-resight
2006	97,224	4,524	88,358	106,091	Mark-resight
2007	117,347	9,797	98,144	136,550	Mark-resight
2008	116,119	7,438	101,539	130,698	Mark-resight
2009	81,766	13,347	55,605	107,926	Mark-resight
2010	106,691	8,986	89,076	124,305	Mark-resight
2011	105,271	8,405	88,797	121,745	Mark-resight
2012	135,915	10,925	114,501	157,328	Mark-resight
2013	166,292	15,857	135,213	197,371	Mark-resight
2014	149,968	13,087	124,318	175,618	Mark-resight
2015	197,725	17,822	162,794	232,656	Mark-resight
2016	154,659	13,368	128,459	180,860	Mark-resight
2017	168,548	20,345	128,671	208,424	Mark-resight
2018	171,334	16,229	139,526	203,142	Mark-resight
Averages:					
Long Term	53,531	9,153	63,452	119,341	
3-yr	164,847	16,647	132,219	197,475	
% Change from:					
Long Term	236.1	83.8	72.5	75.8	
3-yr	3.9	-2.5	5.5	2.9	
2017	1.7	-20.2	8.4	-2.5	

*Methods overlapped by three years.

Pacific Brant population indices from the Mid-winter Waterfowl Survey, 1936–current. The table continues on the next page and includes long-term summary statistics.

	U.S. and Canada						Mexico[b]			MWS Index		Izembek Index	
Year	Ak*	BC*	WA	OR	CA	Subtotal[a]	Baja	Mainland	Subtotal	Annual[c]	3-yr Avg[c]	Annual[d]	% Juv[d]
1936			8,202	3,085	19,910	31,197							
1937			13,450	5,935	13,460	32,845							
1938			24,560	10,475	38,200	73,235							
1939			25,595	9,502	16,890	51,987							
1940			35,520	5,350	35,050	75,920							
1941			24,100	5,000	31,785	60,885							
1942			53,950	6,850	28,983	89,783							
1943			37,000	575	18,000	55,575							
1944			33,950	7,250	20,250	61,450							
1945			32,650	3,000	30,100	65,750							
1946			25,462	55	60,452	85,969							
1947			20,250	8,200	39,640	68,090							
1948			20,660	2,850	32,750	56,260							
1949			20,650	803	66,515	87,968							
1950			15,574	3,600	57,792	76,966							
1951			21,639	2,110	48,131	71,880	93,200	0	93,200				
1952			16,578	3,200	43,840	63,618	102,945	0	102,945				
1953			27,473	1,509	37,557	66,539	87,905	0	87,905				
1954			15,376	1,560	28,750	45,686	86,316	0	86,316				
1955			21,915	1,686	34,070	57,671	76,679	0	76,679				
1956			15,914	2,073	38,510	56,497	52,743	0	52,743				
1957			20,701	1,493	35,848	58,042	73,380	0	73,380				
1958			25,219	2,778	26,560	54,557	71,305	4	71,309				
1959			10,815	1,121	10,750	22,686	71,305	1,400	72,705				
1960			17,614	652	3,771	22,037	113,087	1,115	114,202	136,239	--		
1961			16,675	1,330	6,853	24,858	138,625	4,355	142,980	167,838	--		
1962			25,815	2,266	23,510	51,591	116,245	2,400	118,645	170,236	158,104		
1963			20,400	2,639	2,388	25,427	101,575	13,240	114,815	140,242	159,439		
1964			34,169	2,000	8,353	44,522	117,470	23,290	140,760	185,282	165,253		24.0
1965			19,938	1,325	3,372	24,635	117,350	24,915	142,265	166,900	164,141		27.7
1966			22,175	798	3,284	26,257	115,601	19,505	135,106	161,363	171,182		22.5
1967			21,235	1,523	3,824	26,582	111,755	41,315	153,070	179,652	169,305		45.4
1968			15,746	865	1,729	18,340	111,600	24,400	136,000	154,340	165,118		18.8
1969			10,063	382	166	10,611	97,400	35,075	132,475	143,086	159,026		18.9
1970			8,916	963	207	10,086	98,200	33,400	131,600	141,686	146,371		30.5
1971			10,915	1,374	130	12,419	105,800	31,000	136,800	149,219	144,664		40.0
1972			4,328	1,047	0	5,375	91,200	28,200	119,400	124,775	138,560		37.5
1973			5,911	2,544	950	9,405	85,500	30,100	115,600	125,005	133,000		39.8
1974			4,977	1,904	470	7,351	96,900	26,400	123,300	130,651	126,810		34.9
1975			6,163	1,507	480	8,150	80,825	34,455	115,280	123,430	126,362		5.0
1976			7,540	1,769	680	9,989	82,783	29,273	112,056	122,045	125,375		40.1
1977			14,111	2,100	0	16,211	86,534	44,222	130,756	146,967	130,814	107,784	38.9
1978			18,100	1,110	560	19,770	106,469	36,648	143,117	162,887	143,966	116,298	34.1
1979			8,076	1,255	10	9,343	87,860	32,210	120,070	129,413	146,422		16.5
1980			7,665	1,015	135	8,815	89,690	47,860	137,550	146,365	146,222	128,204	18.1
1981	3,271		10,107	1,790	540	15,708	160,560	21,200	181,760	197,468	157,749	127,667	31.6
1982			6,451	706	485	7,642	85,105	28,297	113,402	121,044	154,959	180,734	31.0
1983			3,113	718	565	4,396	81,761	23,157	104,918	109,314	142,609	146,945	14.2
1984	1,611		7,097	930	700	10,338	95,170	29,533	124,703	135,041	121,800	147,933	32.9
1985		283	11,793	641	800	13,517	101,405	30,163	131,568	145,085	129,813	120,122	18.3

[a] In British Columbia, totals for 1984-1991 are Christmas Bird Counts, and from 1992-on are from Canadian Wildlife Service counts.

[b] Incomplete survey in Mexico during 1951–1959.

[c] Includes Western High Arctic brant. 3-year average considers most recent 3 years of annual counts.

[d] Izembek index from fall before Mid-winter Waterfowl Survey. Includes Western High Arctic brant, and was updated Fall 2016 after extensive review. Percent Juvenile from NWR ground surveys.

* The historical Alaska MWS index was recalculated in 2015, following the reccomendation by Wilson and Dau 2015.

Pacific Brant population index, continued.

	U.S. and Canada						Mexico[b]			MWS Index		Izembek Index	
Year	Ak[f]	BC[a]	WA	OR	CA	Subtotal[a]	Baja	Mainland	Subtotal	Annual[c]	3-yr Avg[c]	Annual[d]	% Juv[d]
1986	5,338	319	12,026	1,113	706	19,502	92,525	22,200	114,725	134,227	134,227	122,673	21.4
1987	7,550	205	14,371	1,133	736	23,995	73,825	13,088	86,913	110,908	122,568	116,131	23.2
1988	6,180	263	19,831	1,104	947	28,325	99,066	17,630	116,696	145,021	130,052	136,765	47.4
1989	6,918	484	18,538	871	1,033	27,844	89,600	18,121	107,721	135,565	130,498	123,822	24.4
1990	5,303	406	13,756	1,399	992	21,856	107,545	22,320	129,865	151,721	144,102	135,041	27.4
1991	4,742	591	16,221	1,262	1,340	24,156	88,650	19,905	108,555	132,711	139,999	123,551	22.3
1992	7,043	283	13,505	1,397	2,424	24,652	78,280	14,905	93,185	117,837	134,090	128,784	29.9
1993	8,369	180	13,058	1,254	9,415	32,276	68,280	24,444	92,724	125,000	125,183	119,531	19.6
1994	12,125	382	13,595	666	2,299	29,067	83,130	17,135	100,265	129,332	124,056	143,768	28.2
1995	11,381	363	20,231	708	3,987	36,670	74,060	22,755	96,815	133,485	126,414	142,701	17.0
1996	10,278	634	6,941	644	2,008	20,505	87,280	20,205	107,485	127,990	128,952	150,946	39.7
1997	10,049	500	9,753	669	3,598	24,569	108,018	22,720	130,738	155,307	138,927	118,188	26.8
1998	8,562	619	10,881	580	6,091	26,733	97,805	14,300	112,105	138,838	140,712	130,252	20.9
1999	10,354	985	15,252	645	4,296	31,532	84,965	15,795	100,760	132,292	142,146	116,512	30.7
2000	8,120	1,238	13,859	523	3,389	27,129	92,020	16,420	108,440	135,569	135,566	131,134	23.4
2001	17,790	1,254	10,197	695	4,197	34,133	78,850	13,010	91,860	125,993	131,285	151,216	31.8
2002	13,576	1,483	13,478	552	4,092	33,181	93,995	11,055	105,050	138,231	133,264	112,554	10.0
2003	7,677	1,103	11,455	557	3,124	23,916	74,132	8,094	82,226	106,142	123,455	115,839	23.6
2004	12,756	2,117	14,544	528	6,372	36,317	71,685	13,270	84,955	121,272	121,882	135,944	13.2
2005	12,041	1,020	14,286	609	5,224	33,180	59,960	14,068	74,028	107,208	111,541	134,474	19.5
2006	15,404	1,792	16,305	649	5,069	39,219	87,483	14,254	101,737	140,956	123,145	152,712	37.0
2007	28,533	2,078	12,712	702	7,387	51,412	65,250	13,932	79,182	130,594	126,253	124,189	24.3
2008	27,422	1,264	19,775	370	4,827	53,658	83,856	19,443	103,299	156,957	142,836	140,897	27.6
2009	21,482	2,574	29,243	823	6,392	60,514	*no survey conducted* [e]			–	142,836	130,294	18.5
2010	28,234	2,699	23,908	*no survey*	13,553	68,394	71,688	23,389	95,077	163,471	150,341	144,594	30.5
2011	42,937	2,414	21,457	*no survey*	15,610	82,418	61,153	18,897	80,050	162,468	160,965	130,091	20.7
2012	44,252	1,229	17,502	687	2,227	65,897	101,571	9,873	111,444	177,341	167,760	126,028	24.5
2013	41,821	2,204	16,454	200	7,448	68,127	71,607	23,566	95,173	163,300	167,703	154,481	14.2
2014	48,140	2,104	17,485	511	7,916	76,156	68,290	28,869	97,159	173,315	171,319	157,781	16.8
2015	50,316	1,636	10,706	486	4,908	68,050	44,533	23,899	68,432	136,482	157,699	171,635	16.6
2016	46,772	3,364	11,811	583	5,105	67,635	55,066	17,324	72,390	140,025	149,941	160,984	17.2
2017	44,899	3,677	15,878	405	8,765	73,624	67,386	14,710	82,096	155,720	151,386	203,735	19.1
2018	46,067	2,796	10,905	355	2,466	62,589	46,924	14,038	60,962	123,551	139,765		
Averages:													
Long Term	19,352	1,310	16,942	1,826	12,478	39,900	88,369	18,817	107,186	142,145	142,069	136,573	26
3-yr	45,913	3,279	12,865	448	5,445	67,949	56,459	15,357	71,816	139,765	147,031	178,785	18
% Change from:													
Long Term	148.1	121.0	-35.9	-80.8	-80.4	58.0	-47.3	-25.7	-43.5	-13.3	-1.6	51.1	-26.1
3-yr	0.3	-14.7	-15.2	-20.7	-54.7	-7.9	-16.9	-8.6	-15.1	-11.6	-4.9	14.0	8.3
2016	2.6	-24.0	-31.3	-12.3	-71.9	-15.0	-30.4	-4.6	-25.7	-20.7	-7.7	26.6	11.0
Objectives:	9,000	8,000	25,000	3,000	10,000	55,000			107,000		162,000		

[a] In British Columbia, totals for 1984–1991 are Christmas Bird Counts, and from 1992–on are from Canadian Wildlife Service counts.

[b] Aerial surveys were not flown (2009, 2011-2012, 2014–2015) in Mexico due to pilot safety concerns. Instead, ground-counts conducted by Palacios and Avila (including 2013).

[c] Includes Western High Arctic brant. 3-year average considers most recent 3 years of annual counts.

[d] Izembek index from fall before Mid-winter Waterfowl Survey, includes Western High Arctic brant, and was updated Fall 2016 after extensive review. Percent Juvenile from NWR ground surveys.

[e] No survey conducted due to pilot survey concerns.

[f] The historical Alaska MWS index was recalculated in 2015, following the recommendation by Wilson and Dau 2015.

Snow Goose population and productivity indices from Wrangel Island, Russia, 1966–current.

	Population				Nesting			Brood Size		
Year	Adults	Breeding adults	% Juvenile	Total spring	Nests	% Successful	Clutch Size	At Nesting colony	At brood rearing area	Colony Size (ha)
1966							3.6			
1967							4.9			
1968										
1969		114,000			58,200		3.7			1,962
1970	120,000	120,000	20.0	150,000	60,000	96.0	3.7	3.5	2.5	2,600
1971	120,000	24,000	9.1	132,000	12,000	55.0	4.7	3.4	2.3	825
1972	106,000	36,000	0.6	107,000	18,000	45.0	4.2	3.5	2.3	950
1973	85,900	12,000	0.0	86,000	6,000	67.0	6.0	3.9		200
1974	69,500	32,000	0.7	70,000	15,000	0.0	4.7			800
1975	56,000	56,000	0.0	56,000	28,000	74.4	3.8	3.4	2.4	
1976	46,000	46,000	20.7	58,000	23,000	79.0	3.7	3.2	2.8	1,840
1977	57,200	10,000	16.1	68,200	5,000	76.8	5.0	3.7		400
1978	64,900	42,000	0.8	65,400	21,000	80.0	4.2	3.7	2.4	2,200
1979	62,100	60,000	26.5	84,500	30,000	90.0	3.8	3.6		1,860
1980	80,300	20,000	11.5	90,700	10,000	70.0	5.4	3.3		315
1981	86,200	78,000	3.2	89,000	39,000	95.0	4.0	3.7	3.1	2,118
1982	81,000	28,000	18.5	100,000	14,000	65.0	4.1	3.2	2.8	688
1983	92,800	3,400	2.4	95,000	1,700	5.9	4.8			125
1984	85,000	42,000	0.0	85,000	21,000	83.3	3.7	3.2	2.1	1,500
1985	80,000	50,000	5.4	85,000	25,000	87.7	3.7	3.2	2.4	1,457
1986	70,000	58,000	20.4	90,000	29,000	90.0	3.9	3.6	3.2	2,100
1987	85,000	47,000	15.0	100,000	23,500	80.0	3.7	3.4	2.8	1,900
1988	80,000	13,000	17.7	80,000	6,500	51.0	5.2	3.4	2.7	675
1989	70,000	60,000	1.4	70,000	30,000	60.0	3.8	3.3		1,025
1990	60,000	53,000	0.0	60,000	26,500	49.2	3.8	3.2	2.2	940
1991	56,000	41,600	6.6	60,000	20,800	82.0	4.1	3.4	2.7	888
1992	56,000	46,200	20.0	70,000	23,100	70.1	4.0	3.5	3.5	742
1993	64,500	52,200	0.8	65,000	26,100	85.1	3.9	3.2		910
1994	52,500	30,000	25.0	70,000	15,000	13.0	2.8	2.1		1,000
1995	64,000	8,800	0.8	65,000	4,400	50.0	4.7	2.8		430
1996	75,000	75,400	0.0	75,000	37,700	75.4		3.7	2.4	740
1997	70,000	55,200	15.0	85,000	22,600	71.2	4.0	3.5		628
1998	80,000	31,800	10.0	90,000	15,900	66.0	4.6	3.5		750
1999	85,000	20,800	5.6	90,000	10,400	75.0	4.7	3.3		278
2000	87,400	49,600	8.0	95,000	24,800	87.8	3.5	3.2	2.8	738
2001	92,400	48,000	12.0	105,000	24,000	87.0	3.6	3.2	2.3	900
2002		60,600		110,000	30,300	81.5	4.0	3.5	3.0	855
2003		55,000		115,000	27,500	77.5			2.2	900
2004	111,700	56,800	4.9	117,500	28,400	75.0	3.6	3.2		838
2005		95,800		117,500	47,900	82.3	4.2	3.7	3.3	900
2006	100,800	93,200	23.9	132,500	46,600	87.7	4.0	3.7	3.2	875
2007		79,000		140,000	39,500	84.4	4.0	3.5	3.1	1,100
2008		20,000		140,000	10,000	35.0				
2009		108,800		132,500	54,400	79.5	4.1	3.6		
2010		10,000		150,000	5,000					
2011		144,000	5.0	155,000	72,000	81.0	4.2	3.7		
2012[a]										
2013				160,000	78,300	75.8	3.7	3.2	2.7	1,063
2014[a]										
2015	228,500	215,600	4.8	240,000	107,800	89.1	4.0	3.7		2,680
2016	251,000	236,000	20.0	300,000	118,000	89.5	3.9	3.7		3,240
Averages:										
Long Term	87,019	58,640	9.5	104,484	30,280	70.5	4.1	3.4	2.7	1,145
3-yr	193,433	198,533	9.9	233,333	101,367	84.8	3.9	3.5	3.0	2,328
% Change from:										
Long Term	204.9	332.2	116.6	199.9	316.5	27.8	-5.7	8.8	-	196.6
3-yr	70.7	91.6	78.0	62.2	37.2	9.2	-1.5	4.3	-	73.1
2015	9.8	9.5	316.7	25.0	9.5	0.4	-2.5	0.0	-	20.9

[a]Data were not gathered in 2012 or 2014.

Appendix D. Possible Effects of Spinning Wing Decoys in California

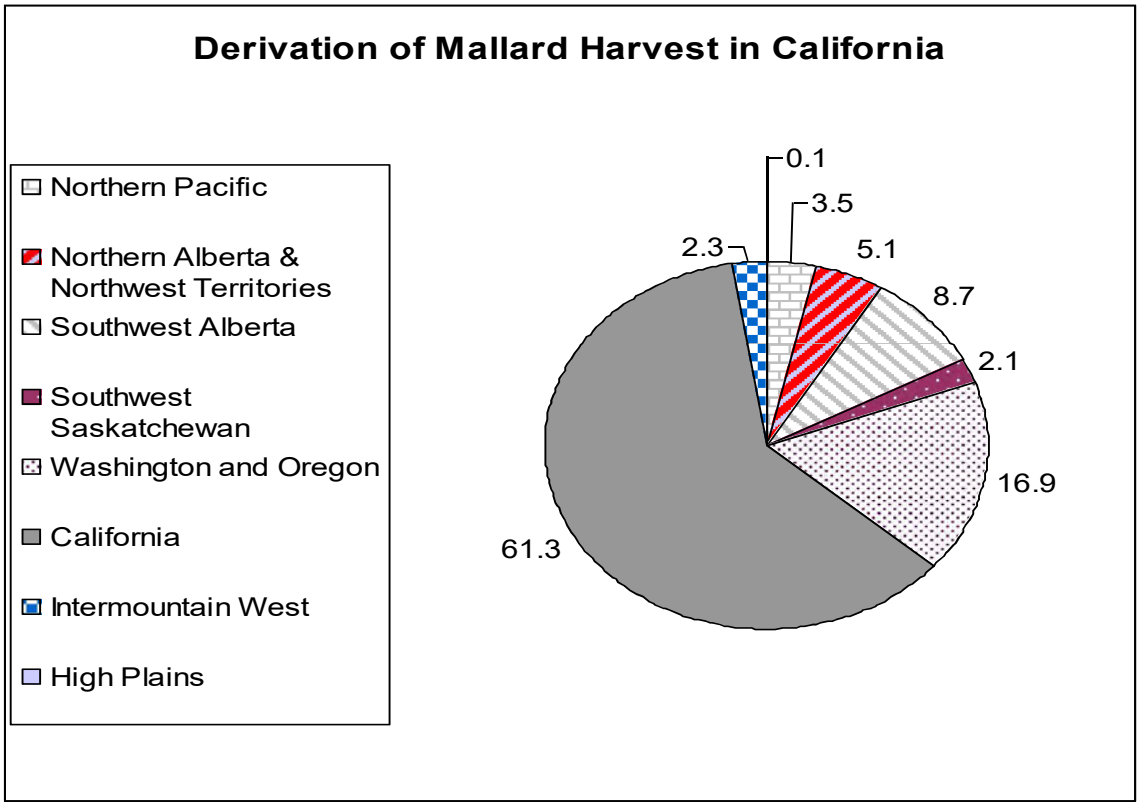
Introduction

The use of mechanical or electronic duck decoys (also known as spinning wing decoys (SWDs), “rotoducks”, “motoducks”, motion wing decoys, etc.) may lead to increases in harvest beyond those anticipated by existing bag limits and season length. Some hunters and other members of the public are opposed to the use of these devices because they believe that the devices may lead to excessive harvest or exceed the bounds of “fair chase” and eliminate the emphasis on traditional hunting methods.

The Department examined the results of studies, existing monitoring programs, and initiated additional analyses to assess the potential effects of SWDs on the harvest of ducks. Monitoring programs (i.e. estimates of breeding populations, total harvests) are not designed to measure the effectiveness of a single harvest method, such as a SWD.

These analyses mostly focus on mallards because mallards are the most abundant breeding duck in the State, are the most frequently occurring duck species in the harvest (Appendix E) and, unlike other species of ducks, are mostly derived from within California (62%; J. Dubovsky, USFWS, unpub data, Figure D-1).

Figure D-1. Derivation of Mallard Harvest in California.



Department Surveys on the Use and Effectiveness of SWDs

The widespread use of SWDs in California began in 1998. The Department compared the daily harvest of hunters on public hunting areas who said they used SWDs to those that said they did not during the 1999-00 to 2001-02 seasons.

Hunters were sampled on five public hunting areas (Delevan National Wildlife Refuge, Upper Butte Basin Wildlife Area, Grizzly Island Wildlife Area, Los Banos Wildlife Area, and Mendota Wildlife Area) on 10 randomly-selected dates during the 1999-00 hunting season and again on five areas (Sacramento National Wildlife Refuge, Upper Butte Basin Wildlife Area, Grizzly Island Wildlife Area, Los Banos Wildlife Area, and Mendota Wildlife Area) on 14 random days during the 2000-01 hunting season. During the 2001-02 hunting season, sampling occurred on 10 days picked at random on the Delevan National Wildlife Refuge, Upper Butte Basin Wildlife Area, Grizzly Island Wildlife Area, Los Banos Wildlife Area, and Mendota Wildlife Area.

The results from nearly 23,000 hunter-days from the three year survey are summarized in Table D-1. Use of SWDs generally increased in the second year of study, especially in the Sacramento Valley, but use declined on some areas during the third year of study on some areas. SWD use varied from 16 to 59 percent of hunters. There were no other differences between years. Total ducks harvested was significantly greater for hunters using SWDs on all five areas, and the overall average increase was about 1 bird per hunter.

Although the average number of mallards taken by hunters using mechanical duck decoys trended higher, harvest on only one of the five areas was higher at a statistically significant level in one year. The overall average increase in mallards bagged for hunters using SWDs was about 0.5 mallards per hunter-day.

Although average numbers of ducks taken by hunters using SWDs were higher than the averages by hunters that did not use the devices, and use of the devices was common, overall duck harvest on the public hunting areas in 1999 (201,000); 2000 (165,000); and 2001 (157,000); was lower than in 1998 and the overall ducks per hunter per day was essentially unchanged.

Effectiveness of December 1st Regulation

Beginning in 2001, the Commission adopted a prohibition on the use of electronic or mechanically operated spinning-wing decoys from the beginning of the waterfowl season until November 30th. Before and after the regulation change, a variety of changes have occurred with mallard harvest regulations (i.e. opening days, bag limits, season length). The Department analyzed public hunt results to see if any changes

have occurred with mallard harvest in relation to the regulation change. Mallards were chosen for this analysis, since the December 1st regulation was created when the

Table D-1. Use and success of hunters using SWD on selected public hunting areas.

Area	Year	% Who Used Decoy	Total Duck Harvest	Percent Mallard	Avg Mallards per Hunter	Avg Ducks per Hunter	Sample Size	Total Annual Hunter Visits
Little Dry Creek	1999-00	52 - YES	2431	36	1.4	3.9	1197	5030
		48 - NO	1610	34	1	2.8		
	2000-01	59 - YES	2707	47	1.4	2.9	1550	4650
		41 - NO	1006	51	0.8	1.6		
	2001-02	52 - YES	2697	42	1.86	4.42	1165	4188
		47 - NO	1553	47	1.32	2.79		
Delevan	1999-00	52 - YES	1643	17	0.5	2.6	1210	7061
		48 - NO	1177	18	0.4	2		
	2000-01	not sampled						
	2001-02	45 - YES	1831	30	1.09	3.55	1132	5941
		54 - NO	1251	30	0.6	2.02		
Sacramento	1999-00	not sampled						
	2000-01	57 - YES	1271	24	0.5	1.8	1212	8656
		43 - NO	904	32	0.6	1.7		
	2001-02	not sampled						
Grizzly Island	1999-00	29 - YES	1129	14	0.3	2	1978	8658
		71 - NO	1998	18	0.3	1.4		
	2000-01	36 - YES	1508	28	0.5	1.8	2305	7176
		64 - NO	1852	26	0.3	1.2		
	2001-02	39 - YES	699	17	0.24	1.42	1250	5880
		60 - NO	652	17	0.14	0.85		
Los Banos	1999-00	24 - YES	416	31	0.6	1.8	981	4314
		76 - NO	786	28	0.3	1.1		
	2000-01	41 - YES	802	31	0.7	2.1	914	4698
		59 - NO	448	35	0.3	0.9		
	2001-02	34 - YES	454	16	0.32	2	654	4427
		65 - NO	502	23	0.26	1.17		
Mendota	1999-00	16 - YES	790	16	0.4	2.4	2133	9886
		84 - NO	3179	13	0.2	1.8		
	2000-01	24 - YES	1224	29	0.6	2	2638	10196
		76 - NO	2716	20	0.3	1.3		
	2001-02	28 - YES	1842	12	0.33	2.59	2497	11132
		71 - NO	3056	12	0.22	1.71		

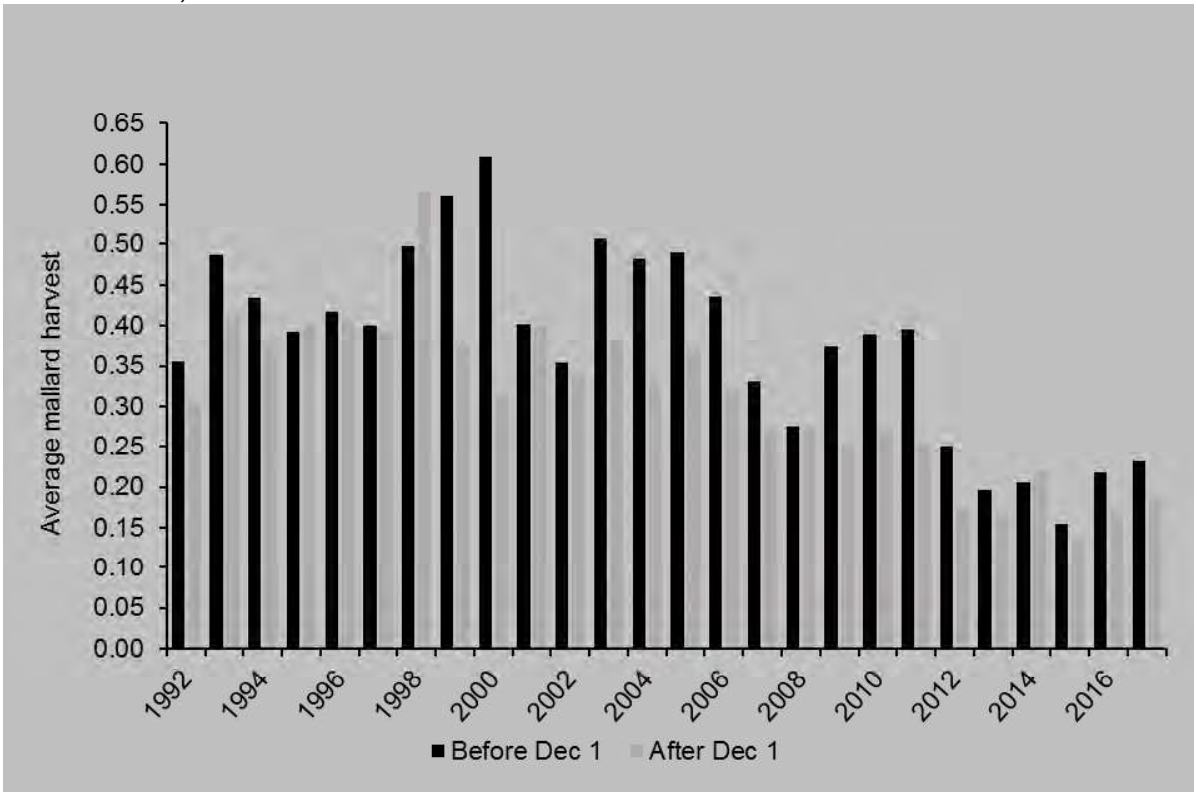
breeding population of mallards in California was declining. Beginning in December, a larger percentage of migrant mallards start appearing in the harvest.

A mallard per hunter visit was calculated for all public hunt areas. Although waterfowl zones and other issues exist (e.g. delay due to rice harvest), these were controlled for by computing an average mallard take per hunter day on all areas before and after December 1st (including this date). Additionally, for analysis, data from 1992-2006 was partitioned into three categories: 1992-1997, 1998-2000, and 2001-2006). Use of SWDs began during the 1998-1999 hunting season in California, and continued without limitations until the December 1st restriction starting with the 2001-02 waterfowl hunting season. Therefore we have a five year buffer (before and after restriction) on each side of their uncontrolled use on public hunting areas (Figure D-2). Also Included are past years (2007-2016) average mallard take per day on public areas.

Based on statistical tests (ANOVAs), there was no difference in mallard harvest per hunter day during the three time periods after December 1st (P = 0.617). However, there were significant differences in hunter harvest per day among the three time periods before December 1st (P = .005). On average, the mallard harvest per hunter-day was 33% larger from 1998–2000 than 1992–1997 before December 1st. The mallard harvest per hunter day was 26% larger for the same period when compared to 2001–2006 seasons. Based on public hunt results, it appears that the December 1st restriction has significantly decreased the before December 1st harvest on mallards on public hunt areas (on a hunter-day basis).

Figure D-2. Average mallard harvest on the public hunting areas relative to

December 1, 1992–2017 hunt seasons.

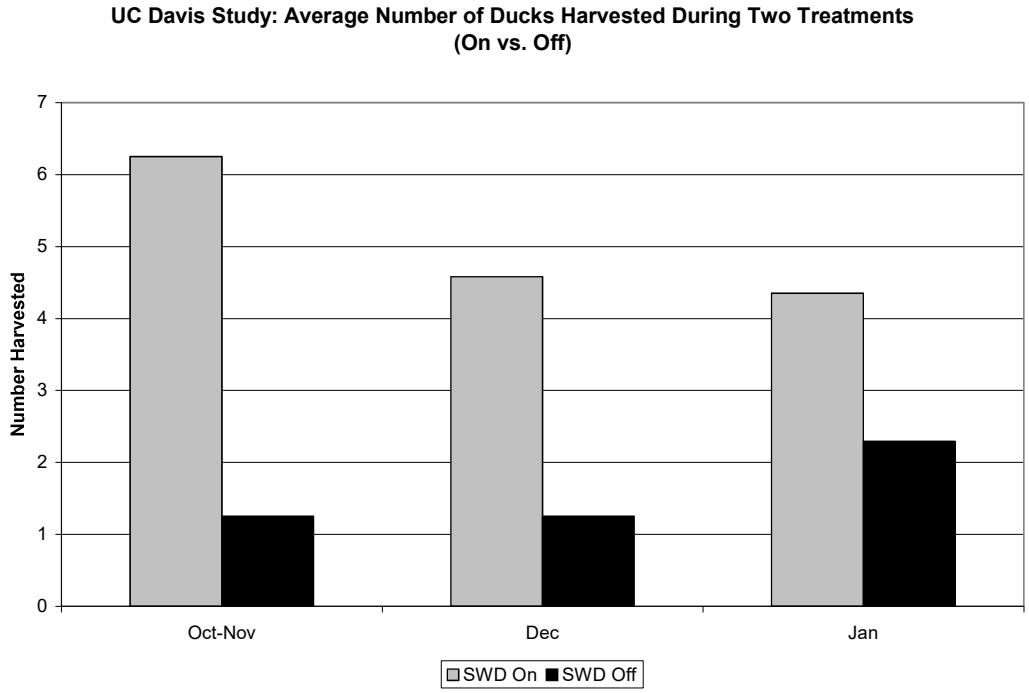


Studies and Scientific Literature on Spinning Wing Decoys (SWDs)

University of California Davis Study

A more rigorous study during the 1999-00 hunting season by the University of California, Davis, also indicated an increase in harvest, particularly early in the season. In this study, hunters were observed during alternating 30 minute periods with SWDs in use and not in use. A total of 37 hunts were conducted. Overall, when hunters used a mechanical duck decoy, they shot about 2.5 times as many ducks as when they didn't use one. Early in the season, hunters using the device shot nearly 7 times more ducks than when the same hunters didn't use the device (Eadie *et al*. 2001). Summary information from this study is provided in the Figure D-3.

Figure D-3. Summary results from University of California, Davis Study



Arkansas Study

In Arkansas, as study was conducted during 2 years (2001-02 and 2002-03) to evaluate their effectiveness. Overall, 272 hunters killed 537 ducks during 101 hunts. Mallards comprised 57% of the harvest. Of ducks taken, 64 percent were harvested during periods when decoys were on and only 36 percent when off. Results of paired observations indicate that kill per hunter was 1.8 times greater with decoys on versus off. Similarly, 1.3 times as many flocks were seen per hunt, 1.8 times as many shots were fired per hunter and 1.2 times as many cripples were lost during periods when SWDs were on versus off. Age ratios of harvested mallards were similar with decoy use (Imm./Adult ratio = 0.26 when ON and Imm./Adult ratio = 0.23 when OFF), however, adult mallards were 2 times more likely to be shot during periods with a robo" decoy on than off. Body mass was similar for mallards shot and retrieved during both treatments (ON and OFF) (M. Checkett, Arkansas Game & Fish Commission, unpub. data).

Manitoba, Canada, Study

In Manitoba, Canada, during the falls of 2001 and 2002, 99 experimental marsh and 55 experimental field hunts were conducted. Each hunt consisted of a series of equal and alternating 15-minute experimental (SWD on) and control (SWD off) periods, separated by a 3-minute buffer. Duration of total hunts ranged from 1.0 to 3.0 hours with an average of 1.4 ± 0.5 hours. Experimental marsh hunts indicated that mallards were 1.9

times more likely to fly within gun range, the kill rate was 5.0 times greater, size adjusted body mass of harvested mallards was greater, and the crippling rate was 1.6 times lower in experimental than control periods. Field hunts indicated that mallards were 6.3 times more likely to fly within gun range, kill rate was 33 times greater, and crippling rate was 2.2 times lower in experimental than control periods. A SWD activity*age interaction indicated that adult males harvested during experimental periods had higher size adjusted body mass than that of juveniles mallards harvested during experimental periods. However, body condition of harvested adult and juvenile mallards did not differ significantly during control periods (Caswell and Caswell 2004).

Minnesota study

In Minnesota, due to concerns about the potential increased harvest of local mallards, 219 experimental hunts with 367 volunteer hunters were conducted during 1,556 sampling periods (both ON and OFF treatments) during the 2002 waterfowl season. When using a SWD, mallards were 2.91 times more likely to respond to the decoy (within 40 m) as compared to when off. Flock size was larger when the decoy was on, as compared to off. The number of mallards killed/hour/hunter was 4.71 times higher when the SWD was on. There was no difference in crippling loss in treatment types (ON vs. OFF). Age ratios of mallards were 1.89 (HY/AHY birds) versus 0.61 when ON and OFF, respectively. Overall, the study predicted an increase in mallard harvest, if SWDs became widely used in Minnesota (Szymanski and Afton 2004).

Missouri Study

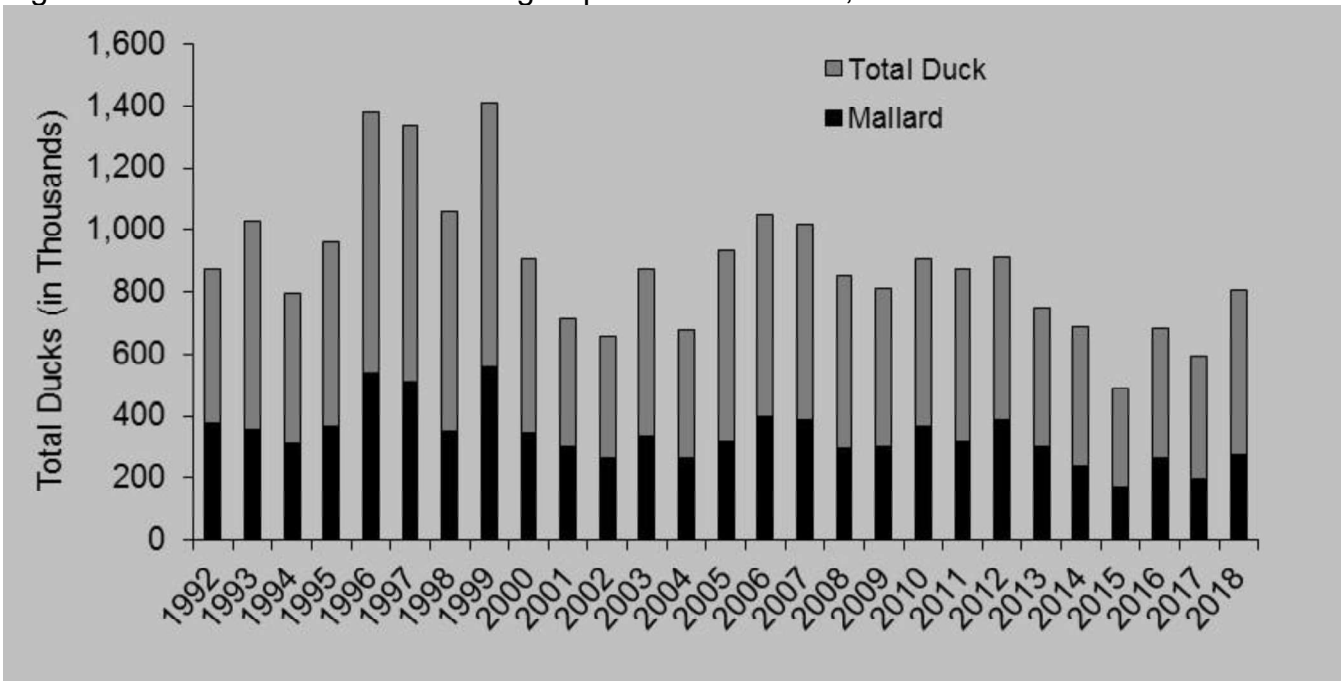
In Missouri, efforts to evaluate the use and attitudes regarding SWD were completed in 2000 and 2001. Hunters using SWDs shot and retrieved 1.28 more total ducks per hunting party (2-3 hunters) and 0.82 more male mallards than when not using a SWD. Missouri waterfowl hunters hunting on public areas were more successful in 2000 when using SWDs than hunters who did not use SWDs. The overall difference in success rate between users and non-users was 0.78 ducks per hunter trip; however, about half of this difference was attributed to factors other than SWDs, such as greater hunting skills. The remaining increase in hunting success, between 0.32 and 0.45 ducks/ hunter trip (13%-19% increase in success rate), was attributed to SWDs (A. Raedecke, Missouri Department of Conservation, unpub. data).

These brief summaries of the additional results and other studies (Nebraska) were summarized in Ackerman et al (2006). Overall, 70.2% of all ducks were harvested when the SWDs were used, as compared to 29.8% when the decoy was not in use. Significant results indicated that the probability of being shot increased with latitude (study location) and annual survival rates of species. These results support that fact that ducks may be more naïve at the beginning of migration (i.e. Manitoba), as compared to late in migration (i.e. Arkansas). Ackerman et al. (2006) suggested that these studies “only measured the effect of SWDs on kill rates of ducks and these rates will not necessarily translate into overall changes in population harvest rates.”

California breeding populations

The Department annually estimates the breeding population of ducks in California. Results of the current year breeding population survey are not usually available until June of each year. Based on the mallard breeding population, a decline was observed following the 1999 waterfowl season, but this trend was not statistically significant because the annual estimates have large confidence intervals. More recent mallard breeding population levels are similar to the mid-1990s levels when SWDs were not being used for duck hunting. Furthermore, breeding populations of mallards and total ducks have remained relatively stable since 2008 (Figure D-4).

Figure D-4. California Duck Breeding Population Estimates, 1992–2018



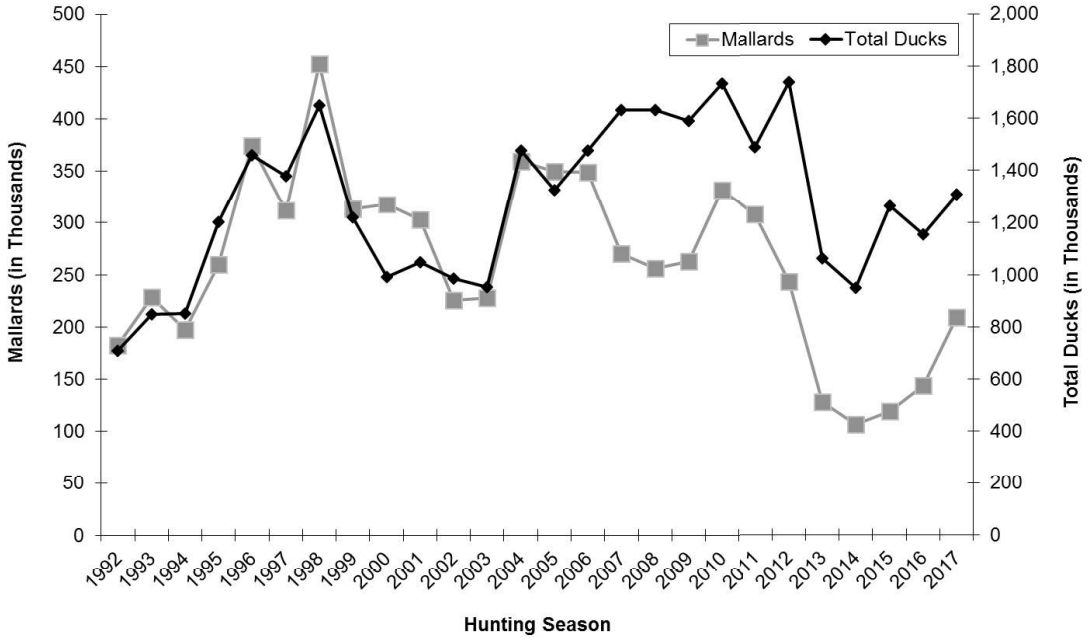
Total estimated duck harvest

The Service annually estimates the harvest of ducks in California and though out the United States. However, the most recent year of harvest is not available until July of the following year. For example, at this time, harvest information from the 2017-18 season is available but harvest estimates from 2018-19 will not be available until July, 2019. There remain many factors (e.g. regulations, weather, hunter participation, age ratios in duck populations, etc.) besides the use SWDs that may impact hunter success on an individual hunt, which may transfer to decreased or increased total statewide duck harvest.

Relationships Among Survival & Harvest in Mallards: Issues in Findings

The studies cited above indicate that the use of SWDs increases harvest at the individual hunt level, however, despite the widespread use of SWDs (at least when last measured) overall estimates of harvest have not changed at the same magnitude as indicated in the individual hunt studies (Appendix E, Figure D-5). To have a biological effect at the population level, SWDs would have to be shown to lead to increased harvests and those increased harvests would have to be shown to lead to decreased annual survival rates. Other unmeasured variables act on populations during and after hunting seasons and it is not possible to unequivocally attribute potential population level effects due to SWDs through existing monitoring programs. However, banding data are the most likely of these monitoring programs that provide any inference on the role of SWDs on population parameters of ducks.

Figure D-5. Mallard and Total Duck (all species combined) harvest in California.



Numerous scientific studies have attempted to improve the understanding of the relationship among harvest rates and annual survival rates of waterfowl (Anderson and Burnham 1976, Nichols *et al*. 1984, Nichols and Hines 1982, Burnham and Anderson 1984, Johnson *et al*. 1986, Trost 1987, Raveling and Heitmeyer 1989, Nichols 1991, Smith and Reynolds 1992, Conn and Kendall 2004). Most of these studies have relied on banding data. As an example, Smith and Reynolds (1992) concluded that survival rates increased in response to restrictive regulations, and they rejected the completely compensatory model of population dynamics. Conversely, Sedinger and Rextad (1994) contested those conclusions because Smith and Reynolds pooled data and their analyses had low statistical power. Thus, there is still debate whether existing harvest levels affect survival rates in mallard populations. Partially due to this debate and uncertainty, the Service implemented Adaptive Harvest Management in 1995 to help reduce the uncertainty about the role of harvest and survival rates in population dynamics of mid-continent mallards.

The ability to detect significant changes in estimates of mallard recovery and survival rates in California, and relate these changes solely to the use of SWDs, is difficult if not impossible for several reasons.

First, survival and recovery rates are calculated through modeling using data from banded ducks. The data from these banded ducks consists of the number of birds banded (categorized by age, sex, date and location of banding) and reports of encountered bands (usually through hunting for game birds). The number of birds encountered divided by the number of birds banded is the recovery rate. However, not all bands encountered are reported, and an estimate of reporting rate is needed. The product of the recovery rate and the reporting rate is the harvest rate.

Reporting rates have been estimated because this rate is necessary to estimate the harvest rate and harvest rate is necessary to understand the relationship between harvest and population dynamics. Reporting rates vary widely due to band type and even geography (Nichols *et al*. 1991, 1995, Royle and Garretson 2004). Band types (i.e. their inscriptions) have changed over time. Before the 1990s, “avise” bands were used. These bands were inscribed with “AVISE BIRD BAND, WRITE WASHINGTON DC USA”. Later, “address” bands were introduced with the inscription “WRITE BIRD BAND LAUREL MD 20708”. These bands were replaced beginning in 1995, but not entirely until about 1999, with “toll-free” bands that were inscribed with “CALL 1 800 327 BAND and WRITE BIRD BAND LAUREL MD 20708 USA”. The adoption and widespread advertising of this new reporting method greatly increased reporting rate and apparent recovery rates. Due to the overlap of band types and the timing and duration of research into reporting rates, harvest rates can not be calculated for all areas in all years.

Secondly, changes in basic hunting regulations (e.g. season length and bag limits) occurred before and after the use of SWDs began. For instance, in 2001 (the first year

of the December 1 regulation), the season was 100 days long with a 7 mallard (2 hen) daily bag limit whereas in 2002, the season was 74 days long with a 5 mallard (1 hen) daily bag limit. Thus, changes in harvest and survival rates due to basic regulations could be confounded with any changes to these parameters due to the use of SWDs. More inferences could be made from the standard monitoring programs with stabilized regulations over a period of time.

Third, duck (and presumably mallard) harvest varies annually due to non-regulatory effects (weather, hunter participation, etc.) and survival rates vary due to variation in natural mortality (disease, etc.) (Miller et al. 1988).

With these caveats in mind, the Department calculated recovery rates and survival rates for mallards banded in California between 1988 and 2005. These ducks were banded by the Department, the California Waterfowl Association, and the U.S. Fish and Wildlife Service. Only normal, wild mallards banded from June to September with standard USFWS bands were used in this analysis. The Department examined the data by age class (adult and hatch-year or immature) and sex. Survival and recovery rates were calculated using Brownie models (Brownie *et al.* 1985) in Program MARK (White and Burnham 1999). Harvest rates were calculated from recovery rates by incorporating reporting rates (Nichols *et al.* 1995, Royle and Garretson 2004). For comparison purposes, the Department summarized harvest rates for mid-continent mallards during liberal seasons (1979-1984) (Smith and Reynolds 1992) and for mallards from eastern Washington (1981-198) (Giudice 2003).

For data from mallards banded in California, the data were portioned into 4 time periods (Table D-3): Period 1 (Restrictive season lengths and bag limits, no SWD); Period 2 (Liberal season lengths and bag limits, no SWD); Period 3 (Liberal regulations with SWD, but no December 1 regulation) and, Period 4 (Liberal regulations with December 1 regulation). If SWD affected harvest and survival rates, harvest rates should be highest and survival rates lowest during Period 3. If regulations by themselves change these parameters, harvest rates should be higher and survival rates lower in Period 2 compared to Period 1. If SWD had an effect, survival rates should be lower and harvest rates higher in Period 3 compared to Period 2. If the December 1 regulation had an effect, harvest rates should be lower and survival rates higher during Period 4 compared to Period 3.

Table D-3. Time periods used to summarize basic regulations, SWD use, and the December 1 regulation.

Time Period	Starting Season	Ending Season	Regulations	Pre or Post-SWD	Dec 1st Restrictions
1st	1988	1994	Conservative	Pre-SWD	No
2nd	1995	1997	Liberal	Pre-SWD	No
3rd	1998	2000	Liberal	Post-SWD	No

4th	2001	2004	Liberal	Post-SWD	Yes

Unfortunately, due to the introduction of “toll-free” bands and the increasing and changing reporting rates, harvest rate estimates are only available for Periods 1 and 4. Harvest rates for adults between Period 1 and Period 4 were unchanged and lower than those rates for eastern Washington and mallards from the mid-continent region (Table D-4). However, harvest rates of immature mallards banded in California have increased between periods 1 and 4 by 62 and 30 percent for males and females, respectively. Thus, the combination of regulation changes and use of SWD did not change harvest rates of adults, but the combination of more liberal regulations and the use of SWD did change harvest rates of immature mallards. The combination of liberalized regulations and SWD appears to have increased the harvest rate of mallards banded in California to higher levels than occurred in the mid-continent region or eastern Washington (Table D-4).

Table D-4. Harvest rates for mallards banded in California (restrictive and liberal periods), eastern Washington (liberal period) and the mid-continent region (liberal period).

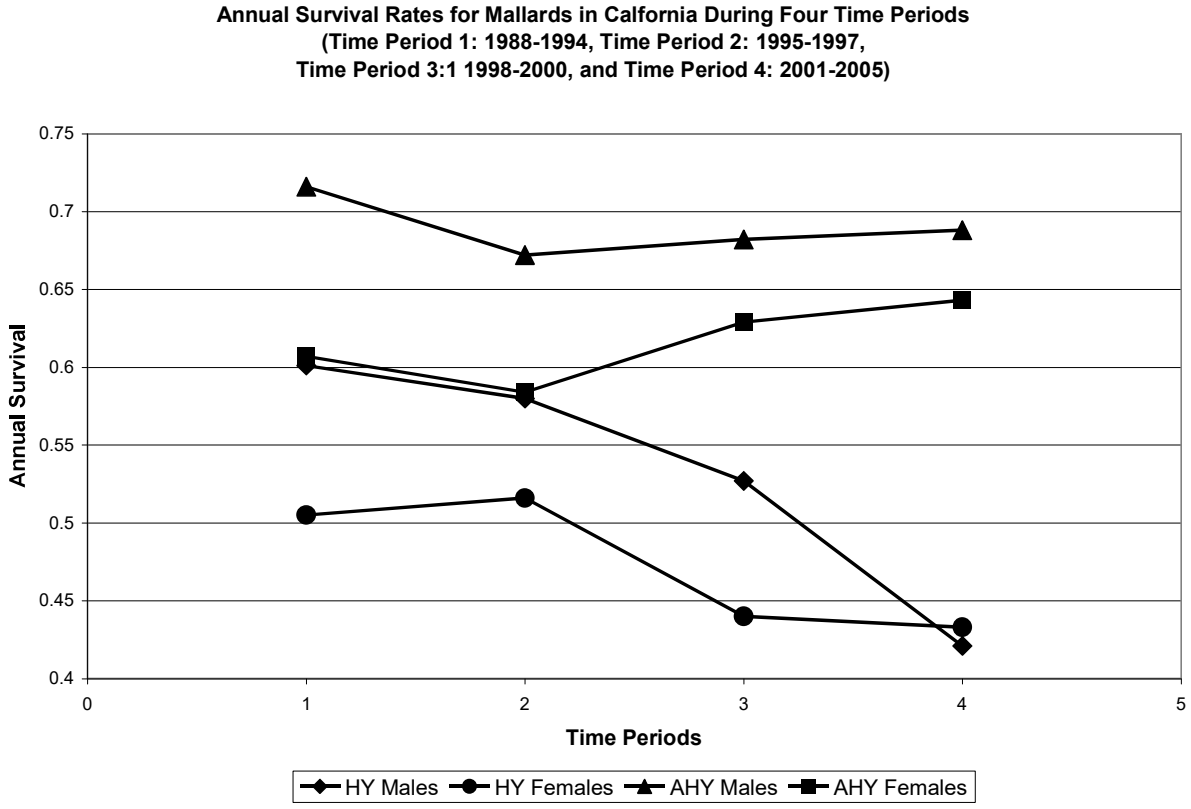
	California (restrictive)	**California (liberal)**	**Eastern Washington**	**Mid-Continent (liberal)**
Adult Males	0.138	0.138	0.172	0.150
Hatch-Year Males	0.202	0.327	0.286	0.228
Adult Females	0.058	0.058	0.100	0.097
Hatch-Year Females	0.143	0.186	0.172	0.157

Survival rates could be calculated for each cohort (age and sex) for each period (Figure D-6) since recovery and survival rate are not conditional on each other. Covariance among recovery and survival rates must be addressed to understand the impact of harvest on survival rates. Although recovery rates may have increased during these periods, it would not have as large an impact on survival rates, as compared to computed harvest rates. Furthermore, the grouping into time periods also correlates with the introduction of different band types.

Survival rates were constant for adult birds of sexes irrespective of harvest regulations, the use of SWD or the December 1 regulation (Figure D-6). However, survival rates for immature birds declined but only for males was the decline statistically significant (P=0.048).

From these analyses, it appears that adult mallard recovery, harvest and survival rates have not changed despite changes in regulations, the use of SWDs, or the imposition of the December 1 regulation. In contrast, immature mallard harvest rates have increased and survival rates have declined, but these changes may have been due to changing basic regulations, the use of SWDs, both, or other unmeasured variables.

Figure D-6. Annual survival rates of Mallards banded in California.



Public Perception of SWDs

The findings of this section have concentrated on biological information as related to the SWD in California. However, since past public views to the Commission has demonstrated different views on "fair chase", public opinion information has been added to this review of this topic. In 2005, D. J. Case & Associates, as commissioned by the Association of Fish and Wildlife Agencies, released the findings of the National Duck Hunter Survey. According to this study, 55% of California duck hunters stated that SWDs should be allowed, whereas 26% opposed their use and 19% had no opinion on the subject. Other surveys have shown a wide variety of responses to their opinions on SWDs. For instance, California Waterfowl Association's (CWA) 2006

survey indicated that a majority of hunters opposed electronic decoys, but accepted wind driven decoys (CWA, pers. comm.).

Summary of Findings

There is substantial evidence that SWDs can/have increased harvest and harvest potential on an individual hunt basis. Although SWDs have been shown to increase potential harvest, total harvest estimates have not increased at the same magnitude. Furthermore, SWDs have not increased harvest rates nor decreased survival rates on adult mallards. In hatch-year mallards, harvest rates have increased over 60 percent on males, and survival rates have significantly declined. However, this is not a cause-and-effect relationship because other unmeasured variables were likely occurring simultaneously. The implementation of the December 1 regulation appears to have reduced daily harvest rates of mallards on public hunt areas when compared to unrestricted use of SWDs (1998–2000).

There is no clearly explicit link detectable through existing monitoring programs (or population level measures) between the introduction of SWDs and changes in measured population parameters. There remains no substantial evidence either for or against their large-scale effect on waterfowl populations. There are strongly held opposing positions on the “fair-chase” and other aspects of SWDs. For this reason, the Department has provided an alternative in Chapter 3.

Appendix E. Estimated Retrieved Harvest of Certain Ducks in California, 1962–2017.

Year	Mallard	Gadwall	American Wigeon	G-w Teal	B-w/Cin. Teal	Northern Shoveler	Pintail	Wood Duck	Red-head	Canvas-back	All Other Species	TOTAL
1961	197.0	19.2	183.9	153.3	28.9	108.4	299.3	7.3	0.8	0.4	49.3	1,047.8
1962	167.0	17.5	128.5	145.1	48.8	86.8	285.3	12.1	1.0	0.0	70.1	962.2
1963	267.5	42.3	159.2	242.5	59.5	182.3	415.7	14.7	4.3	0.0	72.0	1,460.0
1964	249.0	40.5	166.3	214.6	49.4	77.2	342.0	17.0	7.8	9.2	74.2	1,247.3
1965	295.0	41.7	202.2	216.2	59.1	139.6	373.0	34.7	10.6	8.3	79.9	1,460.3
1966	288.4	51.5	215.2	267.1	36.6	162.3	563.0	13.1	8.6	39.9	97.5	1,743.2
1967	446.0	85.3	311.8	363.1	73.1	194.2	798.5	24.3	9.8	15.5	133.6	2,455.2
1968	236.2	34.2	169.6	262.5	42.6	111.5	381.1	11.3	5.5	10.5	68.3	1,333.4
1969	331.7	43.3	229.9	332.2	49.2	197.4	900.5	18.8	6.0	12.3	94.4	2,215.8
1970	371.0	43.5	264.0	361.3	38.2	201.8	1,032.9	21.4	12.9	26.9	77.7	2,451.5
1971	313.4	66.0	255.3	295.9	44.6	189.3	752.1	14.2	13.2	34.4	96.6	2,075.0
1972	321.8	49.3	231.5	332.6	64.9	157.4	715.3	21.2	5.8	0.9	90.2	1,991.0
1973	219.4	32.4	145.6	245.2	94.8	101.1	477.0	32.7	9.5	13.8	79.5	1,451.0
1974	292.3	60.2	194.3	319.6	59.8	167.4	712.4	21.7	8.9	27.1	59.4	1,923.0
1975	293.1	46.5	193.9	344.7	47.7	184.5	746.9	19.3	5.4	28.1	49.5	1,959.6
1976	305.6	37.6	278.7	403.0	42.5	185.6	680.6	23.4	6.6	34.2	82.9	2,080.6
1977	229.7	27.4	162.4	306.4	44.8	115.3	350.8	24.3	7.1	22.4	82.9	1,373.5
1978	294.3	39.2	179.4	405.1	64.9	161.0	596.0	29.0	8.2	14.1	66.0	1,857.2
1979	260.7	47.9	168.3	292.0	42.4	112.6	641.5	12.4	6.6	14.8	63.1	1,662.3
1980	238.6	64.2	165.6	259.1	27.1	108.4	410.0	40.2	10.8	10.3	67.6	1,401.8
1981	239.0	33.6	125.8	211.8	28.9	120.4	261.0	23.8	7.9	14.3	73.8	1,140.3
1982	284.2	53.8	122.8	266.5	50.3	140.2	327.9	26.2	10.9	10.6	59.6	1,353.1
1983	298.6	59.2	103.7	203.7	58.9	112.4	334.3	23.1	14.8	6.9	71.4	1,287.0
1984	265.1	43.3	94.6	178.2	52.6	91.9	194.9	15.7	6.6	12.2	50.8	1,005.9
1985	261.8	53.6	106.0	180.7	28.6	99.6	200.3	9.5	6.7	27.5	52.7	1,027.0
1986	257.6	57.7	113.9	176.8	19.0	86.6	194.5	20.2	4.4	16.3	43.2	990.2
1987	228.4	50.4	124.3	214.1	29.4	113.1	243.8	11.8	5.3	12.6	49.8	1,083.0
1988	139.7	23.2	62.7	122.1	16.0	44.1	70.3	9.6	2.3	0.1	23.7	513.8
1989	175.8	42.1	71.8	185.0	31.9	64.2	91.6	15.9	4.6	7.2	33.3	723.3
1990	179.7	45.2	80.1	149.9	19.4	69.5	80.3	11.4	2.5	4.2	28.7	671.0
1991	161.2	40.4	94.3	169.7	13.7	49.4	81.3	14.3	1.8	4.7	23.0	653.9
1992	182.7	33.3	72.9	183.9	18.4	74.1	75.0	16.4	3.5	8.8	39.2	708.1
1993	228.4	63.1	77.3	219.2	25.7	60.2	90.5	31.9	5.6	10.2	37.1	849.2
1994	197.4	68.7	97.6	183.0	14.7	106.0	92.0	20.8	5.8	14.4	51.0	851.3
1995	259.8	85.4	159.2	291.2	35.4	101.5	162.7	28.8	9.0	10.2	59.6	1,202.8
1996	374.4	104.1	175.6	306.5	39.4	164.1	182.0	26.4	10.8	12.7	66.4	1,462.4
1997	312.2	79.4	162.0	311.6	36.9	172.6	188.2	22.5	11.7	17.1	67.3	1,381.5
1998	452.6	129.6	166.5	352.4	62.0	217.1	146.3	33.4	15.9	21.4	55.2	1,652.4
1999	328.2	69.4	153.9	285.5	66.8	116.1	123.3	25.6	5.0	13.8	47.9	1,235.5
2000	309.5	62.4	113.1	207.2	31.3	87.5	85.4	32.0	4.7	10.6	39.6	983.3
2001	307.9	65.4	146.9	200.5	36.1	111.6	89.7	32.5	4.3	6.6	51.5	1,053.0
2002	191.3	83.7	134.4	239.7	35.6	103.9	79.9	24.7	4.9	0.7	52.4	951.2
2003	288.1	79.7	112.8	218.0	46.2	96.2	79.2	25.2	8.2	7.0	51.5	1,012.1
2004	359.7	132.6	196.8	348.7	57.3	147.7	98.8	22.5	9.6	11.5	94.1	1,479.3
2005	349.8	105.0	176.8	297.6	58.2	128.8	115.7	39.4	7.8	4.8	43.3	1,327.2
2006	349.1	124.2	165.7	331.3	56.9	224.6	123.2	31.3	9.1	17.5	47.9	1,480.8
2007	270.3	122.2	218.8	402.9	43.4	275.3	137.9	33.7	9.5	32.6	86.4	1,632.9
2008	255.9	110.2	271.8	468.5	39.9	209.5	169.4	36.3	7.0	0.6	64.2	1,633.7
2009	262.4	117.9	195.3	387.5	35.3	157.7	177.1	27.1	6.6	9.8	63.6	1,591.4
2010	332.0	124.4	226.2	394.9	48.2	220.8	242.6	34.1	7.7	17.6	85.6	1,734.1
2011	308.1	106.2	169.8	311.9	36.9	253.9	201.6	21.0	14.3	15.9	47.2	1,489.1
2012	243.5	95.3	193.7	371.2	31.9	291.5	201.1	21.9	14.6	23.4	25.0	1,738.1
2013	127.9	60.7	152.5	258.8	22.0	197.3	130.5	5.5	7.7	30.0	67.9	1,062.3
2014	106.3	56.4	161.5	240.5	18.1	155.1	115.6	9.3	3.8	15.5	66.7	948.8
2015	119.3	83.4	221.1	327.5	19.2	233.0	161.5	8.0	4.4	25.3	62.2	1,266.3
2016	143.6	71.2	158.7	381.9	33.7	139.4	135.4	11.9	4.1	17.7	55.7	115.3
2017*	209.3	112.4	185.4	356.7	45.0	169.3	119.4	23.8	8.3	15.6	60.3	1,305.5
Averages:												
1961-17	262.8	65.6	164.4	275.4	41.4	143.0	299.6	21.8	7.4	14.2	62.3	1,346.5
1961-65	235.1	32.3	168.0	194.3	49.2	118.9	343.1	17.2	4.9	3.6	69.1	1,235.5
1966-70	334.7	51.6	238.1	317.2	47.9	173.4	735.2	17.8	8.6	21.0	94.3	2,039.8
1971-75	288.0	50.9	204.1	307.6	62.4	159.9	680.7	21.8	8.6	20.9	75.0	1,879.9
1976-80	265.8	43.2	190.9	333.1	44.3	136.6	535.8	25.8	7.9	19.2	72.5	1,675.1
1981-85	269.7	48.7	110.6	208.2	43.9	112.9	263.7	19.7	9.4	14.3	61.7	1,162.7
1986-90	196.2	43.7	90.6	169.6	23.1	75.5	136.1	13.8	3.8	8.1	35.8	796.3
1991-95	205.9	58.2	100.3	209.4	21.6	78.3	100.3	22.4	5.1	9.7	42.0	853.1
1996-00	355.4	89.0	154.2	292.6	47.3	151.5	145.0	28.0	9.6	15.1	55.3	1,343.0
2001-05	299.4	93.3	153.5	260.9	46.7	117.6	92.7	28.9	7.0	6.1	58.6	1,164.6
2006-10	293.9	119.8	215.6	397.0	44.7	217.6	170.0	32.5	8.0	15.6	69.5	1,614.6
2011-15	181.0	80.4	179.7	302.0	25.6	226.2	162.1	13.1	9.0	22.0	53.8	1,300.9
2016-17	176.5	91.8	172.1	369.3	39.4	154.4	127.4	17.9	6.2	16.7	58.0	710.4
% Change from:												
2016	45.8%	57.9%	16.8%	-6.6%	33.5%	21.4%	-11.8%	100.0%	102.4%	-11.9%	8.3%	1032.3%
1961-17	-20.4%	71.4%	12.8%	29.5%	8.6%	18.4%	-60.1%	9.4%	12.3%	9.6%	-3.3%	-3.0%
% State's Total Duck Harvest:												
2017	16.0%	8.6%	14.2%	27.3%	3.4%	13.0%	9.1%	1.8%	0.6%	1.2%	4.6%	
1961-17	19.5%	4.9%	12.2%	20.5%	3.1%	10.6%	22.3%	1.6%	0.5%	1.1%	4.6%	

* Preliminary Data

Appendix F. Possible Effects of Climate Change Impacts on Waterfowl

Over the long term climate change models suggest temperature increases in many areas, both increases and decreases in precipitation, its timing, sea level rise, changes in the timing and length of the four seasons, declining snow packs and increasing frequency and intensity of severe weather events. Many uncertainties make it difficult to predict the precise impacts that climate change will have on wetlands and waterfowl. The effects of climate change on waterfowl populations, including their size and distribution, will probably be species specific and variable, with some effects considered negative and others considered positive (Anderson and Sorenson 2001). For example, a longer and warmer ice-free season in the Arctic would be expected to result in higher overall reproductive success for Arctic nesting geese (Batt 1998).

Breeding Season

Increasing spring temperatures have led to earlier arrival of waterfowl on northern breeding areas (Murphy-Klassen et al. 2005), yet nest survival has not decreased at this point of time (Drever and Clark 2007). In fact, earlier nest initiations are often more successful (Emery et al. 2005, Sedinger et al. 2008). However, future changes in wetland distribution and type (Johnson et al. 2005) on northern breeding grounds may impact settling patterns (Johnson and Grier 1988), and potentially recruitment for certain species through differences in breeding probability (Krapu et al. 1983), nest survival, and duckling survival. In California, areas with wetland brood habitat may become more limited if precipitation decreases with increasing temperatures, as predicted for the prairie pothole region of the United States and Canada (Sorenson et al 1998). Production of waterfowl that rely on agricultural habitats may be similarly affected if water availability (amounts and or timing) change.

Non-breeding Season

The Central Valley of California has one of the world's largest concentrations of over-wintering waterfowl (Heitmeyer et al. 1989). The primary expected response of waterfowl to climate change is redistribution as birds seek to maintain energy balance. Increased fall and winter temperatures in northern regions would make it unnecessary for waterfowl to migrate as far south and the wintering populations of waterfowl in California may be reduced. Shifting patterns of precipitation and temperatures may cause decreased availability of water for managed wetlands and agricultural production in the Central Valley. Changes in water availability and timing (Miller et al 2003) would likely have the greatest impact on rice agriculture, an important component of wintering waterfowl habitat in California. Decreasing habitats may cause a decline in body condition which may impact recruitment and survival in waterfowl populations. Ultimately, this will cause decreased recruitment as birds shift out of optimal nesting habitats (e. g. Ward et al. 2005), and a decrease in over-wintering populations.

Summary of Findings

There is substantial evidence that climate change will cause changes in habitats and other factors that affect waterfowl populations over the long term. Waterfowl populations are assessed in many ways on an annual basis (See pages 38–40 of the 2006 Final Environmental Document for Migratory Game Bird Hunting, SCH #2006042115, incorporated by reference, available at 1812 9th Street, Sacramento 95811). In summary, the condition of breeding habitats is assessed annually during the breeding population surveys conducted by the Service with assistance from some states and the Canadian Wildlife Service (CWS) in the spring and summer. The specific methodology of these surveys is provided in Chapter 3, pages 55–57, 2006 Final Environmental Document for Migratory Game Bird Hunting, SCH #2006042115, incorporated by reference, available at 1812 9th Street, Sacramento 95811).

Because the effect of regulated harvest is minimal (pages 57–67 of 2006 Final Environmental Document for Migratory Game Bird Hunting, SCH #2006042115, , incorporated by reference, available at 1812 9th Street, Sacramento 95811) implementation of the proposed project in the current year is not expected to result in significant negative effects to waterfowl populations. The effect is minimal because summary, the weight of historic scientific evidence leans toward the compensatory mortality hypothesis, though there are enough ambiguities to make complete reliance on this hypothesis as a management strategy an unwise approach (USDI 1988a:96). Accordingly, restrictive regulations have been established when populations reached low levels. For example, duck seasons were reduced from 93 days to 59 days, and bag limits were reduced from seven birds per day to four birds per day during the late 1980s in response to declines in duck populations caused by drought (Page 66, 2006 Final Environmental Document for Migratory Game Bird Hunting, SCH #2006042115, incorporated by reference, available at 1812 9th Street, Sacramento 95811).

From: Bill Ferrier
Sent: Thursday, February 14, 2019 2:58 PM
To: FGC
Subject: Letter, waterfowl regulations
Attachments: Ferrier, falconry comments, waterfowl agenda item.pdf

Please see attached.
Thank you,
Bill Ferrier, DVM

February 14, 2019

California Fish and Game Commission

1416 Ninth Street, Room 1320

Sacramento, CA 95814

Re: Waterfowl Agenda Item, April 17th meeting, Office of Administrative Law's Notice ID #Z2019-0108-07

Dear Commissioners,

On behalf of the California Hawking Club, (CHC), I wish to comment on the waterfowl agenda item for the April Commission meeting.

Falconry as a hunting method is inefficient. This fact combined with the relatively few falconers around the country compared to gun hunters' results in a sport that has zero impact on the migratory bird populations. Despite this, the current management system effectively denies hunting opportunity to hundreds of falconers every year. The cause of this inequity is based on the difficulty in hunting with a trained raptor near gun hunters, which also prevents falconers from having access to hunting ducks near refuges where large concentrations of ducks can be found. Added to this challenge is the fact that in most areas of California, ducks are not found in areas that can be hunted with a falcon until late in the season. Falconers usually hunt ducks on small ponds which are secondary resting areas for ducks through most of the season on the west coast. Approximately one month before the season closes, the ducks can be found on these areas.

Ideally, falconers would like to have a separate duck hunting season from gun hunters but unfortunately the wording in the Migratory Bird Treaty Act (MBTA) at this time combines all forms of hunting into one group ("by any method"). Falconers would simply like to have an equal opportunity to hunt ducks. By maintaining approximately 1 week of a "falconry only duck season" after the end of the regular hunting season, falconers can have at least this short time to pursue ducks without being in proximity to gun hunters. Alternatively, we ask that the FWS consider developing special use permits for the take of migratory birds by falconry.

Request

Maintain 100-day season length and use additional days for falconry-only hunting (as discussed between DFW and the CHC June 18, 2018). Consider developing special use permits for the take of migratory birds by falconry.

Respectfully,

William T. Ferrier, DVM

Please Support 5 Additional Days of Duck Hunting

Wed 04/03/2019 02:00 PM

To:FGC <FGC@fgc.ca.gov>;

Dear Commissioner Sklar,

I am writing you to respectfully request that you support adding 5 more days of duck hunting to the 2019/20 waterfowl season.

Specifically, please approve extending the duck season through January 31, 2020 (rather than January 26) within the Balance of State, Southern San Joaquin and Southern California Zones.

Allowing 5 more days of duck hunting during this time will provide additional hunter opportunity when duck hunting is typically good to excellent in these zones, as evidenced by harvest data on State Wildlife Areas and National Wildlife Refuges.

This should aid hunting recruitment and retention efforts and arguably help to simplify waterfowl regulations by creating a date certain end (January 31st) to the regular duck season. It may also encourage private duck clubs and rice farmers to provide wintering waterfowl habitat later into the year.

The January 31st duck season extension does not increase the total number of duck hunting days authorized within the Pacific Flyway, and should not adversely affect duck populations.

Thank you for your consideration.

Sincerely,

James Abbott

State of California
Department of Fish and Wildlife

Memorandum

Date: April 8, 2019

To: Melissa Miller-Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: Department Recommendation for Agenda for the April 17 Fish and Game Commission Meeting Regarding Amendments to Section 502, Title 14, California Code of Regulations, Waterfowl Hunting Regulations

The U.S. Fish and Wildlife Service (Service) annually establishes federal regulation frameworks (Frameworks) for migratory bird hunting. California, and other states, must set its waterfowl hunting regulations within the Frameworks. These Frameworks describe the earliest dates that waterfowl hunting seasons may open, the maximum number of days hunting can occur, the latest dates that hunting seasons must close, and the maximum daily bag limit. The Frameworks allow for a liberal duck season which includes up to a 107-day season, 7 daily duck limit including 7 mallards but only 2 hen mallards, 1 pintail, 2 canvasbacks, 2 redheads, and 3 scaup (during an 86-day season).

Consistent with Fish and Game Code Section 355, the Department is recommending season lengths and bag limits that conform to the Frameworks for the 2019-20 waterfowl hunting season. Most bag limits and season lengths remain unchanged other than allowance for calendar progression. There are 3 recommended changes: 1) add Small Canada geese to the Regular Season for the Northeastern Zone; 2) add Small Canada geese to Season for the Klamath Basin Special Management Area; and 3) open the Late Season for white geese two weeks after the close of the Regular Season for the Imperial County Special Management Area.

The Department will not object to a January 31st closure date for the balance of the state, Southern San Joaquin Valley and Southern California zones. The option would preclude a falconry-only hunt, since all 107 available hunt days would be allocated to firearms. The falconer stakeholders have requested 5 days for falconry-only after the historical closure date of the last Sunday in January.

If you have any questions regarding this item, please contact Kari Lewis, Chief of the Wildlife Branch at (916) 445-3789.

ec: Stafford Lehr
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2019-20 Waterfowl Hunting Recommendations Section 502

Fish and Game Commission Meeting

April 17, 2019

Melanie Weaver
Wildlife Branch

Overview

- Federal Frameworks
- Department recommendation
- January 31 closure option
- Veteran-Active Military Hunting Days

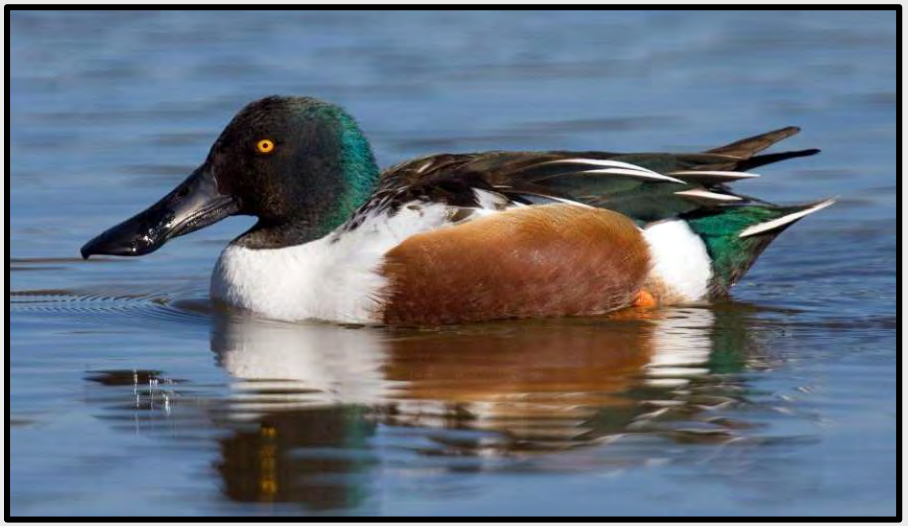
Duck Frameworks

Western Mallard

- 107 days from Sat nearest Sept 24 to January 31

7 ducks, 7 mallards, 2 hen mallards

Pintail: 1
Canvasback: 2
Scaup: 86 days/3
Redhead: 2



Goose Frameworks

Between 100-107 day season

Generally 30/day

- 20 white geese
- 10 dark geese
- 2 Brant/day

Summary of Department Recommendation

- Add Small Canada geese to Northeast Zone & Klamath Basin Special Management Area Season description
- Open white goose late season 2 weeks after close of regular season in Imperial County Special Management Area
- Close last Sunday in January in most zones and utilize extra days for falconry-only
- Add 5 days of falconry only in Balance of State Zone & 2 days in So San Joaquin Valley Zone

Duck Season Recommendation

Northeast Zone

- Regular Season: Oct 5 – Jan 17 (105 days)
- Scaup: Oct 5 – Dec 1 (58 days) & Dec 21 – Jan 17 (28 days)

Bal of State, So San Joaquin Valley, So California Zones

- Regular Season: Oct 19 – Jan 26 (100 days)
- Scaup: Nov 2 – Jan 26 (86 days)

Colorado River Zone

- Regular Season: Oct 18 – Jan 26 (101 days)
- Scaup: Nov 2 – Jan 26 (86 days)
- Must match AZ regulations

Wildlife Branch

Northeast Zone Goose Season Recommendation

Regular Season

- Canada geese: Oct 5 – Jan 12 (100 days)
- White & white-fronted geese:
  Oct 5 – Dec 1 (58 days) & Jan 4 – Jan 17 (14 days)

Late Season

- White & white-fronted geese: Feb 7 – Mar 10 (33 days)

- 30/day: 20 white/10 dark geese, no more than 2 Large Canada geese

Balance of State Zone
Goose Season Recommendation

Early Season Canada geese

- Sept 28 – Oct 2 (5 days)

Regular Season

- Oct 19 – Jan 26 (100 days)

Late Season

- White & and white-fronted geese Feb 8 – Feb 12 (5 days)
- 30/day: 20 white/10 dark geese

Wildlife Branch

Goose Season Recommendation Continued…

So San Joaquin Valley and So California Zones

- Oct 19 – Jan 26 (100 days)
- 30/day: 20 white/10 dark geese in SSJV & 3 dark geese in So California Zone

Colorado River Zone

- Oct 18 – Jan 26 (101 days)
- 20/day: up to 20 white/4 dark geese
- CA must match Arizona adjacent zone

Brant Season Recommendation

Northern Brant

- Nov 8 – Dec 14 (37 days)

Balance of State Brant

- Nov 9 – Dec 15 (37 days)

Wildlife Branch

Special Management Area Recommendation

North Coast

- Regular Season: Nov 1 – Jan 26 (87 days)
- Late Season: Feb 22 – Mar 10 (18 days)

Klamath Basin

- White & white-fronted Geese: Oct 5 – Jan 17 (105 days)
- Canada Goose: Oct 5 – Jan 12 (100 days)

Sac Valley

- Oct 19 – Dec 21 (64 days)

Imperial Valley

- Regular Season: Nov 2 – Jan 26 (86 days)
- Late Season: Feb 8 – Feb 26 (19 days)

Youth Hunt & Falconry Recommendation

Youth Hunt Days

- NE Zone: Sept 21 – 22
- All other zones: Feb 1 – 2

Falconry-Only

- Balance of State, So San Joaquin Valley, & So California Zones: Feb 5 – Feb 9 (5 days)
- Colorado River Zone: Jan 27 – Jan 30

Jan 31 Closing Option - Future Seasons at a Glance

Season	Sat Opening	Closing Day	Season Length	Falconry Only
2019-20	Oct 19	Fri, Jan 31	105	0
2020-21	Oct 24	Sun, Jan 31	100	5
2021-22	Oct 23	Mon, Jan 31	101	4

Wildlife Branch

Jan 31 Closure Option
Ducks

Balance of State, So San Joaquin Valley, &

So California Zones

- Regular Season: Oct 19 – Jan 31 (105 days)
- Scaup: Nov 7 – Jan 31 (86 days)

Northeast and Colorado River Zones

- No change from Department recommendation

Jan 31 Closure Option
Geese

Balance of State Zone Early, Regular & Late Seasons

- No change from Department recommendation

So San Joaquin Valley and So California Zones

- Oct 19 – Jan 31 (105 days)

Colorado River Zone

- No change from Department recommendation

Jan 31 Closure Option
Special Management Areas

North Coast

- Regular Season: Nov 6 – Jan 31 (87 days)
- Late Season: no change from Department recommendation

Klamath Basin

- No change from Department recommendation

Sac Valley

- No change from Department recommendation

Imperial Valley

- Regular Season: Nov 7 – Jan 31 (86 days)
- Late Season: no change from Department recommendation

Jan 31 Closure Option
Youth Hunt & Falconry-Only

Youth Hunt Days

- NE Zone: Sept 21 – 22
- All other zones (except Colorado River Zone): Feb 8 – 9

Falconry-only

- Bal of State, So San Joaquin Valley, & So California: no days available
- Colorado River Zone: Jan 27 – Jan 30

Veteran-Active Military Hunt Days

- 2 days for Veteran-Active Military
- Can coincide with Youth Hunt Days
- Must be within 14 days of the regular duck season opening and closing dates
- Too late to consider for 2019/20 season
- Could combine with Youth Hunt Days BUT
  - Conflicts with intent of Youth Hunt Days
  - Youth Hunt Days popular so capacity reduced
  - Close season for 2-days during regular season?
  - Use 1 day for Youth and 2nd day for Veterans?

Questions?

Melanie Weaver
Waterfowl Program Leader
(916)445-3717
Melanie.Weaver@wildlife.ca.gov

Wildlife Branch

State of California
Department of Fish and Wildlife

Original on file.
Received December 3, 2018, 10:40AM

Date: November 29, 2018

To: Melissa Miller-Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Initial Statement of Reasons to Amend Subsection (b)(91.1) of Section 7.50, Title 14, CCR, Klamath River Basin Sport Fishing Regulations**

Please find attached the Initial Statement of Reasons package for the 2019 Klamath River Basin sport fishing regulations. As in the past, the Department is proposing a range of bag and possession limits for adult Klamath River fall-run Chinook Salmon (KRFC) until after federal review of west coast salmon stocks and fishery allocations have been proposed. The 2019 Klamath River Basin allocation of adult KRFC will be recommended by the Pacific Fisheries Management Council in April 2019 and presented to the Commission for adoption at its May 16, 2019 teleconference.

If you have any questions or need additional information, please contact Kevin Shaffer, Chief, Fisheries Branch, at (916) 327-8841 or by e-mail at Kevin.Shaffer@wildlife.ca.gov. The public notice should identify Senior Environmental Scientist, Wade Sinnen, as the Department's point of contact for this rulemaking. Mr. Sinnen can be reached at (707) 822-5119, or by e-mail at Wade.Sinnen@wildlife.ca.gov.

Attachment

ec: Stafford Lehr, Deputy Director
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Stafford.Lehr@wildlife.ca.gov

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION

Amend Subsection (b)(91.1) of Section 7.50
Title 14, California Code of Regulations
Re: Klamath River Basin Sport Fishing Regulations

I. Date of Initial Statement of Reasons: November 20, 2018

II. Dates and Locations of Scheduled Hearings

(a)	Notice Hearing:	Date:	December 13, 2018
		Location:	Oceanside
(b)	Discussion Hearing:	Date:	February 6, 2019
		Location:	Sacramento
(c)	Discussion Hearing	Date:	April 17, 2019
		Location:	Santa Monica
(d)	Adoption Hearing:	Date:	May 16, 2019
		Location:	Teleconference

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations.

The Klamath River Basin, which consists of the Klamath River and Trinity River systems, is managed for fall-run Chinook Salmon (*Oncorhynchus tshawytscha*) through a cooperative system of State, federal, and tribal management agencies. Salmonid regulations are designed to meet natural and hatchery escapement needs for salmonid stocks, while providing equitable harvest opportunities for ocean sport, ocean commercial, river sport, and tribal fisheries.

The Pacific Fishery Management Council (PFMC) is responsible for adopting recommendations for the management of sport and commercial ocean salmon fisheries in the Exclusive Economic Zone (three to 200 miles offshore) off the coasts of Washington, Oregon, and California. When approved by the Secretary of Commerce, these recommendations are implemented as ocean salmon fishing regulations by the National Marine Fisheries Service (NMFS).

The California Fish and Game Commission (Commission) adopts regulations for the ocean salmon sport (inside three miles) and the Klamath River Basin (in-river) sport fisheries, which are consistent with federal fishery management goals.

Tribal entities within the Klamath River Basin maintain fishing rights for ceremonial, subsistence, and commercial fisheries that are managed consistent with federal fishery management goals. Tribal fishing regulations are promulgated by the tribes.

Klamath River Fall-Run Chinook Salmon
Adult Klamath River fall-run Chinook Salmon (KRFC) harvest allocations and natural spawning escapement goals are established by the PFMC. The KRFC harvest allocation between tribal and non-tribal fisheries is based on court decisions and allocation agreements between the various fishery representatives.

For the purpose of PFMC mixed-stock fishery modeling and salmon stock assessment, salmon greater than 22 inches total length are defined as adult (ages 3-5) and salmon less than or equal to 22 inches total length are defined as grilse salmon (age 2).

PFMC Overfishing Review
KRFC stocks have been designated as “overfished” by the PFMC. This designation is the result of not meeting conservation objectives for this stock. Management objectives and criteria for KRFC are defined in the PFMC Salmon Fishery Management Plan (FMP). The threshold for overfished status of KRFC is a three-year geometric mean less than or equal to 30,525 natural area adult spawners. This threshold was not met for KRFC during the 2015-2017 period. The 30,525 KRFC natural area adult spawners is considered the minimum stock size threshold, per the FMP.

Accordingly, the FMP outlines a process for preparing a “rebuilding plan” that includes assessment of the factors that lead to the decline of the stock, including fishing, environmental factors, model errors, etc. The rebuilding plan includes recommendations to address conservation of KRFC, with the goal of achieving rebuilt status. Rebuilt status requires meeting a three-year geometric mean of 40,700 adult natural area KRFC spawner escapement. The plan is currently under development by representatives of NMFS, PFMC, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife (Department), and Tribal entities, with a timeline for completion in spring of 2019. Forthcoming recommendations from the rebuilding plan may alter how KRFC are managed in the future, including changing the in-river allocation number, and/or allocating less than the normal target number.

Klamath River Spring-Run Chinook Salmon
The Klamath River Basin also supports Klamath River spring-run Chinook Salmon (KRSC). Naturally produced KRSC are both temporally and spatially separated from KRFC in most cases.

Presently, KRSC stocks are not managed or allocated by the PFMC. This in-river sport fishery is managed by general basin seasons, daily bag limit, and possession limit regulations. KRSC harvest will be monitored on the Klamath River below the Highway 96 bridge at Weitchpec to the mouth of the Klamath River in 2019 and ensuing years by creel

survey. The upper Trinity River, upstream of Junction City, will be monitored using tag returns from anglers in 2019 and future years.

KRFC Allocation Management

The PFMC 2018 allocation for the Klamath River Basin sport harvest was 3,490 adult KRFC. Preseason stock projections of 2019 adult KRFC abundance will not be available from the PFMC until March 2019. The 2019 basin allocation will be recommended by the PFMC in April 2019 and presented to the Commission for adoption as a quota for the in-river sport harvest at its May 2019 teleconference meeting.

The Commission may modify the KRFC in-river sport harvest quota, which is normally a minimum of 15 percent of the non-tribal PFMC harvest allocation. Commission modifications need to meet biological and fishery allocation goals specified in law or established in the FMP, otherwise harvest opportunities may be reduced in the California ocean or in-river fisheries.

The annual KRFC in-river sport harvest quota is specified in subsection 7.50(b)(91.1)(D)1. The quota is split between four geographic areas with a subquota for each area, expressed as a percentage of the total in-river quota, specified in subsection 7.50(b)(91.1)(D)2. For angler convenience, the subquotas, expressed as the number of fish, are listed for the affected river segments in subsection 7.50(b)(91.1)(E). The in-river sport subquota percentages are as follows:

1. for the main stem Klamath River from 3,500 feet downstream of the Iron Gate Dam to the Highway 96 bridge at Weitchpec -- 17 percent of the in-river sport quota;
2. for the main stem Klamath River from downstream of the Highway 96 bridge at Weitchpec to the mouth -- 50 percent of the in-river sport quota;
3. for the Trinity River downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat -- 16.5 percent of the in-river sport quota; and
4. for the Trinity River downstream from the Denny Road bridge at Hawkins Bar to the confluence with the Klamath River -- 16.5 percent of the in-river sport fshery quota.

The spit area (within 100 yards of the channel through the sand spit formed at the Klamath River mouth) closes to all fishing after 15 percent of the total Klamath River Basin quota has been taken downstream of the Highway 101 bridge.

These geographic areas are based upon the historical distribution of angler effort to ensure equitable harvest of adult KRFC in the Klamath River and Trinity River. The subquota system requires the Department to monitor or assess angler harvest of adult KRFC in each geographic area. All areas will be monitored on a real time basis, except for the following:

Klamath River upstream of Weitchpec and the Trinity River: Due to funding and personnel reductions, the Department will be unable to deploy adequate personnel to conduct real time harvest monitoring in the Klamath River upstream of Weitchpec and in the Trinity River for the 2019 season. The Department has developed Harvest Predictor Models (HPM) which incorporate historic creel survey data from the Klamath River downstream of Iron

Gate Dam to the confluence with the Pacific Ocean, and the Trinity River downstream of Lewiston Dam to the confluence with the Klamath River. Each HPM is driven by the positive relationship between KRFC harvested in the respective lower and upper subquota areas of the Klamath River and the Trinity River. The HPMs will be used by the Department to implement fishing closures to ensure that anglers do not exceed established subquota targets. Using this method, the upper Klamath River subquota area generally closes between 28-30 days after the lower Klamath River subquota is reached. Similarly, the upper Trinity River subquota area generally closes 28-30 days after the lower Trinity River subquota has been met. The Department also takes into consideration several other factors when implementing closure dates for subquota areas, including angler effort, KRFC run timing, weir counts, and ongoing recreational creel surveys performed by the Hoopa Valley Tribe in the lower Trinity River below Willow Creek.

Sport Fishery Management
The KRFC in-river sport harvest quota is divided into geographic areas, and harvest is monitored under real time subquota management. On the other hand, KRSC in-river sport harvest is managed by general season, daily bag limit, and possession limit regulations.

The Department presently differentiates the two stocks by the following dates in each sub-area:

Klamath River

1. January 1 through August 14 - General Season KRSC.
   For purposes of clarity, daily bag and possession limits apply to that section of the Klamath River downstream of the Highway 96 bridge at Weitchpec to the mouth.

2. August 15 to December 31 - KRFC quota management.

Trinity River

1. January 1 through August 31 – General Season KRSC.
   For purposes of clarity, daily bag and possession limits apply to that section of the Trinity River downstream of the Old Lewiston Bridge to the confluence with the South Fork Trinity River.

2. September 1 through December 31 – KRFC quota management.

The daily bag and possession limits apply to both stocks within the same sub-area and time period.

Current regulations in subsections 7.50(b)(91.1)(E)2.a. and b. specify bag limits for KRFC stocks in the Klamath River. Current regulations in subsections 7.50(b)(91.1)(E)6.b., e., and f. specify bag limits for KRFC stocks in the Trinity River. Current regulations in subsection 7.50(b)(91.1)(C)2.b.specify KRFC possession limits.

Proposed Changes
Because PFMC recommendations are not known at this time, ranges (shown in brackets in the text below) of subquotas and bag and possession limits, which encompass historical

quotas, are being proposed for the 2019 KRFC fishery in the Klamath and Trinity rivers. The final KRFC bag and possession limits will align with the final federal regulations to meet biological and fishery allocation goals specified in law, or established in the FMP, otherwise harvest opportunities may be reduced in the California ocean fisheries.

KRFC SPORT FISHERY (QUOTA MANAGEMENT):

Quota: For public notice requirements, the Department recommends the Commission consider a quota range of 0 – 67,600 adult KRFC in the Klamath River Basin for the river sport fishery. This recommended range encompasses the historical range of the Klamath River Basin allocations and allows the PFMC and Commission to make adjustments during the 2019 regulatory cycle.

Subquotas: The proposed subquotas for KRFC stocks are as follows:

- Main stem Klamath River from 3,500 feet downstream of the Iron Gate Dam to the Highway 96 bridge at Weitchpec -- 17 percent of the total quota equates to [0-11,492];
- Main stem Klamath River from downstream of the Highway 96 bridge at Weitchpec to the mouth -- 50 percent of the total quota equates to [0-33,800];
- Trinity River downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat -- 16.5 percent of the total quota equates to [0-11,154]; and
- Trinity River downstream from the Denny Road bridge at Hawkins Bar to the confluence with the Klamath River -- 16.5 percent of the total quota equates to [0-11,154].

Seasons: No changes are proposed for the Klamath River and Trinity River KRFC seasons:

- Klamath River - August 15 to December 31
- Trinity River - September 1 to December 31

Bag and Possession Limits: As in previous years, no retention of adult KRFC is proposed for the following areas once the subquota has been met.

The range of proposed bag and possession limits for KRFC stocks are as follows:

- Bag Limit - [0-4] Chinook Salmon – of which no more than [0-4] fish over 22 inches total length may be retained until the subquota is met, then 0 fish over 22 inches total length.
- Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish over 22 inches total length may be retained when the take of salmon over 22 inches total length is allowed.

KRSC SPORT FISHERY:
No regulatory changes are proposed for the general (KRSC) opening and closing season dates, and bag, possession and size limits.

OTHER CHANGES

No other changes are proposed, except those described above, and to change the year 2018 to 2019 for the upcoming season.

(b) Goals and Benefits of the Regulation:

It is the policy of this State to encourage the conservation, maintenance, and utilization of the living resources of the ocean and other waters under the jurisdiction and influence of the State for the benefit of all the citizens of the State and to promote the development of local fisheries and distant water fisheries based in California in harmony with international law, respecting fishing and the conservation of the living resources of the ocean and other waters under the jurisdiction and influence of the State. The objectives of this policy include, but are not limited to, the maintenance of sufficient populations of all species of aquatic organisms to ensure their continued existence, and the maintenance of a sufficient resource to support a reasonable sport use. Adoption of scientifically-based Klamath River Basin salmon seasons, size limits, and bag and possession limits provides for the maintenance of sufficient populations of salmon to ensure their continued existence.

The benefits of the proposed regulations are consistency with federal fishery management goals, sustainable management of Klamath River Basin fish resources, health and welfare of California residents, and promotion of businesses that rely on salmon sport fishing in the Klamath River Basin.

(c) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 200, 205, 265, 270, 315, 316.5, and 399, Fish and Game Code.

Reference: Sections 200, 205, 265, 270, and 316.5, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change: None.

(e) Identification of Reports or Documents Supporting Regulation Change:

In-River Sport Fishing Economics Technical Report, National Oceanographic and Atmospheric Administration, National Marine Fisheries Service, September 2011.

(f) Public Discussions of Proposed Regulations Prior to Notice Publication:

No public meetings are being held prior to the notice publication. The 45-day comment period provides adequate time for review of the proposed amendments.

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change:

KRFC Stocks

The use of more liberal regulations for KRFC bag limits, possession limits and fishing methods (Alternative 1 in the STD 399; Economic and Fiscal Impact Statement). More

liberal regulations would be less desirable than those proposed, because they could create risk of an intense fishery, reaching or exceeding the quota in a very short time. Reaching the quota in a very short time could be damaging to the local economy, and exceeding the allowable harvest could damage the KRFC stocks.

KRSC Stocks
Presently there are no alternatives for the Commission to consider with regard to KRSC stocks. KRSC stocks are not currently managed by the PFMC, therefore forecast of abundance, and ocean and in-river harvest allocations do not occur on an annual basis.

KRSC stocks are currently managed as a separate life history type by the Commission. In most years, regulatory controls are generally more restrictive for KRSC than KRFC, and include time and area closures and reduced bag and possession limits.

(b) No Change Alternative:

The No Change Alternative (Alternative 2 in the STD 399; Economic and Fiscal Impact Statement) would leave the current 2018 daily bag and possession limit regulations in place and would not allow flexibility to develop bag and possession limits based on 2019 PFMC allocations. The change for 2019 is necessary to continue appropriate harvest rates and an equitable distribution of the harvestable surplus.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed regulations are projected to range from minor to no impact on the net revenues to local businesses servicing sport fishermen. If the 2019 KRFC quota is reduced, visitor spending may correspondingly be reduced, and in the absence of the emergence of alternative visitor activities, the drop in spending could induce business contraction. If the quotas remain similar to previous quotas, then local economic impacts are expected to be unchanged. Neither scenario is expected to directly affect the ability of California businesses to compete with businesses in other states.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The proposed regulations range from no fishing of KRFC, to normal Klamath River Basin salmon season, size, bag and possession limits.

The Commission anticipates some impact on the creation or elimination of jobs in California. The potential adverse employment impacts range from no impact to the loss of 22 jobs which are not expected to create, eliminate or expand businesses in the State.

An estimated 30-50 businesses that serve sport fishing activities are expected to be directly and/or indirectly affected depending on the final quota. The impacts range from no impact (Projection 1 under the Economic Impact Assessment (EIA), below) to unknown impacts on the creation of new business or the elimination of existing businesses (Projection 3, EIA, below).

The Commission does not anticipate any impacts on the expansion of businesses in California.

For all projections, the possibility of growth of businesses to serve substitute activities exists. Adverse impacts to jobs and/or businesses would be less if fishing of other species and grilse KRFC is permitted, than under a complete closure to all fishing. The impacted businesses are generally small businesses employing few individuals and, like all small businesses, are subject to failure for a variety of causes. Additionally, the long-term intent of the proposed action is to increase sustainability in fishable salmon stocks and, consequently, promoting the long-term viability of these same small businesses.

The Commission anticipates benefits to the health and welfare of California residents. Providing opportunities for a salmon sport fishery encourages a healthy outdoor activity and the consumption of a nutritious food.

The Commission anticipates benefits to the environment by the sustainable management of California's salmonid resources.

The Commission does not anticipate any benefits to worker safety because the proposed action does not affect working conditions.

(c) Cost Impacts on a Representative Private Person or Business:

The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.

(e) Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment:

The regulatory amendments of subsection 7.50(b)(91.1) under consideration will set the 2019 Klamath River Basin salmon sport fishing regulations to conform to the PFMC KRFC allocation. The Klamath River Basin is anticipated to be open for salmon sport fishing at levels similar to the 2018 levels; however, the possibility of marine fishery area closures still exists. Ocean closures may in turn result in PFMC recommendations for Klamath River Basin salmon sport fishery closures for the take of adult KRFC. Adverse or positive impacts to jobs and businesses will depend on the 2019 KRFC allocation ultimately adopted by the PFMC, and the specific regulations promulgated by the Commission.

The proposed quota range of 0 to 67,600 adult KRFC in 2019 represents a range from 0 percent or no salmon fishing on adult KRFC to greater than 100 percent of the 2018 Klamath River Basin KRFC quota. Under all scenarios, sport fishing may be allowed for other sportfish species and for grilse KRFC regardless of PFMC regulations, thus any adverse impacts to businesses could be less severe than under a complete closure of fishing.

The preservation of Klamath River salmon stocks is necessary for the success of Klamath River Basin businesses which provide goods and services related to fishing. Scientifically-based KRFC allocations are necessary for the continued preservation of the resource and therefore the prevention of adverse economic impacts.

Based on a 2011 NMFS report on In-River Sport Fishing Economics of the Klamath River, and adding a 33 percent increase to account for the Trinity River[a], in a normal year, non-resident Klamath River salmon and steelhead sport anglers together contribute about $3,442,750 in direct expenditures, resulting in about $4,221,945 (2017$) in total economic output to California businesses. The NMFS study found that non-resident (outside the immediate locale) salmon or steelhead angler average expenditures are estimated to be $108.82 (2017$) per angler day (for lodging, food, gasoline, fishing gear, boat fuel, and guide fees). The projections do not distinguish between spring and fall runs, however, the in-river harvest is almost exclusively fall-run.

Local resident average expenditures per angler day are estimated to be 60 percent less

[a] The NMFS study excluded the Trinity River, the largest tributary to the Klamath. The Trinity River is allocated 33 percent of the KRFC total quota. Using the Trinity quota as a measure of salmon and steelhead angler effort, and thus impacts on associated businesses that support anglers, the Department added 33 percent to the total economic output listed in the NMFS report.

(markedly reduced lodging, gasoline and food expenditures), which yields an estimate of $43.53 per angler-day. Local resident anglers comprise about 36 percent of Klamath River Basin anglers. Any decreases to expenditures by resident anglers associated with reduced fishing opportunities may be offset by increased expenditures on other locally purchased goods and services – with no net change in local economic activity. Thus, this economic impact assessment focuses on non-resident angler expenditures that represent new money whose injection serves to stimulate the local economy.

The total impact of non-resident angler direct expenditures support about 45 jobs for salmon alone or up to 70 jobs for all salmon and steelhead spending.

Table 1. Klamath Salmon and Steelhead Total Economic Output (Non-resident anglers)

Klamath Sport Fishing	Salmon	Steelhead	Total
Total Output	$ 2,733,115	$ 1,488,830	$ 4,221,945
Labor Income	$ 1,264,576	$ 688,862	$ 1,953,438
Jobs	45.7	24.9	70.6

To demonstrate the potential economic impacts that may result from a quota anywhere within the range of 0 - 67,600 KRFC, three adult salmon catch projections are as follows: 100 percent of the 2018 adult KRFC catch limit; 50 percent of the 2018 adult KRFC catch limit; and 0 percent of the 2018 adult KRFC catch limit.

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State:

Projection 1. 100 percent of the 2018 adult KRFC catch limit: The Commission does not anticipate any adverse impacts on the creation or elimination of jobs, as the quotas would not decrease effort nor curtail the number of visitors and thus probable visitor expenditures in the fisheries areas.

Projection 2. 50 percent of the 2018 adult KRFC catch limit: The Commission anticipates some impact on the creation or elimination of jobs, which may be partially offset by the potential for continued sport fishing allowed for other sportfish and grilse KRFC. A 50 percent salmon catch reduction will likely reduce visitor spending by slightly less than 50 percent, given price elasticities of demand for salmon fishing activity of less than one. As the “price” of fishing per unit catch increases, the demand for fishing trips declines by a lesser extent, particularly in the short-run. While difficult to predict, job losses associated with a 50 percent reduction in the adult KRFC catch limit are expected to be less than half of the 45 estimated total jobs supported by salmon angler visits (i.e. fewer than 22 jobs).

Projection 3. 0 percent of the 2018 adult KRFC catch limit: In the event of fisheries closures for adult KRFC in some or all Klamath River Basin areas, the Commission anticipates less than 50 percent reduction in fishery-related jobs. As mentioned earlier, sport fishing for other species and grilse KRFC may still be allowed, thus mitigating potential job losses.

A closure on the take of all KRFC was instituted in 2017, and only steelhead could be legally harvested during the fall season. The impact of the 2017 closure on angler days

and consumer demand is still being evaluated. However, job creation or elimination tends to lag in response to short-term changes in consumer demand. Thus, the potential impacts of a 2019 closure on the take of adult KRFC are estimated to result in the loss of less than 22 jobs due to adjustment lags and the continued sport fishing allowed for other species and potentially for grilse KRFC.

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State:

Projection 1. 100 percent of the 2018 adult KRFC catch limit: The Commission does not anticipate any impacts on the creation of new business or the elimination of existing businesses, as the quotas would not decrease effort nor curtail the number of visitors and thus probable visitor expenditures in the fisheries areas.

Projection 2. 50 percent of the 2018 adult KRFC catch limit: The Commission anticipates a decline in visits to the fishery areas of less than 50 percent due to the continued sport fishing allowed for other species and grilse KRFC. This may result in some decline in business activity, but the Commission does not anticipate any impacts on the creation of new business or the elimination of existing businesses directly related to fishing activities. However, with less effort being expended on salmon fishing, the possibility of substitute activities and the growth of businesses to serve those activities exists.

Projection 3. 0 percent of the 2018 adult KRFC catch limit: In the event of salmon fisheries closures for adult KRFC in some or all Klamath River Basin areas, the Commission anticipates a decline in regional spending and thus reduced revenues to the approximately 30 to 50 businesses that directly and indirectly serve sport fishing activities with unknown impacts on the creation of new business or the elimination of existing businesses. However, adverse impacts may be mitigated by the continued opportunity to harvest other sportfish and the potential for take of grilse KRFC. Additionally, the long-term intent of the proposed action is to increase sustainability in fishable salmon stocks and, consequently, the long-term viability of these same small businesses.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State:

Projection 1. 100 percent of the 2018 adult KRFC catch limit: The Commission does not anticipate any impacts on the expansion of businesses in California as the quotas would not increase effort nor increase the number of visitors and thus probable visitor expenditures in the fisheries areas.

Projection 2. 50 percent of the 2018 adult KRFC catch limit: The Commission does not anticipate any impacts on the expansion of businesses currently doing business within the State. Decreases in expenditures by resident anglers associated with reduced fishing opportunities may be offset by increased expenditures on other locally purchased goods and services – with no net change in local economic activity. For non-resident anglers, however, decreases in local expenditures associated with decreases

in local fishing opportunities may result in increases in other expenditures outside the Klamath River Basin area.

Projection 3. 0 percent of the 2018 adult KRFC catch limit: In the event of salmon fisheries closures for adult KRFC in some or all Klamath River Basin areas, the Commission does not anticipate any expansion of businesses in California. Decreases in expenditures by anglers associated with reduced fishing opportunities may be partially offset by increased expenditures on other locally purchased goods and services as visitors fish for other sportfish, potentially including grilse KRFC, or the substitution of salmon fishing with other recreational pursuits.

(d) Benefits of the Regulation to the Health and Welfare of California Residents:

Under all projections, the Commission anticipates benefits to the health and welfare of California residents. Providing opportunities for a Klamath River Basin salmon sport fishery and other sport fisheries encourages a healthy outdoor activity and the consumption of a nutritious food. Sport fishing also contributes to increased mental health of its practitioners, as fishing is a hobby and form of relaxation for many. Sport fishing also provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of California's natural resources.

(e) Benefits of the Regulation to Worker Safety:

Under all projections, the Commission does not anticipate benefits to worker safety because the proposed regulations will not impact working conditions.

(f) Benefits of the Regulation to the State's Environment:

Under all projections, the Commission anticipates benefits to the environment in the sustainable management of Klamath River Basin salmonid resources. It is the policy of this State to encourage the conservation, maintenance, and utilization of the living resources of the ocean and other waters under the jurisdiction and influence of the State for the benefit of all the citizens of the State and to promote the development of local fisheries and distant water fisheries based in California in harmony with international law, respecting fishing and the conservation of the living resources of the ocean and other waters under the jurisdiction and influence of the State. The objectives of this policy include, but are not limited to, the maintenance of sufficient populations of all species of aquatic organisms to ensure their continued existence, and the maintenance of a sufficient resource to support a reasonable sport use. Adoption of scientifically-based Klamath River Basin salmon seasons, size limits, and bag and possession limits provides for the maintenance of sufficient populations of salmon to ensure their continued existence.

(g) Other Benefits of the Regulation:

Consistency with Federal Fishery Management Goals: California's salmon sport fishing regulations need to align with the new Federal regulations to achieve optimum yield in

California. The PFMC annually reviews the status of west coast salmon populations. As part of that process, it recommends west coast adult salmon fisheries regulations aimed at meeting biological and fishery allocation goals specified in law or established in the FMP. These recommendations coordinate west coast management of sport and commercial ocean salmon fisheries off the coasts of Washington, Oregon, and California and state inland salmon sport fisheries. These recommendations are subsequently implemented as ocean fishing regulations by the NMFS, and as salmon sport regulations for California marine and inland waters by the Commission.

Informative Digest/Policy Statement Overview

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations.

The Klamath River Basin, which consists of the Klamath River and Trinity River systems, is managed for fall-run Chinook Salmon (*Oncorynchus tshawytscha*) through a cooperative system of State, federal, and tribal management agencies. Salmonid regulations are designed to meet natural and hatchery escapement needs for salmonid stocks, while providing equitable harvest opportunities for ocean sport, ocean commercial, river sport, and tribal fisheries.

The Pacific Fishery Management Council (PFMC) is responsible for adopting recommendations for the management of sport and commercial ocean salmon fisheries in the Exclusive Economic Zone (three to 200 miles offshore) off the coasts of Washington, Oregon, and California. When approved by the Secretary of Commerce, these recommendations are implemented as ocean salmon fishing regulations by the National Marine Fisheries Service (NMFS).

The California Fish and Game Commission (Commission) adopts regulations for the ocean salmon sport (inside three miles) and the Klamath River Basin (in-river) sport fisheries, which are consistent with federal fishery management goals.

Tribal entities within the Klamath River Basin maintain fishing rights for ceremonial, subsistence, and commercial fisheries that are managed consistent with federal fishery management goals. Tribal fishing regulations are promulgated by the Tribes.

Klamath River Fall-Run Chinook Salmon
Adult Klamath River fall-run Chinook Salmon (KRFC) harvest allocations and natural spawning escapement goals are established by the PFMC. The KRFC harvest allocation between tribal and non-tribal fisheries is based on court decisions and allocation agreements between the various fishery representatives.

For the purpose of PFMC mixed-stock fishery modeling and salmon stock assessment, salmon greater than 22 inches total length are defined as adult (ages 3-5) and salmon less than or equal to 22 inches total length are defined as grilse salmon (age 2).

PFMC Overfishing Review
KRFC stocks have been designated as “overfished” by the PFMC. This designation is the result of not meeting conservation objectives for this stock. Management objectives and criteria for KRFC are defined in the PFMC Salmon Fishery Management Plan (FMP).

The FMP outlines a process for preparing a “rebuilding plan” that includes assessment of the factors that lead to the decline of the stock, including fishing, environmental factors, model errors, etc. The rebuilding plan includes recommendations to address conservation of KRFC, with the goal of achieving rebuilt status. The plan is currently under development by representatives of NMFS, PFMC, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife (Department), and Tribal entities, with a timeline for completion in spring of 2019. Forthcoming recommendations from the rebuilding plan may alter how KRFC are managed in

the future, including changing the in-river allocation number, and/or allocating less than the normal target number.

Klamath River Spring-Run Chinook Salmon
The Klamath River Basin also supports Klamath River spring-run Chinook Salmon (KRSC). Naturally produced KRSC are both temporally and spatially separated from KRFC in most cases.

Presently, KRSC stocks are not managed or allocated by the PFMC. This in-river sport fishery is managed by general basin seasons, daily bag limit, and possession limit regulations. KRSC harvest will be monitored on the Klamath River below the Highway 96 bridge at Weitchpec to the mouth of the Klamath River in 2019 and ensuing years by creel survey. The upper Trinity River, upstream of Junction City, will be monitored using tag returns from anglers in 2019 and future years.

KRFC Allocation Management
The PFMC 2018 allocation for Klamath River Basin sport harvest was 3,490 adult KRFC. Preseason stock projections of 2019 adult KRFC abundance will not be available from the PFMC until March 2019. The 2019 basin allocation will be recommended by the PFMC in April 2019 and presented to the Commission for adoption as a quota for the in-river sport harvest at its May 2019 teleconference meeting.

The Commission may modify the KRFC in-river sport harvest quota, which is normally a minimum of 15 percent of the non-tribal PFMC harvest allocation. Commission modifications need to meet biological and fishery allocation goals specified in law or established in the FMP, otherwise harvest opportunities may be reduced in the California ocean or in-river fisheries.

The annual KRFC in-river sport harvest quota is specified in subsection 7.50(b)(91.1)(D)1. The quota is split between four geographic areas with a subquota for each area, expressed as a percentage of the total in-river quota, specified in subsection 7.50(b)(91.1)(D)2. For angler convenience, the subquotas, expressed as the number of fish, are listed for the affected river segments in subsection 7.50(b)(91.1)(E). The in-river sport subquota percentages are as follows:

1. for the main stem Klamath River from 3,500 feet downstream of the Iron Gate Dam to the Highway 96 bridge at Weitchpec -- 17 percent of the in-river sport quota;
2. for the main stem Klamath River from downstream of the Highway 96 bridge at Weitchpec to the mouth -- 50 percent of the in-river sport quota;
3. for the Trinity River downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat -- 16.5 percent of the in-river sport quota; and
4. for the Trinity River downstream from the Denny Road bridge at Hawkins Bar to the confluence with the Klamath River -- 16.5 percent of the in-river sport quota.

The spit area (within 100 yards of the channel through the sand spit formed at the Klamath River mouth) closes to all fishing after 15 percent of the total Klamath River Basin quota has been taken downstream of the Highway 101 bridge.

These geographic areas are based upon the historical distribution of angler effort to ensure

equitable harvest of adult KRFC in the Klamath River and Trinity River. The subquota system requires the Department to monitor or assess angler harvest of adult KRFC in each geographic area. All areas will be monitored on a real time basis, except for the following:

Klamath River upstream of Weitchpec and the Trinity River: The Department has developed Harvest Predictor Models which it will use to implement fishing closures to ensure that anglers do not exceed established subquota targets. Using this method, the upper Klamath River generally closes between 28-30 days after the lower Klamath River quota is reached. Similarly, the upper Trinity River subquota area generally closes 28-30 days after the lower Trinity River subquota has been met.

Sport Fishery Management

The KRFC in-river sport harvest quota is divided into geographic areas, and harvest is monitored under real time subquota management. On the other hand, KRSC in-river sport harvest is managed by general season, daily bag limit, and possession limit regulations.

The Department presently differentiates the two stocks by the following dates in each sub-area:

Klamath River

1. January 1 through August 14 - General Season KRSC.
   For purposes of clarity, daily bag and possession limits apply to that section of the Klamath River downstream of the Highway 96 bridge at Weitchpec to the mouth.

2. August 15 to December 31 - KRFC quota management.

Trinity River

1. January 1 through August 31 – General Season KRSC.
   For purposes of clarity, daily bag and possession limits apply to that section of the Trinity River downstream of the Old Lewiston Bridge to the confluence with the South Fork Trinity River.

2. September 1 through December 31 – KRFC quota management.

The daily bag and possession limits apply to both stocks within the same sub-area and time period.

Current regulations in subsections 7.50(b)(91.1)(E)2.a. and b. specify bag limits for KRFC stocks in the Klamath River. Current regulations in subsections 7.50(b)(91.1)(E)6.b., e., and f. specify bag limits for KRFC stocks in the Trinity River. Current regulations in subsection 7.50(b)(91.1)(C)2.b. specify KRFC possession limits.

Proposed Changes

Because PFMC recommendations are not known at this time, ranges (shown in brackets in the text below) of subquotas and bag and possession limits, which encompass historical quotas, are being proposed for the 2019 KRFC fishery in the Klamath and Trinity rivers. The final KRFC bag and possession limits will align with the final federal regulations to meet biological and fishery allocation goals specified in law, or established in the FMP, otherwise harvest opportunities may

be reduced in the California ocean fisheries.

KRFC SPORT FISHERY (QUOTA MANAGEMENT):

Quota: For public notice requirements, the Department recommends the Commission consider a quota range of 0 – 67,600 adult KRFC in the Klamath River Basin for the river sport fishery. This recommended range encompasses the historical range of the Klamath River Basin allocations and allows the PFMC and Commission to make adjustments during the 2019 regulatory cycle.

Subquotas: The proposed subquotas for KRFC stocks are as follows:

- Main stem Klamath River from 3,500 feet downstream of the Iron Gate Dam to the Highway 96 bridge at Weitchpec -- 17 percent of the total quota equates to [0-11,492];
- Main stem Klamath River from downstream of the Highway 96 bridge at Weitchpec to the mouth -- 50 percent of the total quota equates to [0-33,800];
- Trinity River downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat -- 16.5 percent of the total quota equates to [0-11,154]; and
- Trinity River downstream from the Denny Road bridge at Hawkins Bar to the confluence with the Klamath River -- 16.5 percent of the total quota equates to [0-11,154].

Seasons: No changes are proposed for the Klamath River and Trinity River KRFC seasons:

- Klamath River - August 15 to December 31
- Trinity River - September 1 to December 31

Bag and Possession Limits: As in previous years, no retention of adult KRFC is proposed for the following areas once the subquota has been met.

The range of proposed bag and possession limits for KRFC stocks are as follows:

- Bag Limit - [0-4] Chinook Salmon – of which no more than [0-4] fish over 22 inches total length may be retained until the subquota is met, then 0 fish over 22 inches total length.
- Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish over 22 inches total length may be retained when the take of salmon over 22 inches total length is allowed.

KRSC SPORT FISHERY:
No regulatory changes are proposed for the general (KRSC) opening and closing season dates, and bag, possession and size limits.

OTHER CHANGES
No other changes are proposed, except those described above, and to change the year 2018 to 2019 for the upcoming season.

Benefits of the Proposed Regulations

The Commission anticipates benefits to the environment in the sustainable management of Klamath River Basin salmonid resources.

Other benefits of the proposed regulations are conformance with federal fishery management goals, health and welfare of California residents and promotion of businesses that rely on salmon sport fishing in the Klamath River Basin.

Consistency and Compatibility with Existing Regulations

Article IV, Section 20 of the State Constitution specifies that the Legislature may delegate to the Fish and Game Commission such powers relating to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated authority to the Commission to promulgate sport fishing regulations (Sections 200, 205, 315, and 316.5, Fish and Game Code). The Commission has reviewed its own regulations and finds that the proposed regulations are neither inconsistent nor incompatible with existing State regulations. Commission staff has searched the California Code of Regulations and has found no other State regulations related to sport fishing in the Klamath River Basin.

Proposed Regulatory Language

Subsection (b)(91.1) of Section 7.50, Title 14, CCR is amended to read as follows:

§ 7.50. Alphabetical List of Waters with Special Fishing Regulations.

. . . [No changes to subsections (a) through (b)(91)]

(91.1) Anadromous Waters of the Klamath River Basin Downstream of Iron Gate and Lewiston dams. The regulations in this subsection apply only to waters of the Klamath River Basin which are accessible to anadromous salmonids. They do not apply to waters of the Klamath River Basin which are inaccessible to anadromous salmon and trout, portions of the Klamath River system upstream of Iron Gate Dam, portions of the Trinity River system upstream of Lewiston Dam, and the Shasta River and tributaries upstream of Dwinnel Dam. Fishing in these waters is governed by the General Regulations for non-anadromous waters of the North Coast District (see Section 7.00, subsection (a)(4)).
(A) Hook and Weight Restrictions.
1. Only barbless hooks may be used. (For definitions regarding legal hook types, hook gaps and rigging see Chapter 2, Article 1, Section 2.10.)
2. During closures to the take of adult salmon, it shall be unlawful to remove any adult Chinook Salmon from the water by any means.
(B) General Area Closures.
1. No fishing is allowed within 750 feet of any Department of Fish and Wildlife fish-counting weir.
2. No fishing is allowed from the Ishi Pishi Road bridge upstream to and including Ishi Pishi Falls from August 15 through December 31. EXCEPTION: members of the Karuk Indian Tribe listed on the current Karuk Tribal Roll may fish at Ishi Pishi Falls using hand-held dip nets.
3. No fishing is allowed from September 15 through December 31 in the Klamath River within 500 feet of the mouths of the Salmon, the Shasta and the Scott rivers and Blue Creek.
4. No fishing is allowed from June 15 through September 14 in the Klamath River from 500 feet above the mouth of Blue Creek to 500 feet downstream of the mouth of Blue Creek.
(C) Klamath River Basin Possession Limits.
1. Trout Possession Limits.
a. The Brown Trout possession limit is 10.
b. The hatchery trout or hatchery steelhead possession limits are as follows:
(i) Klamath River - 4 hatchery trout or hatchery steelhead.
(ii) Trinity River - 4 hatchery trout or hatchery steelhead.
2. Chinook Salmon Possession Limits.
a. Klamath River downstream of the Highway 96 bridge at Weitchpec from January 1 to August 14 and the Trinity River downstream of the Old Lewiston Bridge to the confluence of the South Fork Trinity River from January 1 to August 31: 2 Chinook Salmon.
b. Klamath River from August 15 to December 31 and Trinity River from September 1 to December 31: ~~6~~[0-12] Chinook Salmon. No more than ~~3~~[0-4] Chinook Salmon over 22 inches total length may be retained when the take of salmon over 22 inches total length is allowed.
(D) Klamath River Basin Chinook Salmon Quotas.

The Klamath River fall-run Chinook Salmon take is regulated using quotas. Accounting of the tribal and non-tribal harvest is closely monitored from August 15 through December 31 each year. These quota areas are noted in subsection (b)(91.1)(E) with “Fall Run Quota” in the *Open Season and Special Regulations* column.

1. Quota for Entire Basin.

The ~~2018~~2019 Klamath River Basin quota is ~~3,490~~[0 – 67,600] Klamath River fall-run Chinook Salmon over 22 inches total length. The department shall inform the Commission, and the public via the news media, prior to any implementation of restrictions triggered by the quotas. (NOTE: A department status report on progress toward the quotas for the various river sections is updated weekly, and available at 1-800-564-6479.)

2. Subquota Percentages.

a. The subquota for the Klamath River upstream of the Highway 96 bridge at Weitchpec and the Trinity River is 50% of the total Klamath River Basin quota.

(i) The subquota for the Klamath River from 3,500 feet downstream of the Iron Gate Dam to the Highway 96 bridge at Weitchpec is 17% of the total Klamath River Basin quota.

(ii) The subquota for the Trinity River main stem downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat is 16.5% of the total Klamath River Basin quota.

(iii) The subquota for the Trinity River main stem downstream of the Denny Road bridge at Hawkins Bar to the confluence with the Klamath River is 16.5% of the total Klamath River Basin quota.

b. The subquota for the lower Klamath River downstream of the Highway 96 bridge at Weitchpec is 50% of the total Klamath River Basin quota.

(i) The Spit Area (within 100 yards of the channel through the sand spit formed at the Klamath River mouth) will close when 15% of the total Klamath River Basin quota is taken downstream of the Highway 101 bridge.

(E) Klamath River Basin Open Seasons and Bag Limits.

All anadromous waters of the Klamath River Basin are closed to all fishing for all year except those areas listed in the following table. Bag limits are for trout and Chinook Salmon in combination unless otherwise specified.

Body of Water	***Open Season and Special Regulations***	***Daily Bag Limit***
1. Bogus Creek and tributaries.	Fourth Saturday in May through August 31. Only artificial lures with barbless hooks may be used.	2 hatchery trout or hatchery steelhead**
2. Klamath River main stem from 3,500 feet downstream of Iron Gate Dam to the mouth.		
a. Klamath River from 3,500 feet downstream of the Iron Gate Dam to the Highway 96 bridge at Weitchpec.	January 1 to August 14	0 Chinook Salmon 2 hatchery trout or hatchery steelhead**
	Fall Run Quota ~~593~~[0-11,492] Chinook Salmon	~~2~~[0-4] Chinook Salmon – no more than ~~1~~[0-4] fish over 22 inches total

	August 15 to December 31, ~~2018~~2019.	length until subquota is met, then 0 fish over 22 inches total length. 2 hatchery trout or hatchery steelhead**
	Fall Run Quota Exception: Chinook Salmon over 22 inches total length may be retained from 3,500 feet downstream of Iron Gate Dam to the Interstate 5 bridge when the department determines that the adult fall-run Chinook Salmon spawning escapement at Iron Gate Hatchery exceeds 8,000 fish. Daily bag and possession limits specified for fall-run Chinook Salmon apply during this exception.	
b. Klamath River downstream of the Highway 96 bridge at Weitchpec.	January 1 to August 14.	2 Chinook Salmon 2 hatchery trout or hatchery steelhead**
	Fall Run Quota ~~1,745~~[0-33,800] Chinook Salmon August 15 to December 31, ~~2018~~2019.	~~2~~[0-4] Chinook Salmon – no more than ~~1~~[0-4] fish over 22 inches total length until subquota is met, then 0 fish over 22 inches total length. 2 hatchery trout or hatchery steelhead**
	Fall Run Quota Exception: Spit Area (within 100 yards of the channel through the sand spit formed at the Klamath River mouth). This area will be closed to all fishing after 15% of the Total Klamath River Basin Quota has been taken. All legally caught Chinook Salmon must be retained. Once the adult (greater than 22 inches) component of the total daily bag limit has been retained anglers must cease fishing in the spit area.	
3. Salmon River main stem, main stem of North Fork downstream of Sawyer's Bar bridge, and main stem of South Fork downstream of the confluence of the East Fork of the South Fork.	November 1 through February 28.	2 hatchery trout or hatchery steelhead**
4. Scott River main stem downstream of the Fort Jones-Greenview bridge to the confluence with the Klamath River.	Fourth Saturday in May through February 28.	2 hatchery trout or hatchery steelhead**

5. Shasta River main stem downstream of the Interstate 5 bridge north of Yreka to the confluence with the Klamath River.	Fourth Saturday in May through August 31 and November 16 through February 28.	2 hatchery trout or hatchery steelhead**
6. Trinity River and tributaries.		
a. Trinity River main stem from 250 feet downstream of Lewiston Dam to the Old Lewiston Bridge.	April 1 through September 15. Only artificial flies with barbless hooks may be used.	2 hatchery trout or hatchery steelhead**
b. Trinity River main stem downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat.	January 1 to August 31.	2 Chinook Salmon 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	Fall Run Quota ~~576~~[0-11,154] Chinook Salmon September 1 through December 31, ~~2018~~2019.	~~2~~[0-4] Chinook Salmon – no more than ~~1~~[0-4] fish over 22 inches total length until subquota is met, then 0 fish over 22 inches total length. 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	Fall Run Quota Exception: Chinook Salmon over 22 inches total length may be retained downstream of the Old Lewiston Bridge to the mouth of Indian Creek when the department determines that the adult fall-run Chinook Salmon spawning escapement at Trinity River Hatchery exceeds 4,800 fish. Daily bag and possession limits specified for fall-run Chinook Salmon apply during this exception.	
c. Trinity River main stem downstream of the Highway 299 West bridge at Cedar Flat to the Denny Road bridge at Hawkins Bar.	January 1 through August 31.	2 Chinook Salmon 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	September 1 through December 31.	Closed to all fishing.
d. New River main stem downstream of the confluence of the East	September 15 through November 15. Only artificial	2 hatchery trout or hatchery steelhead**

Fork to the confluence with the Trinity River.	lures with barbless hooks may be used.	
e. Trinity River main stem downstream of the Denny Road bridge at Hawkins Bar to the mouth of the South Fork Trinity River.	January 1 to August 31.	2 Chinook Salmon 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	Fall Run Quota ~~576~~[0-11,154] Chinook Salmon September 1 through December 31, ~~2018~~2019. This is the cumulative quota for subsections 6.e. and 6.f. of this table.	~~2~~[0-4] Chinook Salmon – no more than ~~1~~[0-4] fish over 22 inches total length until subquota is met, then 0 fish over 22 inches total length. 5 Brown Trout 2 hatchery trout or hatchery steelhead**
f. Trinity River main stem downstream of the mouth of the South Fork Trinity River to the confluence with the Klamath River.	January 1 to August 31.	0 Chinook Salmon 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	Fall Run Quota ~~576~~[0-11,154] Chinook Salmon September 1 through December 31, ~~2018~~2019. This is the cumulative quota for subsections 6.e. and 6.f. of this table.	~~2~~[0-4] Chinook Salmon – no more than ~~1~~[0-4] fish over 22 inches total length until subquota is met, then 0 fish over 22 inches total length. 5 Brown Trout 2 hatchery trout or hatchery steelhead**
g. Hayfork Creek main stem downstream of the Highway 3 bridge in Hayfork to the confluence with the South Fork Trinity River.	November 1 through March 31. Only artificial lures with barbless hooks may be used.	2 hatchery trout or hatchery steelhead**
h. South Fork Trinity River downstream of the confluence with the East Fork of the South Fork Trinity River to the South Fork Trinity River bridge at Hyampom.	November 1 through March 31. Only artificial lures with barbless hooks may be used.	2 hatchery trout or hatchery steelhead**

i. South Fork Trinity River downstream of the South Fork Trinity River bridge at Hyampom to the confluence with the Trinity River.	November 1 through March 31.	0 Chinook Salmon. 2 hatchery trout or hatchery steelhead**

. . . [No changes subsections 7.50(b)(92) through (b)(212)]

* Wild Chinook Salmon are those not showing a healed adipose fin clip and not showing a healed left ventral fin clip.
**Hatchery trout or steelhead in anadromous waters are those showing a healed adipose fin clip (adipose fin is absent). Unless otherwise provided, all other trout and steelhead must be immediately released. Wild trout or steelhead are those not showing a healed adipose fin clip (adipose fin is present).

Note: Authority cited: Sections 200, 205, 265, 270, 315, 316.5 and 399, Fish and Game Code. Reference: Sections 200, 205, 265, 270 and 316.5, Fish and Game Code.

CDFW News

FISHERIES, FISHING (COMMERCIAL), FISHING (SPORT), MARINE, REGULATIONS, SALMON

‘Slightly Improved’ Forecast for California’s 2019 Ocean Salmon Season

MARCH 1, 2019 | KMACINTY

California’s 2019 ocean salmon fishing season should be slightly better than last year’s, according to information presented at this week’s annual Salmon Information Meeting held in Santa Rosa by the California Department of Fish and Wildlife (CDFW). The ocean abundance projections for Sacramento River fall Chinook (SRFC), a main salmon stock harvested in California waters, is estimated at 379,600 adult salmon, an increase over 2018 forecasts. This may result in increased fishing opportunity in some central coastal areas. The Klamath River fall Chinook (KRFC) abundance forecast of 274,200 adult salmon is lower than 2018 forecast, but still an improvement over low forecast numbers seen in recent years.

“We are cautiously optimistic that the increase in ocean abundance of SRFC will translate into more fishing opportunity this year,” said CDFW Environmental Scientist Kandice Morgenstern.

Recreational anglers and commercial salmon trollers at the meeting provided comments and voiced concerns to a panel of fishery managers, scientists and industry representatives. Stakeholder input will be taken into consideration when developing three season alternatives during the March 6-12 Pacific Fishery Management Council (PFMC) meeting in Vancouver, Wash. Final ocean salmon seasons will be adopted during the April 9-16 PFMC meeting in Rohnert Park.

The PFMC may take a conservative approach when crafting 2019 ocean salmon seasons since both SRFC and KRFC stocks are considered to be overfished under the terms of the federal Salmon Fishery Management Plan due to three years of low spawning escapement. Additionally, persistent concerns over protected Sacramento River winter Chinook and California Coastal Chinook could limit fishing opportunity south of Point Arena and north of Point Sur, respectively.

For more information on the salmon season setting process or general ocean salmon fishing information, please visit the Ocean Salmon Project website (http://www.wildlife.ca.gov/fishing/ocean/%20regulations/salmon) or call the ocean salmon hotline at (707) 576-3429.

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FISHING **OCEAN** **REGULATIONS** **SALMON** **SALMON FISHERIES**

State of California
Department of Fish and Wildlife

Original on file.
Received April 8, 2019, 8:00AM

Date: April 4, 2019

To: Melissa Miller-Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Submission of Pre-Adoption Statement of Reasons to Amend Subsection (b)(91.1) of Section 7.50, Title 14, CCR, RE: Klamath River Basin Sport Fishing Regulations**

Please find attached the Pre-Adoption Statement of Reasons (PSOR) for the 2019 Klamath River Basin sport fishing regulations. The PSOR includes a response to comment from James Stone, President of the NorCal Guides and Sportsmen's Association, on the proposed sport fishing regulations. No changes were made to the original proposed regulations. Specific bag and possession limits for Klamath River Basin adult fall-run Chinook Salmon will be adopted during the Commission teleconference on May 16, 2019, after federal (Pacific Fisheries Management Council) review of west coast salmon stocks and fishery allocations have been proposed.

If you have any questions or need additional information, please contact Kevin Shaffer, Chief, Fisheries Branch, at (916) 327-8841 or by e-mail at Kevin.Shaffer@wildlife.ca.gov.

Attachment

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-adoption Statement of Reasons)

Amend Subsection (b)(91.1) of Section 7.50
Title 14, California Code of Regulations
Re: Klamath River Basin Sport Fishing Regulations

I. Date of Initial Statement of Reasons: November 20, 2018

II. Date of Pre-adoption Statement of Reasons: April 4, 2019

III. Dates and Locations of Scheduled Hearings:

(a)	Notice Hearing:	Date:	December 13, 2018
		Location:	Oceanside
(b)	Discussion Hearing:	Date:	February 6, 2019
		Location:	Sacramento
(c)	Discussion Hearing:	Date:	April 17, 2019
		Location:	Santa Monica
(d)	Adoption Hearing:	Date:	May 16, 2019
		Location:	Teleconference

IV. Description of Modification of Originally Proposed Language of Initial Statement of Reasons:

No changes have been made to the originally proposed regulatory language.

V. Reasons for Modification of Originally Proposed Language of Initial Statement of Reasons:

No changes have been made to the originally proposed regulatory language.

VI. Summary of Primary Considerations Raised in Opposition and in Support:

Comment by James Stone, President of the NorCal Guides and Sportsmen's Association, received at the February 6, 2019 Commission meeting: Mr. Stone asked that the Commission amend the regulatory language, changing "total length" to "fork length" to have parity and equality between the way that the Department of Fish and Wildlife (Department) and all biologists and hatcheries consider a jack salmon (by fork

length) and how guides and fishermen consider a jack salmon (by total length).

Response: The Department recommends denial of the proposed amendment as it would cause a greater likelihood of exceeding adult quotas. The total length measurement for sport angling regulations in the Klamath River Basin is consistent with statewide regulations. Biological fisheries sampling does generally assess fork length as a metric. Fork length is used because it is a more consistent measurement when fin erosion occurs, particularly in salmonids that are sampled post mortem. Additionally, the actual size (average and range) of Chinook Salmon jacks varies annually, and the pre-season use of a “jack” cut off size is used provisionally. Post-season analyses determine the actual size of jacks in any particular year, which often overlaps with age three Chinook Salmon to some degree. If 22 inches fork length were used in a regulatory context for the proposed Klamath River Basin sport fishing regulations, it would, in effect, increase the jack size from the current regulatory delineation, since 22 inches fork length equals approximately 23 inches total length. This change would result in more age three fish (adults) provisionally harvested in the fishery as jacks, but later classified as adults during post-season analysis. Because Klamath River Basin fall Chinook Salmon fisheries are managed under an adult quota (exclusive of jacks), it is important to manage for this quota and to avoid exceedance to the extent possible. Increasing the jack size from the current regulatory framework of total length to fork length would cause a greater likelihood of exceeding adult quotas. This was demonstrated in 1998 when cut off for Chinook Salmon jacks was 24 inches total length. Post-season analyses resulted in reclassification of thousands of “jacks” as adults, which exceeded the adult fall Chinook Salmon quota by approximately 5,000 fish that year. The regulation was changed back to the original 22 inches total length the following year.

State of California
Department of Fish and Wildlife

Original on file.
Received December 3, 2018, 10:40AM

Date: November 29, 2018

To: Melissa Miller-Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: Submittal of Initial Statement of Reasons to Amend Central Valley Salmon Sport Fishing Regulations

Please find attached the Initial Statement of Reasons to amend subsections (b)(5), (b)(68), (b)(124), and (b)(156.5) of Section 7.50, Title 14, California Code of Regulations, for Chinook Salmon sport fishing regulations in the Central Valley.

For the 2019 Central Valley sport fishery, the California Department of Fish and Wildlife (Department) is presenting three regulatory options for the Commission's consideration to encompass possible Pacific Fishery Management Council (PFMC) 2019 recommendations for Sacramento River fall-run Chinook Salmon (SRFC) stocks. The purpose for providing options is to increase flexibility for development of the final Central Valley sport fishing regulations. The Department's preferred option, including specific bag and possession limits for SRFC, will be presented to the Commission after the PFMC adopts its final recommendations at its April 2019 meeting.

The draft negative declaration will be provided to the Commission prior to the discussion hearing.

If you have any questions or need additional information, please contact Kevin Shaffer, Chief, Fisheries Branch, by telephone at (916) 327-8841 or by e-mail at Kevin.Shaffer@wildlife.ca.gov. The public notice should identify Senior Environmental Scientist, Karen Mitchell, as the Department's point of contact for this rulemaking. Ms. Mitchell can be reached at (916) 445-0826 or by e-mail at Karen.Mitchell@wildlife.ca.gov.

Attachment

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION

Amend Subsections (b)(5), (b)(68), (b)(124), and (b)(156.5) of Section 7.50,
Title 14, California Code of Regulations
Re: Central Valley Salmon Sport Fishing

I. Date of Initial Statement of Reasons: November 20, 2018

II. Dates and Locations of Scheduled Hearings

(a)	Notice Hearing:	Date:	December 13, 2018
		Location:	Oceanside, CA
(b)	Discussion Hearing:	Date:	February 6, 2019
		Location:	Sacramento, CA
(c)	Discussion Hearing:	Date:	April 17, 2019
		Location:	Santa Monica, CA
(d)	Adoption Hearing:	Date:	May 16, 2019
		Location:	Teleconference

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations.

Current regulations in subsections (b)(5), (b)(68), (b)(124) and (b)(156.5) of Section 7.50 prescribe the 2018 seasons and daily bag and possession limits for Sacramento River fall-run Chinook Salmon (*Oncorhynchus tshawytscha*; SRFC) sport fishing in the American, Feather, Mokelumne, and Sacramento rivers, respectively. Collectively, these four rivers constitute the "Central Valley fishery" for SRFC for purposes of this document. Each year, the Department of Fish and Wildlife (Department) recommends new Chinook Salmon bag and possession limits for consideration by the Fish and Game Commission (Commission) to align the fishing limits with up-to-date management goals, as set forth below.

The Pacific Fishery Management Council (PFMC) is responsible for adopting recommendations for the management of recreational and commercial ocean salmon fisheries in the Exclusive Economic Zone (three to 200 miles offshore) off the coasts of Washington, Oregon, and California. When approved by the Secretary of Commerce, these recommendations are implemented as ocean salmon fishing regulations by the National Marine Fisheries Service (NMFS).

The PFMC will develop the annual Pacific coast ocean salmon fisheries regulatory options for public review at its March 2019 meeting, and will adopt its final regulatory recommendations at its April 2019 meeting based on the PFMC salmon abundance estimates and recommendations for ocean harvest for the coming season. Based on the April 2019 recommendation by PFMC, the Department will recommend specific bag and possession limit regulations to the Commission at its April 17, 2019 meeting. The Commission will then consider adoption of the Central Valley salmon sport fishing regulations at its May 16, 2019 teleconference.

For the purpose of PFMC mixed-stock fishery modeling and salmon stock assessment, adult salmon are generally those considered three to five years in age, and grilse salmon are those approximately two years of age. The age classes are distinguished by a cutoff of salmon total length measurement, depending on the inland (in-river) fishery. For purposes of the proposed regulation, this cutoff is presented as a range of 26 to 28 inches total length, as outlined under the options for the proposed regulations (below).

Current Regulations

In 2018, salmon sport fishing in the Central Valley was constrained for the first time since 2010 due to a low SRFC stock abundance forecast. At its March 2018 meeting, the PFMC determined it would be necessary to specify an ocean/inland sharing arrangement for the limited SRFC available for harvest (take) in 2018 for ocean sport and commercial fisheries, and in-river recreational fisheries in the Central Valley. As a result, the Department agreed to a one-time limit of the in-river harvest to 15 percent of the total available SRFC harvest.

In December 2017, the Commission provided notice of a range of alternatives for the 2018 Central Valley fishery, including a suite of bag and possession limit alternatives that were area-specific. However, because the Department did not anticipate the impending SRFC stock collapse, this range of alternatives did not include a number of other measures that might have been used to constrain inland SRFC catches to stay within the federal harvest projections. Consequently, the only management measure the Department could recommend to the Commission to target the federal in-river harvest projection was a reduction in the daily bag limit from two fish to one fish in all areas that would be open to retention during 2018.

Proposed Regulations

The Department recognizes the uncertainty of SRFC in-river harvest projections. Therefore, for the 2019 Central Valley fishery, the Department is presenting three regulatory options for the Commission's consideration to tailor 2019 Central Valley fishery management to target 2019 in-river fisheries harvest projections.

- Option 1 is the most liberal of the three options and allows take of any size Chinook Salmon up to the daily bag and possession limits.
- Option 2 allows for take of a limited number of adult Chinook Salmon, with grilse Chinook Salmon making up the remainder of the daily bag and possession limits.

- Option 3 is the most conservative option and allows for a grilse-only Chinook Salmon fishery.

All three options increase fishing opportunities on the Feather and Mokelumne rivers by: (1) extending the salmon fishing season by two weeks on the Feather River between the Thermalito Afterbay Outfall and the Live Oak boat ramp; and (2) by extending the salmon and hatchery steelhead fishing season on approximately 10 miles of the Mokelumne River between the Highway 99 Bridge and Elliott Road. The expansion of fishing opportunity on 10 miles on the Mokelumne River for hatchery steelhead is buffered by the overall large run of hatchery steelhead, and because spawning occurs outside this stretch of river.

Grilse Chinook Salmon Fishery Size Considerations

Grilse salmon are salmon that spend two years in the ocean before returning to their natal streams to spawn. These fish are generally smaller in size and contribute less to the overall salmon population than adult salmon, which typically spend three to five years in the ocean before returning to freshwater to spawn. Typically, age-two salmon (grilse) are mostly males (jacks) with relatively few female (jills). Should a reduction in the adult component of the stock be imposed by PFMC harvest projections, the Department is recommending specifying angling opportunities on the smaller, and possibly more numerous grilse salmon. Take of adult salmon would be limited (Option 2) or prohibited (Option 3) under regulation, and the subsequent juvenile production would help rebuild the depressed stock size.

When considering a grilse fishery, determining a size cutoff that balances angling harvest opportunity for jacks versus preserving the limited number of females available to spawn is important. If the total length size cutoff is too short (conservative), too few jacks will be caught by anglers, and they will be underutilized because jacks are infrequently used as hatchery broodstock, or because jacks are out-competed by larger males in-river. If the cutoff is too large (liberal), then angling catch of the smaller females will increase, reducing the hatchery and in-river spawners, since the limiting factor for spawning is egg availability from jills and adult females. Therefore, the Department is proposing a grilse salmon size limit range of less than or equal to 26 to 28 inches total length (TL) for discussion before the Department makes a final recommendation. Considered in this context, the cutoff size discussion is a trade-off between restricting take of the available adult female salmon versus increasing harvest of possibly abundant smaller, two-year old male salmon.

A review of brood year 2008-2015 Central Valley Angler Survey coded wire tag recovery data (2,329 age three and 789 age two Chinook Salmon) shows a grilse to adult cutoff at approximately 27-inch fork length (FL). Using the adult spawning Chinook Salmon fork length to total length conversion formula developed in Pahlke 1988[a], 27-inch FL converts to 28.3-inch TL. Below are the percentages of adult SRFC that would be prohibited from harvest at a 26, 27, and 28-inch TL cutoff for grilse salmon.

[a] Pahlke, K, 1988. Length Conversion Equations for Sockeye, Chinook, and Coho salmon in southeast Alaska. Regional Information Report No. Ij88-03. Alaska Department of Fish and Game Division of Commercial Fisheries, Southeast Region.

- On average, a grilse fishery with a 26-inch TL cutoff (i.e., less than or equal to 26 inches TL) would allow harvest of 65 percent of age-two Chinook Salmon, while not allowing harvest on 98.9 percent of age-three Chinook Salmon. It would prevent harvest on 99 percent of adult males and 98.9 percent of adult females, where the majority of harvested fish would be grilse.

- On average, a grilse fishery with a 27-inch TL cutoff (i.e., less than or equal to 27 inches TL) would allow harvest of 81 percent of age-two Chinook Salmon, while not allowing harvest on 97.3 percent of age-three Chinook Salmon. It would prevent harvest on 97.3 percent of adult males and 97.9 percent of adult females, where the majority of harvested fish would be grilse.

- On average, a grilse fishery with a 28-inch TL cutoff (i.e., less than or equal to 28 inches TL) would allow harvest of 93.4 percent of age-two Chinook Salmon, while not allowing harvest on 94.5 percent of age-three Chinook Salmon. It would prevent harvest on 95 percent of adult males and 96 percent of adult females, where the majority of harvested fish would be grilse.

Predicting the abundance of grilse for any given year is currently not possible because they are not susceptible to angling harvest prior to becoming grilse, and ocean abundance of pre-grilse sized fish is not monitored. The first indication of a large Central Valley grilse population is usually from in-river recreational fishing beginning in mid-July. Grilse numbers compared to adult numbers for a given year are usually not fully known until the following January, when spawner survey results are completed. For this reason, using an average of previous grilse data is a reasonable method of setting regulatory limits for future years.

Key to Proposed Regulatory Changes:

Because the PFMC recommendations are not known at this time, a range shown in [brackets] in the text below of bag and possession limits is indicated where it is desirable to continue Chinook Salmon fishing in the American, Feather, Mokelumne, and Sacramento rivers.
Bold text indicates changes to the in-river season or boundary.

The following options are provided for Commission consideration:

Option 1 – Any Size Chinook Salmon Fishery

This option would allow anglers to take up to [0-4] Chinook Salmon of any size per day. This option is the Department's preferred option if the 2019 SRFC stock abundance forecast is sufficiently high to avoid the need to constrain in-river SRFC harvest.

In addition, this option would extend the salmon fishing season by two weeks (to October 31) on the Feather River between the Thermalito Afterbay Outfall and the Live Oak boat ramp to allow for additional fishing opportunity. This section of the Feather River used to

provide spawning habitat for SRFC, but adult spawning has not been observed in this section of the Feather River for approximately 10 years. Allowing the take of salmon in this section of the Feather River during this time period will provide additional sport fishing opportunity without adversely impacting SRFC populations. Lastly, this option would provide additional fishing opportunity by extending the salmon season by two and one-half months (to December 31) and allowing year-round fishing on hatchery steelhead on approximately 10 miles of the Mokelumne River between the Highway 99 Bridge and Elliott Road. This would allow anglers to continue to fish lower in the river where no spawning is occurring. In addition, the Mokelumne River supports a large run of hatchery origin steelhead. Allowing the take of salmon and hatchery steelhead in this section of the Mokelumne River during this time period will provide additional sport fishing opportunity without adversely impacting populations of SRFC or wild steelhead.

American River, subsection 7.50(b)(5):

(B) From the USGS gauging station cable crossing near Nimbus Hatchery to the SMUD power line crossing the southwest boundary of Ancil Hoffman Park.

July 16 through October 31 with a bag limit of [0-4] Chinook Salmon.

Possession limit - [0-12] Chinook Salmon.

(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park to the Jibboom Street bridge.

July 16 through December 31 with a bag limit of [0-4] Chinook Salmon.

Possession limit - [0-12] Chinook Salmon.

(D) From the Jibboom Street bridge to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit - [0-12] Chinook Salmon.

Feather River, subsection 7.50(b)(68):

(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to 200 yards above the Live Oak boat ramp.

July 16 through **October 31** with a daily bag limit of [0-4] Chinook Salmon.

Possession limit - [0-12] Chinook Salmon.

(E) From 200 yards above the Live Oak boat ramp to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

Mokelumne River, subsection 7.50(b)(124):

(A) From Camanche Dam to **Elliott Road**.

July 16 through October 15 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

(B) From **Elliott Road** to the Woodbridge Irrigation District Dam and including Lodi Lake.

From July 16 through December 31 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

(D) From the Lower Sacramento Road bridge to the mouth.

From July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

Sacramento River below Keswick Dam, subsection 7.50(b)(156.5):

(C) From Deschutes Road bridge to the Red Bluff Diversion Dam.

August 1 through December 16 with a bag limit of [0-4] Chinook Salmon

Possession limit – [0-12] Chinook Salmon.

(D) From the Red Bluff Diversion Dam to the Highway 113 bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

(E) From the Highway 113 bridge to the Carquinez Bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

Option 2 – Limited Adult and Grilse Salmon Fishery

This option would allow the take of a limited number of adult Chinook Salmon, with grilse Chinook Salmon making up the remainder of the daily bag and possession limits. Should a reduction in the adult component of the stock be imposed by PFMC harvest projections, the Department is recommending specifying angling opportunities on the smaller, and possibly more numerous grilse salmon to increase angling harvest opportunities. Take of adult salmon would be limited under regulation, and the subsequent juvenile production would help rebuild the depressed stock size at a time when there is the need to restrict harvest of adult salmon.

As with Option 1, Option 2 would extend the salmon fishing season by two weeks (to October 31) on the Feather River between the Thermalito Afterbay Outfall and the Live Oak boat ramp to allow for additional fishing opportunity. This section of the Feather River used to provide spawning habitat for SRFC, but adult spawning has not been observed in this section of the Feather River for approximately 10 years. Allowing the take of salmon in this section of the Feather River during this time period will provide additional sport fishing opportunity without adversely impacting SRFC populations. Lastly, this option would provide additional fishing opportunity by extending the salmon season by two and one-half months (to December 31) and allowing year-round fishing on hatchery steelhead on approximately 10 miles of the Mokelumne River between the Highway 99 Bridge and Elliott Road. This would allow anglers to continue to fish lower in the river where no spawning is occurring. In addition, the Mokelumne River supports a large run of hatchery origin steelhead. Allowing the take of salmon and hatchery steelhead in this section of the Mokelumne River during this time period will provide additional sport fishing opportunity without adversely impacting populations of SRFC or wild steelhead.

<u>American River, subsection 7.50(b)(5):</u>

(B) From the USGS gauging station cable crossing near Nimbus Hatchery to the SMUD power line crossing the southwest boundary of Ancil Hoffman Park.

July 16 through October 31 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish may be over [26-28] inches total length.

(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park to the Jibboom Street bridge.

July 16 through December 31 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish may be over [26-28] inches total length.

(D) From the Jibboom Street bridge to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish may be over [26-28] inches total length.

Feather River, subsection 7.50(b)(68):

(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to 200 yards above the Live Oak boat ramp.

July 16 through **October 31** with a daily bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish may be over [26-28] inches total length.

(E) From 200 yards above the Live Oak boat ramp to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

Mokelumne River, subsection 7.50(b)(124)

(A) From Camanche Dam **to Elliott Road**.

July 16 through October 15 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.
Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

(B) From **Elliott Road** to the Woodbridge Irrigation District Dam and including Lodi Lake.

From July 16 through December 31 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

(D) From the Lower Sacramento Road bridge to the mouth.

From July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

Sacramento River below Keswick Dam, subsection 7.50(b)(156.5):

(C) From Deschutes Road bridge to the Red Bluff Diversion Dam.

August 1 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

(D) From the Red Bluff Diversion Dam to the Highway 113 bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

(E) From the Highway 113 bridge to the Carquinez Bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

Option 3 – Grilse-only Salmon Fishery

This option would allow for a grilse-only salmon fishery. Should a reduction in the adult component of the stock be imposed by PFMC harvest projections, the Department is recommending specifying angling opportunities on the smaller, and possibly more numerous grilse salmon to increase angling harvest opportunities. Take of adult salmon would be prohibited under regulation, and the subsequent juvenile production would help rebuild the depressed stock size at a time when there is the need to restrict harvest of adult salmon.

As with Options 1 and 2, Option 3 would extend the salmon fishing season by two weeks (to October 31) on the Feather River between the Thermalito Afterbay Outfall and the Live Oak boat ramp to allow for additional fishing opportunity. This section of the Feather River used to provide spawning habitat for SRFC, but adult spawning has not been observed in this section of the Feather River for approximately 10 years. Allowing the take of salmon in

this section of the Feather River during this time period will provide additional sport fishing opportunity without adversely impacting SRFC populations. Lastly, this option would provide additional fishing opportunity by extending the salmon season by two and one-half months (to December 31) and allowing year-round fishing on hatchery steelhead on approximately 10 miles of the Mokelumne River between the Highway 99 Bridge and Elliott Road. This would allow anglers to continue to fish lower in the river where no spawning is occurring. In addition, the Mokelumne River supports a large run of hatchery origin steelhead. Allowing the take of salmon and hatchery steelhead in this section of the Mokelumne River during this time period will provide additional sport fishing opportunity without adversely impacting populations of SRFC or wild steelhead.

American River, subsection 7.50(b)(5):

(B) From the USGS gauging station cable crossing near Nimbus Hatchery to the SMUD power line crossing the southwest boundary of Ancil Hoffman Park.

July 16 through October 31 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park to the Jibboom Street bridge.

July 16 through December 31 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(D) From the Jibboom Street bridge to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

Feather River, subsection 7.50(b)(68):

(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to the Live Oak boat ramp.

July 16 through **October 31** with a daily bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(E) From 200 yards above the Live Oak boat ramp to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

Mokelumne River, subsection 7.50(b)(124):

(A) From Camanche Dam to **Elliott Road**

July 16 through October 15 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(B) From **Elliott Road** to the Woodbridge Irrigation District Dam and including lake Lodi.

From July 16 through December 31 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(D) From the Lower Sacramento Road bridge to the mouth.

From July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

Sacramento River below Keswick Dam, subsection 7.50(b)(156.5):

(C) From Deschutes Road bridge to the Red Bluff Diversion Dam.

August 1 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(D) From the Red Bluff Diversion Dam to the Highway 113 bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(E) From the Highway 113 bridge to the Carquinez Bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

Necessity of the Proposed Regulation Changes

The proposed regulations are necessary to adjust Chinook Salmon bag and possession limits, size limits, and open seasons for the American, Feather, Mokelumne, and Sacramento rivers for consistency with PFMC salmon abundance estimates and recommendations for ocean harvest for the coming season. The proposed regulatory changes will maximize salmon and steelhead fishing opportunity where possible through the proposed extensions of season end dates for portions of the Feather and Mokelumne Rivers, without adversely affecting SRFC or wild steelhead.

OTHER CHANGES:

Under all options, changes are proposed to fix punctuation and to remove the extra word “in” in subsection 7.50(b)(124)(A).

(b) Goals and Benefits of the Regulation:

It is the policy of this State to encourage the conservation, maintenance, and utilization of the living resources of the ocean and other waters under the jurisdiction and influence of the State for the benefit of all the citizens of the State and to promote the development of local fisheries and distant water fisheries based in California in harmony with international law, respecting fishing and the conservation of the living resources of the ocean and other waters under the jurisdiction and influence of the State. The objectives of this policy include, but are not limited to, the maintenance of sufficient populations of all species of aquatic organisms to ensure their continued existence, and the maintenance of a sufficient resource to support a reasonable sport use.

Adoption of scientifically-based SRFC bag and possession limits provides for the maintenance of sufficient populations of Chinook Salmon to ensure their continued existence.

The benefits of the proposed regulations are consistency with federal fishery management goals, sustainable management of Central Valley Chinook Salmon resources, general

health and welfare of California residents, and promotion of businesses that rely on Central Valley Chinook Salmon sport fishing.

(c) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 200, 205, 265, 270, 315, 316.5, and 399 Fish and Game Code.

Reference: Sections 200, 205, 265, 270 and 316.5, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change: None.

(e) Identification of Reports or Documents Supporting Regulation Change:

Pahlke, K, 1988. Length Conversion Equations for Sockeye, Chinook, and Coho salmon in southeast Alaska. Regional Information Report No. Ij88-03. Alaska Department of Fish and Game Division of Commercial Fisheries, Southeast Region.

(f) Public Discussions of Proposed Regulations Prior to Notice Publication:

No public meetings are being held prior to the notice publication. The 45-day comment period provides adequate time for review of the proposed amendments.

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change:

No alternatives were identified by or brought to the attention of Commission staff that would have the same desired regulatory effect.

(b) No Change Alternative:

The no change alternative would leave existing 2018 regulations in place. The no-change alternative would not allow for appropriate harvest rates, while the proposed regulations will allow the state to harmonize its bag and possession limits with NMFS' regulations.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed changes are necessary for the continued preservation of the resource, while providing inland sport fishing opportunities and thus, the prevention of adverse economic impacts.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission does not anticipate adverse impacts, but acknowledges the potential for short-term negative impacts on the creation or elimination of jobs within the state. The Commission anticipates no adverse impacts on the creation of new business, the elimination of existing businesses or the expansion of businesses in California (see Table 1). Minor variations in the bag and possession limits and/or the implementation of a size limit are unlikely to significantly impact the volume of business activity. The loss of up to 20 jobs with Option 3 is not expected to eliminate businesses because reduced fishing days will be partially offset by the extension of the salmon fishing season on portions of the Feather and Mokelumne rivers and by opportunities to fish for grilse Chinook Salmon and other species.

The Commission anticipates benefits to the health and welfare of California residents. Providing opportunities for a Chinook Salmon sport fishery encourages consumption of a nutritious food. The Commission anticipates benefits to the environment by the sustainable management of California's Chinook Salmon resources in the Central Valley.

The Commission does not anticipate any benefits to worker safety.

Other benefits of the proposed regulations are concurrence with federal fishery management goals and promotion of businesses that rely on Central Valley Chinook Salmon sport fishing.

(c) Cost Impacts on a Representative Private Person or Business:

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.

(e) Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment

The regulatory amendments of subsections (b)(5), (b)(68), (b)(124), and (b)(156.5) of Section 7.50 under consideration will set the 2019 sport fishing regulations for Chinook Salmon in the American, Feather, Mokelumne, and Sacramento rivers, respectively, for consistency with PFMC in-river harvest projections.

Option 1 would allow anglers to take any size Chinook Salmon up to the daily bag limit [0-4] and possession limit [0-12] (most liberal option).

Option 2 would allow for take of a limited number of adult Chinook Salmon, with grilse Chinook Salmon making up the remainder of the daily bag limit [0-4] and possession limit [0-12].

Option 3 is the most conservative option and allows for take of only grilse Chinook Salmon up to the daily bag limit [0-4] and possession limit [0-12]. Take of adult salmon would not be allowed.

All three options increase fishing opportunities on the Feather and Mokelumne rivers by: (1) extending the salmon fishing season by two weeks on the Feather River between the Thermalito Afterbay Outfall and the Live Oak boat ramp; and (2) by extending the salmon and hatchery steelhead fishing season on approximately 10 miles of the Mokelumne River between the Highway 99 Bridge and Elliott Road.

In a normal season, the Central Valley fall Chinook Salmon fishery generates $18,536,979 in total economic output and supports 130 jobs. The regional and statewide economic impacts factor into the effort to balance the maintenance of the recreational fishery with resource preservation, while complying with PFMC recommendations. The potential economic impacts that may result from each in-river harvest projection as specified in Option 1, Option 2, and Option 3 are evaluated in terms of each scenario's probable impact on the number of angler days, and thus area spending.

Table 1. Central Valley Salmon Fishery Economic Impacts (2017$)

Regulation	Angler Days	Angler Expenditures	Total Econ Impact	Jobs
Option 1	179,550	$ 13,182,320	$ 18,536,979	130
Option 2	161,595	$ 11,864,088	$ 16,682,731	120
Option 3	143,640	$ 10,545,856	$ 14,829,094	110
Difference	Angler Day Loss	Expenditure Loss	Total Impact Loss	Job Loss
Option 1	0	$ -	$ -	0
Option 2	17,955	$ 1,318,232	$ 1,854,248	10
Option 3	35,910	$ 2,636,464	$ 3,707,885	20

Sources: CDFW Fisheries Branch economic analysis; U.S. Fish and Wildlife Service, 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation; dollar figures adjusted for inflation with Implicit Price Deflator for Personal Consumption Expenditures, Bureau of Economic Analysis.

Historical correlations between catch limits and fishery participation levels suggest that Option 1 could enable a historically average number of angler days for the 2019 Chinook Salmon season on the American, Feather, Mokelumne, and Sacramento rivers. Option 2 may result in declines in angler days of 17,955 below an average year. Option 3 may result in larger declines or about 35,910 fewer angler days.

For all options, the proposed extensions of season end dates for portions of the Feather and Mokelumne Rivers would extend the period of angler regional economic contributions. Additionally, anglers may pursue other in-river sport fish aside from Chinook salmon, such as steelhead (*Oncorhynchus mykiss*), striped bass (*Morone saxatilis*), largemouth bass (*Micropterus salmoides*), sturgeon (*Acipenser transmontanus*) and catfish (*Ictalurus spp.*), that may mitigate any adverse impacts from any reductions in salmon fishing. In sum, the options presented to the Commission were conceived with the goal of enabling levels of recreational SRFC fishing in the range of historical averages, and thus should not be a source of significant adverse economic impacts.

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State

The Commission does not anticipate that any of the proposed options would induce substantial impacts on the creation or elimination of jobs. For Option 1, no change in job creation or elimination is anticipated. Option 2 and Option 3 have the potential to result in fewer angler visits, and absent substitution toward other sportfish and/or activities in the affected areas, the reduction in angler spending could reduce the support for 10 - 20 jobs statewide. These job impacts are statewide and may be moderated by the additional two and one-half months of fishing opportunity on approximately 10 miles of the Mokelumne River between the Highway 99 bridge and Elliott Road, and by the additional two weeks of fishing opportunity on the Feather River between the Thermalito Afterbay Outfall and the Live Oak boat ramp.

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State

The Commission does not anticipate that any of the proposed options would induce substantial impacts on the creation of new business or the elimination of existing businesses, because the proposed changes to the regulations are unlikely to be substantial enough to stimulate the creation of new businesses or cause the elimination of existing businesses. The season extensions for portions of the Mokelumne and Feather rivers are expected to sustain the number of fishing trips and the level of economic stimulus within historical averages.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State

The Commission does not anticipate that any of the proposed options would induce substantial impacts on the expansion of businesses currently doing business within the state. The proposed regulations are not anticipated to increase demand for services or products from the existing businesses that serve inland sport fishermen. The number of

fishing trips and angler economic contributions are expected to remain within the range of historical averages.

(d) Benefits of the Regulation to the Health and Welfare of California Residents

The Commission anticipates benefits to the health and welfare of California residents. Chinook Salmon is a nutritious food source and providing inland sport fishery opportunities encourages consumption of this nutritious food. Sport fishing also contributes to increased mental health of its practitioners, as fishing is a hobby and form of relaxation for many. Sport fishing also provides opportunities for multi-generational family activities and promotes respect for California's environment by younger generations, the future stewards of California's natural resources.

(e) Benefits of the Regulation to Worker Safety

The Commission does not anticipate any benefits to worker safety from the proposed regulations because inland sport fishing does not impact working conditions.

(f) Benefits of the Regulation to the State's Environment

Under all Options 1-3, the Commission anticipates benefits to the environment in the sustainable management of Central Valley Chinook Salmon. It is the policy of this State to encourage the conservation, maintenance, and utilization of the living resources of the ocean and other waters under the jurisdiction and influence of the State for the benefit of all the citizens of the State and to promote the development of local fisheries and distant water fisheries based in California in harmony with international law, respecting fishing and the conservation of the living resources of the ocean and other waters under the jurisdiction and influence of the State. The objectives of this policy include, but are not limited to, the maintenance of sufficient populations of all species of aquatic organisms to ensure their continued existence, and the maintenance of a sufficient resource to support a reasonable sport use.

In accordance with this policy, adoption of scientifically-based inland Chinook Salmon bag and possession limits provides for the maintenance of sufficient populations of salmon to ensure their continued existence and thus continued economic stimulus.

(g) Other Benefits of the Regulation

Other benefits of the regulation include consistency with federal fishery management goals and the promotion of businesses that rely on Central Valley Salmon sport fishing.

Informative Digest/Policy Statement Overview

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations.

Current regulations in subsections (b)(5), (b)(68), (b)(124) and (b)(156.5) of Section 7.50 prescribe the 2018 seasons and daily bag and possession limits for Sacramento River fall-run Chinook Salmon (*Oncorhynchus tshawytscha*; SRFC) sport fishing in the American, Feather, Mokelumne, and Sacramento rivers, respectively. Collectively, these four rivers constitute the "Central Valley fishery" for SRFC. Each year, the Department of Fish and Wildlife (Department) recommends new Chinook Salmon bag and possession limits for consideration by the Fish and Game Commission (Commission) to align fishing limits with up-to-date management goals, as set forth below.

The Pacific Fishery Management Council (PFMC) is responsible for adopting recommendations for the management of recreational and commercial ocean salmon fisheries in the Exclusive Economic Zone (three to 200 miles offshore) off the coasts of Washington, Oregon, and California. When approved by the Secretary of Commerce, these recommendations are implemented as ocean salmon fishing regulations by the National Marine Fisheries Service (NMFS).

The PFMC will develop the annual Pacific coast ocean salmon fisheries regulatory options for public review at its March 2019 meeting and will adopt its final regulatory recommendations at its April 2019 meeting based on the PFMC salmon abundance estimates and recommendations for ocean harvest (take) for the coming season. Based on the April 2019 recommendations by PFMC, the Department will recommend specific bag and possession limit regulations to the Commission at its April 17, 2019 meeting. The Commission will then consider adoption of the regulations at its May 16, 2019 teleconference.

For the purpose of PFMC mixed-stock fishery modeling and salmon stock assessment, adult salmon are generally those considered three to five years in age, and grilse salmon are those approximately two years of age. The age classes are distinguished by a cutoff of salmon total length measurement, depending on the in-river fishery. For purposes of the proposed regulation, this cutoff is presented as a range of 26 to 28 inches total length, as outlined under the options for the proposed regulations (below).

Proposed Regulations

The Department recognizes the uncertainty of Sacramento River fall-run Chinook Salmon (SRFC) inland (in-river) harvest projections. Therefore, the Department is presenting three regulatory options for the Commission's consideration to tailor 2019 Central Valley fishery management to target 2019 in-river fisheries harvest projections.

- Option 1 is the most liberal of the three options and allows take of any size Chinook Salmon up to the daily bag and possession limits.

- Option 2 allows for take of a limited number of adult Chinook Salmon, with grilse Chinook Salmon making up the remainder of the daily bag and possession limits.
- Option 3 is the most conservative option and allows for a grilse-only Chinook Salmon fishery.

All three options increase fishing opportunities on the Feather and Mokelumne rivers by: (1) extending the salmon fishing season by two weeks on the Feather River between the Thermalito Afterbay Outfall and the Live Oak boat ramp; and (2) by extending the salmon and hatchery steelhead fishing season on approximately 10 miles of the Mokelumne River between the Highway 99 Bridge and Elliott Road.

All options would be applicable to the following river segments and time periods:

American River, subsection 7.50(b)(5):
(B) From the USGS gauging station cable crossing near Nimbus Hatchery to the SMUD power line crossing the southwest boundary of Ancil Hoffman Park, July 16 through October 31
(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park to the Jibboom Street bridge, July 16 through December 31
(D) From the Jibboom Street bridge to the mouth, July 16 through December 16

Feather River, subsection 7.50(b)(68):
(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to 200 yards above the Live Oak boat ramp, July 16 through October 31
(E) From 200 yards above the Live Oak boat ramp to the mouth, July 16 through December 16

Mokelumne River, subsection 7.50(b)(124):
(A) From Comanche Dam to Elliott Road, July 16 through October 15
(B) From Elliott Road to the Woodbridge Irrigation District Dam and including Lodi Lake, July 16 through December 31
(D) From the Lower Sacramento Road bridge to the mouth, July 16 through December 16

Sacramento River below Keswick Dam, subsection 7.50(b)(156.5):
(C) From Deschutes Road bridge to the Red Bluff Diversion Dam, August 1 through December 16
(D) From the Red Bluff Diversion Dam to the Highway 113 bridge, July 16 through December 16.
(E) From the Highway 113 bridge to the Carquinez Bridge, July 16 through December 16.

The following options are provided for Commission consideration:

Option 1 – Any Size Chinook Salmon Fishery

This option is the Department's preferred option if the 2019 SRFC stock abundance forecast is sufficiently high to avoid the need to constrain inland SRFC harvest.

Bag limit of [0-4] Chinook Salmon.

Possession limit - [0-12] Chinook Salmon.

Option 2 – Limited Adult and Grilse Salmon Fishery

Bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish may be over [26-28] inches total length.

Option 3 – Grilse Salmon Fishery Only

Bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

OTHER CHANGES:
Under all options, changes are proposed to fix punctuation and to remove the extra word “in” in subsection 7.50(b)(124(A).

Benefits of the Proposed Regulations
The Commission anticipates benefits to the environment in the sustainable management of Central Valley Chinook Salmon resources. Other benefits of the proposed regulations are consistency with federal fishery management goals, health and welfare of California residents, and promotion of businesses that rely on Central Valley Chinook Salmon sport fishing.

Consistency and Compatibility with Existing Regulations
Article IV, Section 20 of the State Constitution specifies that the Legislature may delegate to the Fish and Game Commission such powers relating to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated to the Commission the power to regulate recreational fishing in waters of the state (Fish and Game Code sections 200, 205, 315 and 316.5). The Commission has reviewed its own regulations and finds that the proposed regulations are neither inconsistent nor incompatible with existing state regulations. The Commission has searched the California Code of Regulations and finds no other state agency regulations pertaining to Chinook Salmon recreational fishing seasons, bag and possession limits for Central Valley sport fishing.

Proposed Regulatory Language - Option 1 (Any-size Chinook Salmon fishery)

Section 7.50, Title 14, CCR is amended to read:

§ 7.50. Alphabetical List of Waters with Special Fishing Regulations.

. . . [No changes to subsections (a) through (b)(4)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(5) American River (Sacramento ~~Co.)~~ Co.).		
(A) From Nimbus Dam to the U.S. Geological Survey gauging station cable crossing about 300 yards downstream from the Nimbus Hatchery fish rack site.	Closed to all fishing all year.	
(B) From the U.S. Geological Survey gauging station cable crossing about 300 yards downstream from the Nimbus Hatchery fish rack site to the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park.	Jan. 1 through July 15. Only barbless hooks may be used.	2 hatchery trout or hatchery ~~steelhead**~~steelhead**. 4 hatchery trout ~~or.~~or hatchery steelhead** in possession.
	July 16 through Oct. 31. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1~~[0-4] Chinook Salmon. ~~2~~[0-12] Chinook Salmon in possession.

(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park downstream to the Jibboom Street bridge.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1~~[0-4] Chinook Salmon. ~~2~~[0-12] Chinook Salmon in possession.
(D) From the Jibboom Street bridge to the mouth.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1~~[0-4] Chinook Salmon.

		~~2~~[0-12] Chinook Salmon in possession.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

. . . [No changes to subsections (b)(6) through (b)(67)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(68) Feather River below Fish Barrier Dam (Butte, Sutter and Yuba cos.).		
(A) From Fish Barrier Dam to Table Mountain bicycle bridge in Oroville.	Closed to all fishing all ~~year~~year.	
(B) From Table Mountain bicycle bridge to Highway 70 bridge.	Jan. 1 through July 15. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(C) From Highway 70 bridge to the unimproved boat ramp above the Thermalito Afterbay Outfall.	All year.	2 hatchery trout or hatchery

		steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to 200 yards above the Live Oak boat ramp.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout ~~orhatchery~~or hatchery steelhead** in possession.
	July 16 through Oct. ~~15~~31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1~~[0-4] Chinook Salmon. ~~2~~[0-12] Chinook Salmon in possession.
	~~Oct. 16~~Nov. 1 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

(E) From 200 yards above Live Oak boat ramp to the mouth. For purposes of this regulation, the lower boundary is defined as a straight line drawn from the peninsula point on the west bank to the Verona Marine boat ramp.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1~~[0-4] Chinook Salmon. ~~2~~[0-12] Chinook Salmon in possession.
	Dec. 17 to Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

. . . [No changes to subsections (b)(68.1) through (b)(122)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*

(124) Mokelumne River (San Joaquin Co.).		
(A) From Camanche Dam to ~~Highway 99 bridge~~Elliott Road.	Jan. 1 through Mar. 31.	1 hatchery trout or 1 hatchery steelhead**.
	Fourth Saturday in ~~in~~ May through July 15.	1 hatchery trout or 1 hatchery steelhead**.
	July 16 through Oct. 15.	1 hatchery trout or hatchery steelhead**. ~~2 Chinook salmon.~~ [0-4] Chinook Salmon. [0-12] Chinook Salmon in possession.
(B) From ~~Highway 99 bridge~~Elliott Road to the Woodbridge Irrigation District Dam including Lodi Lake.	Jan. 1 through July 15.	1 hatchery trout or 1 hatchery ~~steelhead**~~steelhead**.
	July 16 through Dec. 31.	1 hatchery trout or hatchery steelhead**. ~~2 Chinook salmon.~~ [0-4] Chinook Salmon. [0-12] Chinook Salmon in possession.
(C) Between the Woodbridge Irrigation District Dam and the Lower Sacramento Road bridge.	Closed to all fishing all ~~year~~year.	
(D) From the Lower Sacramento Road bridge to the mouth. For purposes of this regulation, this river segment is defined as Mokelumne River and its tributary sloughs	Jan. 1 through July 15.	1 hatchery trout or 1 hatchery steelhead**.
	July 16 through Dec. 16.	1 hatchery trout or

downstream of the Lower Sacramento Road bridge and east of Highway 160 and north of Highway 12.		hatchery steelhead**. ~~2 Chinook salmon.~~ [0-4] Chinook Salmon. [0-12] Chinook Salmon in possession.
	Dec. 17 through Dec. 31.	1 hatchery trout or 1 hatchery ~~steelhead**~~steelhead**.

. . . [No changes to subsections (b)(125) through (b)(156)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(156.5) Sacramento River and tributaries below Keswick Dam (Butte, Colusa, Contra Costa, Glenn, Sacramento, Shasta, Solano, Sutter, Tehama and Yolo ~~Cos.~~cos.).	Also see Sierra District General Regulations (See Section 7.00(b)).	
(A) Sacramento River from Keswick Dam to 650 feet below Keswick Dam.	Closed to all fishing all year.	
(B) Sacramento River from 650 feet below Keswick Dam to the Deschutes Road bridge.		
1. Sacramento River from 650 feet below Keswick Dam to the Highway 44 bridge.	Jan. 1 to Mar. 31. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

	Closed to all fishing from Apr. 1 through July 31.	
	Aug. 1 through Dec. 31. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
2. Sacramento River from the Highway 44 bridge to the Deschutes Road bridge.	All year. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(C) Sacramento River from the Deschutes Road bridge to the Red Bluff Diversion Dam.	Jan. 1 through July 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	Aug. 1 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1~~[0-4] Chinook Salmon. ~~2~~[0-12] Chinook Salmon in possession.

	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(D) Sacramento River from the Red Bluff Diversion Dam to the Hwy 113 bridge near Knights Landing. Note: It is unlawful to take fish 0-250 feet downstream from the overflow side of the Moulton, Colusa and Tisdale Weirs.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1~~[0-4] Chinook Salmon. ~~2~~[0-12] Chinook Salmon in possession.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(E) Sacramento River from the Hwy 113 bridge near Knights Landing to the Carquinez Bridge	Jan. 1 through July 15.	2 hatchery trout or hatchery

(includes Suisun Bay, Grizzly Bay and all tributary sloughs west of Highway 160). Note: It is unlawful to take fish 0-250 feet downstream from the overflow side of the Fremont and Sacramento Weirs.		steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1~~[0-4] Chinook Salmon. ~~2~~[0-12] Chinook Salmon in possession.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

. . . [No changes subsections 7.50(b)(157) through (b)(212)]

* Wild Chinook Salmon are those not showing a healed adipose fin clip and not showing a healed left ventral fin clip.
**Hatchery trout or steelhead in anadromous waters are those showing a healed adipose fin clip (adipose fin is absent). Unless otherwise provided, all other trout and steelhead must be immediately released. Wild trout or steelhead are those not showing a healed adipose fin clip (adipose fin is present).

Note: Authority cited: Sections 200, 205, 265, 270, 315, 316.5 and 399, Fish and Game Code. Reference: Sections 200, 205, 265, 270 and 316.5, Fish and Game Code.

Proposed Regulatory Language – Option 2 (Limited Adult, Grilse Chinook Salmon fishery)

Section 7.50, Title 14, CCR is amended to read:

§ 7.50. Alphabetical List of Waters with Special Fishing Regulations.

. . . [No changes to subsections (a) through (b)(4)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(5) American River (Sacramento ~~Co.)~~ Co.).		
(A) From Nimbus Dam to the U.S. Geological Survey gauging station cable crossing about 300 yards downstream from the Nimbus Hatchery fish rack site.	Closed to all fishing all year.	
(B) From the U.S. Geological Survey gauging station cable crossing about 300 yards downstream from the Nimbus Hatchery fish rack site to the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park.	Jan. 1 through July 15. Only barbless hooks may be used.	2 hatchery trout or hatchery ~~steelhead**~~steelhead**. 4 hatchery trout ~~or.~~or hatchery steelhead** in possession.
	July 16 through Oct. 31. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~

		[0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park downstream to the Jibboom Street bridge.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.

(D) From the Jibboom Street bridge to the mouth.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

. . . [No changes to subsections (b)(6) through (b)(67)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(68) Feather River below Fish Barrier Dam (Butte, Sutter and Yuba cos.).		
(A) From Fish Barrier Dam to Table Mountain bicycle bridge in Oroville.	Closed to all fishing all ~~year~~year.	
(B) From Table Mountain bicycle bridge to Highway 70 bridge.	Jan. 1 through July 15. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(C) From Highway 70 bridge to the unimproved boat ramp above the Thermalito Afterbay Outfall.	All year.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to 200 yards above the Live Oak boat ramp.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout ~~or~~hatchery~~or~~ hatchery

		steelhead** in possession.
	July 16 through ~~Oct. 15~~Oct. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
	~~Oct. 16~~Nov. 1 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(E) From 200 yards above Live Oak boat ramp to the mouth. For purposes of this regulation, the lower boundary is defined as a	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**.

straight line drawn from the peninsula point on the west bank to the Verona Marine boat ramp.		4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
	Dec. 17 to Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

. . . [No changes to subsections (b)(68.1) through (b)(122)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(124) Mokelumne River (San Joaquin Co.).		
(A) From Camanche Dam to ~~Highway 99 bridge~~Elliott Road.	Jan. 1 through Mar. 31.	1 hatchery trout or 1 hatchery steelhead**.
	Fourth Saturday in ~~in~~ May through July 15.	1 hatchery trout or 1 hatchery steelhead**.
	July 16 through Oct. 15.	1 hatchery trout or hatchery steelhead**. ~~2 Chinook salmon.~~ [0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
(B) From ~~Highway 99 bridge~~Elliott Road to the Woodbridge Irrigation District Dam including Lodi Lake.	Jan. 1 through July 15.	1 hatchery trout or 1 hatchery ~~steelhead**~~steelhead**.
	July 16 through Dec. 31.	1 hatchery trout or hatchery steelhead**. ~~2 Chinook salmon.~~

		[0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [[0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
(C) Between the Woodbridge Irrigation District Dam and the Lower Sacramento Road bridge.	Closed to all fishing all ~~year~~year.	
(D) From the Lower Sacramento Road bridge to the mouth. For purposes of this regulation, this river segment is defined as Mokelumne River and its tributary sloughs downstream of the Lower Sacramento Road bridge and east of Highway 160 and north of Highway 12.	Jan. 1 through July 15.	1 hatchery trout or 1 hatchery steelhead**.
	July 16 through Dec. 16.	1 hatchery trout or hatchery steelhead**. ~~2 Chinook salmon.~~ [0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
	Dec. 17 through Dec. 31.	1 hatchery trout or 1 hatchery ~~steelhead**~~steelhead**.

. . . [No changes to subsections (b)(125) through (b)(156)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(156.5) Sacramento River and tributaries below Keswick Dam (Butte, Colusa, Contra Costa, Glenn, Sacramento, Shasta, Solano, Sutter, Tehama and Yolo ~~Cos.~~cos.).	Also see Sierra District General Regulations (See Section 7.00(b)).	
(A) Sacramento River from Keswick Dam to 650 feet below Keswick Dam.	Closed to all fishing all year.	
(B) Sacramento River from 650 feet below Keswick Dam to the Deschutes Road bridge.		
1. Sacramento River from 650 feet below Keswick Dam to the Highway 44 bridge.	Jan. 1 to Mar. 31. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	Closed to all fishing from Apr. 1 through July 31.	
	Aug. 1 through Dec. 31. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
2. Sacramento River from the Highway 44 bridge to the Deschutes Road bridge.	All year. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery

		trout or hatchery steelhead** in possession.
(C) Sacramento River from the Deschutes Road bridge to the Red Bluff Diversion Dam.	Jan. 1 through July 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	Aug. 1 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead**

		in possession.
(D) Sacramento River from the Red Bluff Diversion Dam to the Hwy 113 bridge near Knights Landing. Note: It is unlawful to take fish 0-250 feet downstream from the overflow side of the Moulton, Colusa and Tisdale Weirs.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(E) Sacramento River from the Hwy 113 bridge near Knights Landing to	Jan. 1 through July 15.	2 hatchery trout or

the Carquinez Bridge (includes Suisun Bay, Grizzly Bay and all tributary sloughs west of Highway 160). Note: It is unlawful to take fish 0-250 feet downstream from the overflow side of the Fremont and Sacramento Weirs.		hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon – no more than [0-4] salmon over [26-28] inches total length. [0-12] Chinook Salmon in possession of which no more than [0-4] salmon may be over [26-28] inches total length.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

. . . [No changes subsections 7.50(b)(157) through (b)(212)]

* Wild Chinook Salmon are those not showing a healed adipose fin clip and not showing a healed left ventral fin clip.

**Hatchery trout or steelhead in anadromous waters are those showing a healed adipose fin clip (adipose fin is absent). Unless otherwise provided, all other trout and steelhead must be immediately released. Wild trout or steelhead are those not showing a healed adipose fin clip (adipose fin is present).

Note: Authority cited: Sections 200, 205, 265, 270, 315, 316.5 and 399, Fish and Game Code. Reference: Sections 200, 205, 265, 270 and 316.5, Fish and Game Code.

Proposed Regulatory Language – Option 3 (Grilse Chinook Salmon fishery)

Section 7.50, Title 14, CCR is amended to read as follows:

§ 7.50. Alphabetical List of Waters with Special Fishing Regulations.

. . . [No changes to subsections (a) through (b)(4)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(5) American River (Sacramento ~~Co.)~~ Co.).		
(A) From Nimbus Dam to the U.S. Geological Survey gauging station cable crossing about 300 yards downstream from the Nimbus Hatchery fish rack site.	Closed to all fishing all year.	
(B) From the U.S. Geological Survey gauging station cable crossing about 300 yards downstream from the Nimbus Hatchery fish rack site to the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park.	Jan. 1 through July 15. Only barbless hooks may be used.	2 hatchery trout or hatchery ~~steelhead**~~steelhead**. 4 hatchery trout ~~or.~~or hatchery steelhead** in possession.
	July 16 through Oct. 31. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length.

		[0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park downstream to the Jibboom Street bridge.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	July 16 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
(D) From the Jibboom Street bridge to the mouth.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery

		steelhead** in possession.
	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

. . . [No changes to subsections (b)(6) through (b)(67)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*

(68) Feather River below Fish Barrier Dam (Butte, Sutter and Yuba cos.).		
(A) From Fish Barrier Dam to Table Mountain bicycle bridge in Oroville.	Closed to all fishing all ~~year~~year.	
(B) From Table Mountain bicycle bridge to Highway 70 bridge.	Jan. 1 through July 15. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(C) From Highway 70 bridge to the unimproved boat ramp above the Thermalito Afterbay Outfall.	All year.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to 200 yards above the Live Oak boat ramp.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout ~~or~~hatchery~~or~~ hatchery steelhead** in possession.
	July 16 through ~~Oct. 15~~Oct. 31.	2 hatchery trout or hatchery steelhead**.

		4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
	~~Oct. 16~~Nov. 1 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(E) From 200 yards above Live Oak boat ramp to the mouth. For purposes of this regulation, the lower boundary is defined as a straight line drawn from the peninsula point on the west bank to the Verona Marine boat ramp.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
	Dec. 17 to Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

. . . [No changes to subsections (b)(68.1) through (b)(122)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(124) Mokelumne River (San Joaquin Co.).		

(A) From Camanche Dam to ~~Highway 99 bridge~~Elliott Road.	Jan. 1 through Mar. 31.	1 hatchery trout or 1 hatchery steelhead**.
	Fourth Saturday in ~~in~~ May through July 15.	1 hatchery trout or 1 hatchery steelhead**.
	July 16 through Oct. 15.	1 hatchery trout or hatchery steelhead**. ~~2 Chinook salmon.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
(B) From ~~Highway 99 bridge~~Elliott Road to the Woodbridge Irrigation District Dam including Lodi Lake.	Jan. 1 through July 15.	1 hatchery trout or 1 hatchery ~~steelhead**~~steelhead**.
	July 16 through Dec. 31.	1 hatchery trout or hatchery steelhead**. ~~2 Chinook salmon.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
(C) Between the Woodbridge Irrigation District Dam and the Lower Sacramento Road bridge.	Closed to all fishing all ~~year~~year.	

(D) From the Lower Sacramento Road bridge to the mouth. For purposes of this regulation, this river segment is defined as Mokelumne River and its tributary sloughs downstream of the Lower Sacramento Road bridge and east of Highway 160 and north of Highway 12.	Jan. 1 through July 15.	1 hatchery trout or 1 hatchery steelhead**.
	July 16 through Dec. 16.	1 hatchery trout or hatchery steelhead**. ~~2 Chinook salmon.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
	Dec. 17 through Dec. 31.	1 hatchery trout or 1 hatchery ~~steelhead**~~steelhead**.

. . . [No changes to subsections (b)(125) through (b)(156)]

Body of Water	*Open Season and Special Regulations*	*Daily Bag and Possession Limit*
(156.5) Sacramento River and tributaries below Keswick Dam (Butte, Colusa, Contra Costa, Glenn, Sacramento, Shasta, Solano, Sutter, Tehama and Yolo ~~Cos.~~cos.).	Also see Sierra District General Regulations (See Section 7.00(b)).	
(A) Sacramento River from Keswick Dam to 650 feet below Keswick Dam.	Closed to all fishing all year.	
(B) Sacramento River from 650 feet below Keswick Dam to the Deschutes Road bridge.		

1. Sacramento River from 650 feet below Keswick Dam to the Highway 44 bridge.	Jan. 1 to Mar. 31. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	Closed to all fishing from Apr. 1 through July 31.	
	Aug. 1 through Dec. 31. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
2. Sacramento River from the Highway 44 bridge to the Deschutes Road bridge.	All year. Only barbless hooks may be used.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(C) Sacramento River from the Deschutes Road bridge to the Red Bluff Diversion Dam.	Jan. 1 through July 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
	Aug. 1 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery

		trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(D) Sacramento River from the Red Bluff Diversion Dam to the Hwy 113 bridge near Knights Landing. Note: It is unlawful to take fish 0-250 feet downstream from the overflow side of the Moulton, Colusa and Tisdale Weirs.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession [26-28] inches total length.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.
(E) Sacramento River from the Hwy 113 bridge near Knights Landing to the Carquinez Bridge (includes Suisun Bay, Grizzly Bay and all tributary sloughs west of Highway 160). Note: It is unlawful to take fish 0-250 feet downstream from the overflow side of the Fremont and Sacramento Weirs.	Jan. 1 through July 15.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

	July 16 through Dec. 16.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession. ~~1 Chinook Salmon. 2 Chinook Salmon in possession.~~ [0-4] Chinook Salmon. Maximum size [26-28] inches total length. [0-12] Chinook Salmon in possession. Maximum size [26-28] inches total length.
	Dec. 17 through Dec. 31.	2 hatchery trout or hatchery steelhead**. 4 hatchery trout or hatchery steelhead** in possession.

. . . [No changes subsections 7.50(b)(157) through (b)(212)]

* Wild Chinook Salmon are those not showing a healed adipose fin clip and not showing a healed left ventral fin clip.
**Hatchery trout or steelhead in anadromous waters are those showing a healed adipose fin clip (adipose fin is absent). Unless otherwise provided, all other trout and steelhead must be immediately released. Wild trout or steelhead are those not showing a healed adipose fin clip (adipose fin is present).

Note: Authority cited: Sections 200, 205, 265, 270, 315, 316.5 and 399, Fish and Game Code. Reference: Sections 200, 205, 265, 270 and 316.5, Fish and Game Code.

State of California
Department of Fish and Wildlife

Original on file.
Received March 20, 2019, 3:00PM

Date: March 20, 2019

To: Melissa Miller-Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Initial Study/Negative Declaration for Proposed Amendments to Central Valley Salmon Sport Fishing Regulations, Section 7.50, Title 14, California Code of Regulations (CCR)**

In compliance with the California Environmental Quality Act (CEQA), the Department of Fish and Wildlife (Department) has prepared the enclosed *Initial Study/Negative Declaration for Proposed Amendments to Central Valley Salmon Sport Fishing Regulations, Title 14, California Code of Regulations* for 2019.

If you have any questions regarding the enclosed documents, please contact Karen Mitchell, Senior Environmental Scientist, at (916) 445-0826 or at Karen.Mitchell@wildlife.ca.gov.

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STATE OF CALIFORNIA

NATURAL RESOURCES AGENCY

FISH AND GAME COMMISSION

NEGATIVE DECLARATION

FOR

PROPOSED AMENDMENTS TO CENTRAL VALLEY SALMON SPORT FISHING REGULATIONS TITLE 14, CALIFORNIA CODE OF REGULATIONS

Prepared by:

California Department of Fish and Wildlife
Fisheries Branch

This Report Has Been Prepared Pursuant to the
California Environmental Quality Act of 1970
State of California
Natural Resources Agency
Fish and Game Commission

State Clearinghouse #

INITIAL STUDY AND NEGATIVE DECLARATION
FOR
PROPOSED AMENDMENTS
TO
CENTRAL VALLEY SALMON SPORT FISHING REGULATIONS
TITLE 14, CALIFORNIA CODE OF REGULATIONS

The Project

The Fish and Game Commission (Commission) proposes to amend the Central Valley salmon sport fishing regulations as set forth in Title 14 of the California Code of Regulations. The current 2018 sport fishing regulations, Section 7.50, Title 14, California Code of Regulations, allow for salmon fishing in the American, Feather, Mokelumne, and Sacramento rivers. Each year the Department of Fish and Wildlife (Department) evaluates the potential need to amend the existing Chinook Salmon bag and possession limits and seasons to align with management goals. Any proposed changes to the salmon fishing regulations are presented to the Commission for consideration.

The Findings

The initial study and the Commission's review of the project showed that the project will not have any significant or potentially significant effects on the environment and therefore no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment. The project will not have a significant effect on aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire.

Basis of the Findings

Based on the initial study, implementing the proposed project will not have any significant or potentially significant effects on the environment. Therefore, a negative declaration is filed pursuant to the California Environmental Quality Act, Public Resource Code Section 21080, subdivision (c).

This proposed negative declaration consists of the following:

- Introduction – Project Description and Background Information on the Proposed Amendments to Central Valley Salmon Sport Fishing Regulations
- Initial Study Environmental Checklist Form
- Explanation of the Response to the Initial Study Environmental Checklist Form

PROJECT DESCRIPTION AND BACKGROUND INFORMATION
FOR
PROPOSED AMENDMENTS
TO
CENTRAL VALLEY SALMON SPORT FISHING REGULATIONS
TITLE 14, CALIFORNIA CODE OF REGULATIONS

Introduction

Annually, the Department recommends Central Valley salmon sport fishing regulations to the Commission. The Commission then makes the final determination on what amendments to the regulations should be implemented, and is the lead agency for the purposes of CEQA. Under Fish and Game Code Section 200, the Commission has the authority to regulate the taking or possession of fish for the purpose of sport fishing.

Project goals and objectives

The goal of this project is to amend the Central Valley salmon sport fishing regulations in furtherance of the state's policy on conservation, maintenance, and utilization of California's aquatic resources stated in Fish and Game Code Section 1700. This section includes the following objectives:

1. Maintain sufficient populations of all aquatic species to ensure their continued existence.
2. Maintain sufficient resources to support a reasonable sport use.
3. Management of fisheries using best available science and public input.

Background

The Pacific Fishery Management Council (PFMC) is responsible for adopting recommendations for the management of recreational and commercial ocean salmon fisheries in the Exclusive Economic Zone, which is located three to 200 miles off the coasts of Washington, Oregon, and California. When approved by the Secretary of Commerce, these recommendations are implemented as ocean salmon fishing regulations by the National Marine Fisheries Service (NMFS).

The PFMC will develop the annual Pacific coast ocean salmon fisheries regulatory options for public review at its March 2019 meeting and develop the final PFMC regulatory recommendations for adoption by NMFS at its April 2019 meeting. Based on the regulations adopted by NMFS, the Department will recommend specific bag and possession limits to the Commission during a scheduled teleconference hearing on May 16, 2019.

The proposed salmon sport fishing regulations for the American, Feather, Mokelumne, and Sacramento rivers may:

(1) allow for additional harvest of salmon to reduce impacts to spawning habitat if

low instream flow conditions occur; and

(2) increase or decrease the current salmon bag and possession limits based on the PFMC salmon abundance estimates and recommendations for ocean harvest for the coming season.

Project Location

Central Valley salmon sport fishing addressed by this environmental document occurs in the waters of the American, Feather, Mokelumne, and Sacramento rivers in northern and Central California in the counties of Siskiyou, Shasta, Tehama, Colusa, Butte, Yuba, Sutter, Placer, El Dorado, Sacramento, Yolo, Solano, Contra Costa, and San Joaquin.

Schedule

If adopted by the Commission and approved by the Office of Administrative Law, the proposed regulatory amendments described below will go into effect around July 1, 2019.

Project Description

Current Regulations

In 2018, salmon sport fishing in the Central Valley was constrained for the first time since 2010 due to a low Sacramento River fall-run Chinook Salmon (SRFC) stock abundance forecast. At its March 2018 meeting, the PFMC determined it would be necessary to specify an ocean/inland sharing arrangement for the limited SRFC available for harvest (take) in 2018 for ocean sport and commercial fisheries, and in-river recreational fisheries in the Central Valley. As a result, the Department agreed to a one-time limit of the in-river harvest to 15 percent of the total available SRFC harvest.

In December 2017, the Commission provided notice of a range of alternatives for the 2018 Central Valley fishery, including a suite of bag and possession limit alternatives that were area-specific. However, because the Department did not anticipate the impending SRFC stock collapse, this range of alternatives did not include a number of other measures that might have been used to constrain inland SRFC catches to stay within the federal harvest projections. Consequently, the only management measure the Department could recommend to the Commission to target the federal in-river harvest projection was a reduction in the daily bag limit from two fish to one fish in all areas that would be open to retention during 2018.

Proposed Regulations

The Department recognizes the uncertainty of SRFC in-river harvest projections. Therefore, for the 2019 Central Valley fishery, the Department is presenting three regulatory options for the Commission's consideration to tailor 2019 Central Valley

fishery management to target 2019 in-river fisheries harvest projections.

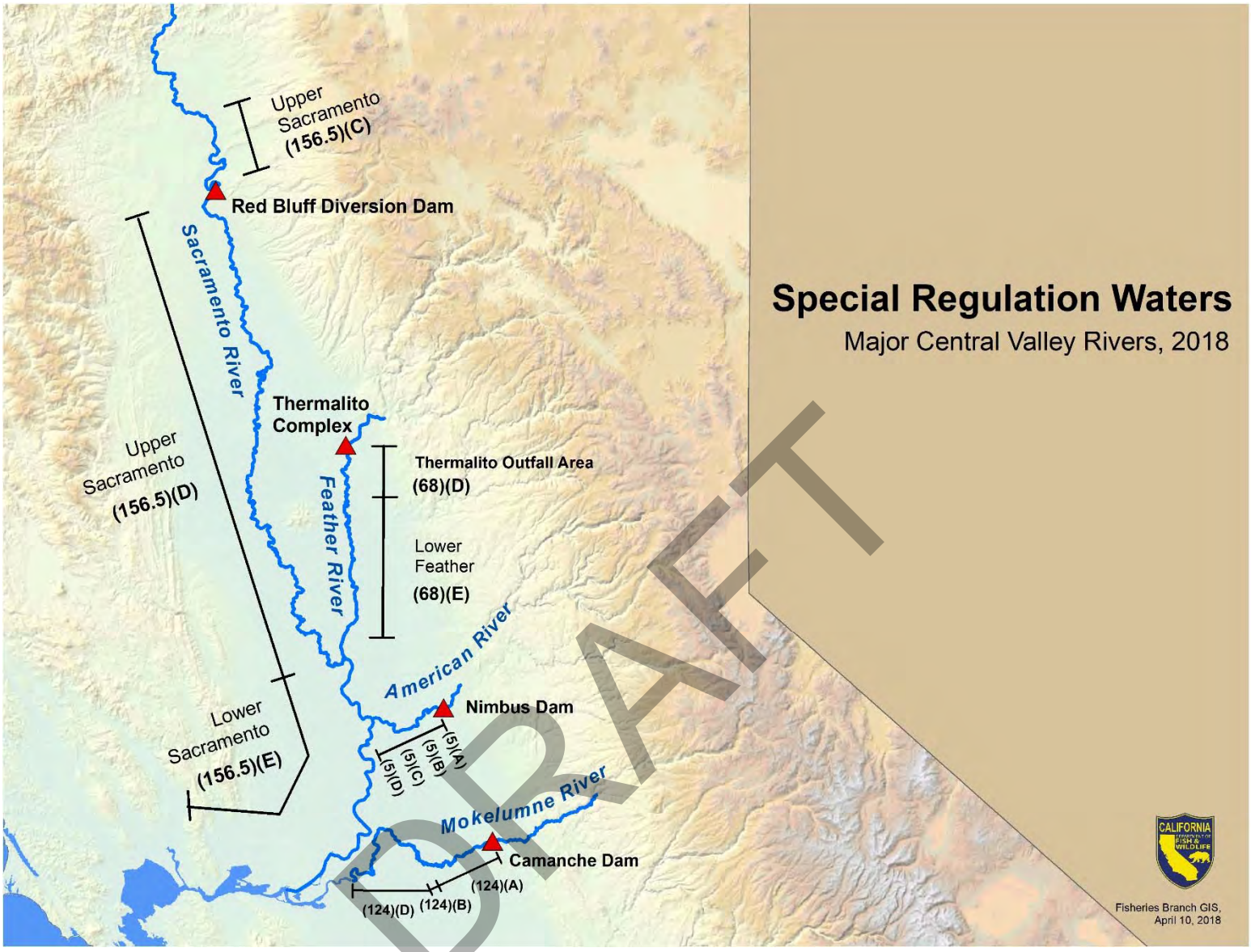
- Option 1 is the most liberal of the three options and allows take of any size Chinook Salmon up to the daily bag and possession limits.
- Option 2 allows for take of a limited number of adult Chinook Salmon, with grilse Chinook Salmon making up the remainder of the daily bag and possession limits.
- Option 3 is the most conservative option and allows for a grilse-only Chinook Salmon fishery.

All three options increase fishing opportunities on the Feather and Mokelumne rivers. First, the project would extend the salmon fishing season by two weeks (to October 31) on the Feather River between the Thermalito Afterbay Outfall and the Live Oak boat ramp to allow for additional fishing opportunity. This section of the Feather River used to provide spawning habitat for SRFC, but adult spawning has not been observed in this section of the Feather River for approximately 10 years. Allowing the take of salmon in this section of the Feather River during this time period will provide additional sport fishing opportunity without adversely impacting SRFC populations.

In addition, the project would provide additional fishing opportunity by extending the salmon season by two and one-half months (to December 31) and allowing year-round fishing on hatchery steelhead on approximately 10 miles of the Mokelumne River between the Highway 99 Bridge and Elliott Road. This extension would allow anglers to continue to fish lower in the river where no spawning is occurring. In addition, the Mokelumne River supports a large run of hatchery origin steelhead. Allowing the take of salmon and hatchery steelhead in this section of the Mokelumne River during this time period will provide additional sport fishing opportunity without adversely impacting populations of SRFC or wild steelhead.

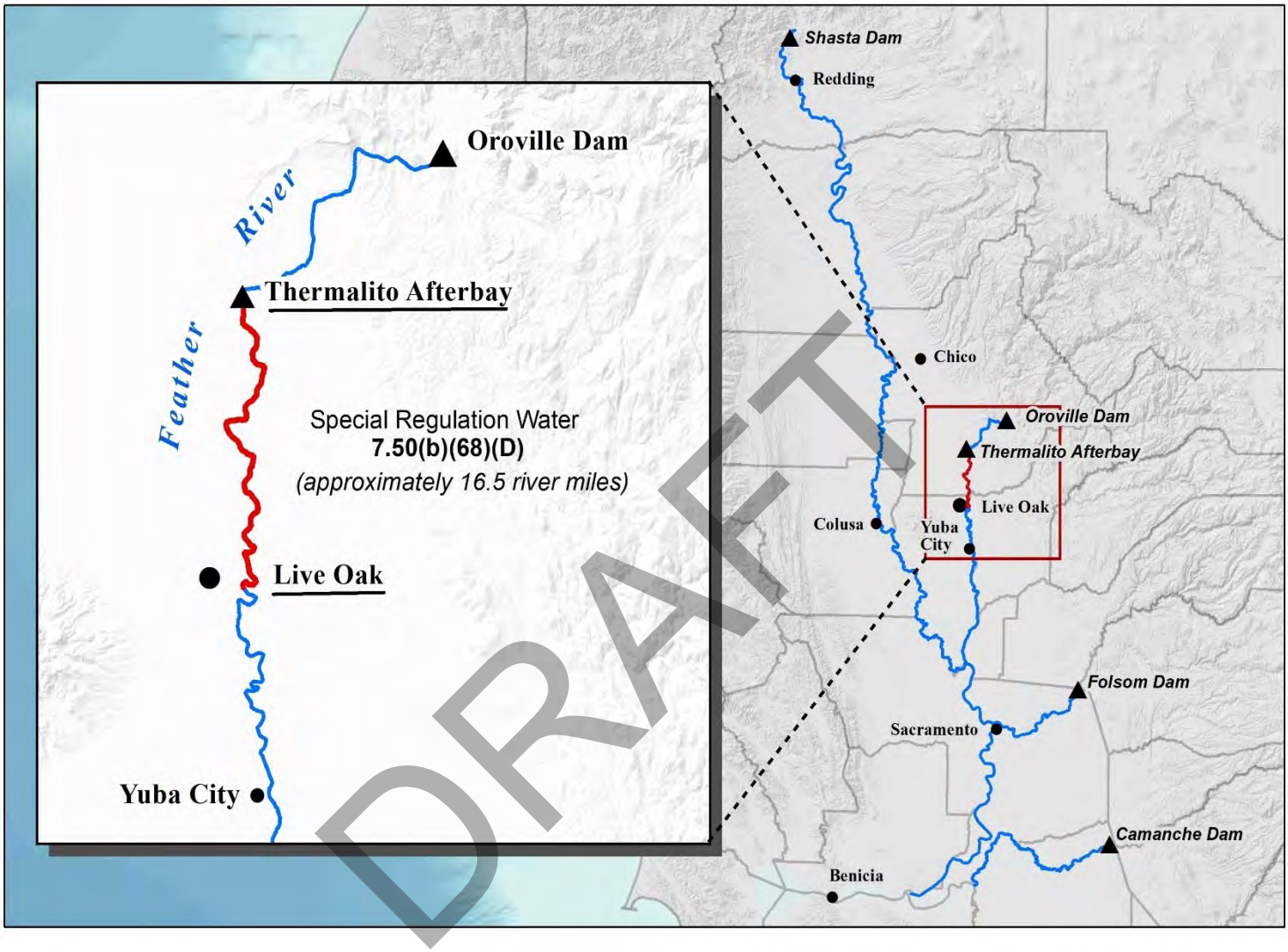
Key to Proposed Regulatory Changes:

Because the PFMC recommendations are not known at this time, a range shown in [brackets] in the text below of bag and possession limits is indicated where it is desirable to continue Chinook Salmon fishing in the American, Feather, Mokelumne, and Sacramento rivers.
Bold text indicates changes to the in-river season or boundary.


Special Regulation Waters
Major Central Valley Rivers, 2018
Upper Sacramento (156.5)(C)
Red Bluff Diversion Dam
Sacramento River
Upper Sacramento (156.5)(D)
Thermalito Complex
Thermalito Outfall Area (68)(D)
Feather River
Lower Feather (68)(E)
American River
Nimbus Dam
(5)(A)
(5)(B)
(5)(C)
(5)(D)
Lower Sacramento (156.5)(E)
Mokelumne River
Camanche Dam
(124)(A)
(124)(B)
(124)(D)
DRAFT
CALIFORNIA DEPARTMENT OF FISH & WILDLIFE
Fisheries Branch GIS, April 10, 2018

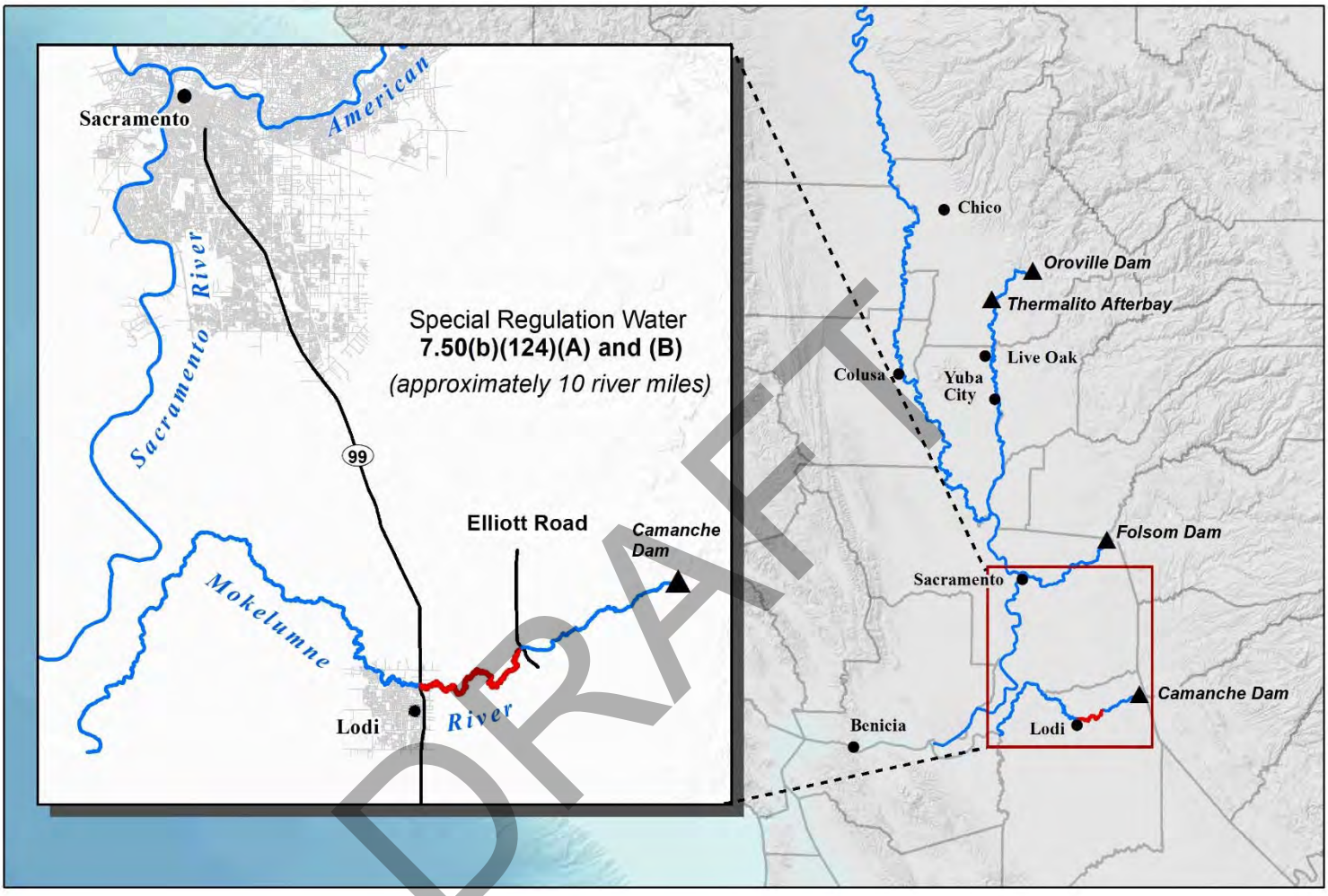
Feather River Proposal: Extend Salmon Fishing Season from Oct 15 to Oct 31

From Thermalito Afterbay South to the Live Oak Boat Ramp



Mokelumne River Proposal: Extend Salmon and Hatchery Steelhead Fishing Seasons on Approximately 10 Miles of River

Between the Highway 99 Bridge and Elliott Road



Option 1 – Any Size Chinook Salmon Fishery

This option would allow anglers to take up to [0-4] Chinook Salmon of any size per day. This option is the Department's preferred option if the 2019 SRFC stock abundance forecast is sufficiently high to avoid the need to constrain in-river SRFC harvest.

<u>American River, subsection 7.50(b)(5):</u>

(B) From the USGS gauging station cable crossing near Nimbus Hatchery to the SMUD power line crossing the southwest boundary of Ancil Hoffman Park.

July 16 through October 31 with a bag limit of [0-4] Chinook Salmon.

Possession limit - [0-12] Chinook Salmon.

(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park to the Jibboom Street bridge.

July 16 through December 31 with a bag limit of [0-4] Chinook Salmon.

Possession limit - [0-12] Chinook Salmon.

(D) From the Jibboom Street bridge to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit - [0-12] Chinook Salmon.

Feather River, subsection 7.50(b)(68):

(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to 200 yards above the Live Oak boat ramp.

July 16 through **October 31** with a daily bag limit of [0-4] Chinook Salmon.

Possession limit - [0-12] Chinook Salmon.

(E) From 200 yards above the Live Oak boat ramp to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

Mokelumne River, subsection 7.50(b)(124):

(A) From Camanche Dam to **Elliott Road**.

July 16 through October 15 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

(B) From **Elliott Road** to the Woodbridge Irrigation District Dam and including Lodi Lake.

From July 16 through December 31 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

(D) From the Lower Sacramento Road bridge to the mouth.

From July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

Sacramento River below Keswick Dam, subsection 7.50(b)(156.5):

(C) From Deschutes Road bridge to the Red Bluff Diversion Dam.

August 1 through December 16 with a bag limit of [0-4] Chinook Salmon

Possession limit – [0-12] Chinook Salmon.

(D) From the Red Bluff Diversion Dam to the Highway 113 bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

(E) From the Highway 113 bridge to the Carquinez Bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon.

Possession limit – [0-12] Chinook Salmon.

Option 2 – Limited Adult and Grilse Salmon Fishery

This option would allow the take of a limited number of adult Chinook Salmon, with grilse Chinook Salmon making up the remainder of the daily bag and possession limits. Should a reduction in the adult component of the stock be imposed by PFMC harvest projections, the Department is recommending specifying angling opportunities on the smaller, and possibly more numerous grilse salmon to increase angling harvest opportunities. Take of adult salmon would be limited under regulation, and the subsequent juvenile production would help rebuild the depressed stock size at a time when there is the need to restrict harvest of adult salmon.

American River, subsection 7.50(b)(5):

(B) From the USGS gauging station cable crossing near Nimbus Hatchery to the SMUD power line crossing the southwest boundary of Ancil Hoffman Park.

July 16 through October 31 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish may be over [26-28] inches total length.

(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park to the Jibboom Street bridge.

July 16 through December 31 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish may be over [26-28] inches total length.

(D) From the Jibboom Street bridge to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish may be over [26-28] inches total length.

<u>Feather River, subsection 7.50(b)(68):</u>

(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to 200 yards above the Live Oak boat ramp.

July 16 through **October 31** with a daily bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit - [0-12] Chinook Salmon of which no more than [0–4] fish may be over [26-28] inches total length.

(E) From 200 yards above the Live Oak boat ramp to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

<u>Mokelumne River, subsection 7.50(b)(124)</u>

(A) From Camanche Dam **to Elliott Road**.

July 16 through October 15 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

(B) From **Elliott Road** to the Woodbridge Irrigation District Dam and including Lodi

Lake.

From July 16 through December 31 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

(D) From the Lower Sacramento Road bridge to the mouth.

From July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

Sacramento River below Keswick Dam, subsection 7.50(b)(156.5):

(C) From Deschutes Road bridge to the Red Bluff Diversion Dam.

August 1 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

(D) From the Red Bluff Diversion Dam to the Highway 113 bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

(E) From the Highway 113 bridge to the Carquinez Bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon of which no more than [0-4] fish over [26-28] inches total length may be retained.

Possession limit – [0-12] Chinook Salmon of which no more than [0-4] fish may be over [26-28] inches total length.

Option 3 – Grilse-only Salmon Fishery

This option would allow for a grilse-only salmon fishery. Should a reduction in the adult component of the stock be imposed by PFMC harvest projections, the Department is recommending specifying angling opportunities on the smaller, and possibly more

numerous grilse salmon to increase angling harvest opportunities. Take of adult salmon would be prohibited under regulation, and the subsequent juvenile production would help rebuild the depressed stock size at a time when there is the need to restrict harvest of adult salmon.

American River, subsection 7.50(b)(5):

(B) From the USGS gauging station cable crossing near Nimbus Hatchery to the SMUD power line crossing the southwest boundary of Ancil Hoffman Park.

July 16 through October 31 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(C) From the SMUD power line crossing at the southwest boundary of Ancil Hoffman Park to the Jibboom Street bridge.

July 16 through December 31 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(D) From the Jibboom Street bridge to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

Feather River, subsection 7.50(b)(68):

(D) From the unimproved boat ramp above the Thermalito Afterbay Outfall to the Live Oak boat ramp.

July 16 through **October 31** with a daily bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(E) From 200 yards above the Live Oak boat ramp to the mouth.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

Mokelumne River, subsection 7.50(b)(124):

(A) From Camanche Dam to **Elliott Road**

July 16 through October 15 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(B) From **Elliott Road** to the Woodbridge Irrigation District Dam and including lake Lodi.

From July 16 through December 31 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(D) From the Lower Sacramento Road bridge to the mouth.

From July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

Sacramento River below Keswick Dam, subsection 7.50(b)(156.5):

(C) From Deschutes Road bridge to the Red Bluff Diversion Dam.

August 1 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(D) From the Red Bluff Diversion Dam to the Highway 113 bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

(E) From the Highway 113 bridge to the Carquinez Bridge.

July 16 through December 16 with a bag limit of [0-4] Chinook Salmon less than or equal to [26-28] inches total length.

Possession limit - [0-12] Chinook Salmon less than or equal to [26-28] inches total length.

ENVIRONMENTAL CHECKLIST FORM

1. Project Title:
   Proposed Amendments to Central Valley Salmon Sport Fishing Regulations, Title 14, California Code of Regulations

2. Lead Agency Name and Address:
   California Fish and Game Commission
   1416 Ninth Street, Suite 1320
   Sacramento, CA 95814

3. Contact Person and Phone Number:
   Melissa Miller-Henson, (916) 653-4899

4. Project Location:
   The American, Feather, Sacramento, and Mokelumne rivers.

5. Project Sponsor's Name and Address:
   California Department of Fish and Wildlife
   Fisheries Branch
   830 S Street
   Sacramento, CA 95811

6. General Plan designation:
   N/A (statewide)

7. Zoning:
   N/A (statewide)

8. Description of Project:
   Potentially amend the daily bag and possession limits and fishing seasons for the Central Valley salmon sport fishery to maintain consistency with the Department's mission to manage California's diverse fisheries resources for their ecological value, their use and for the public's enjoyment.

9. Surrounding land uses and setting:
   N/A

10. Other Public Agencies Whose Approval Is Required:
    None.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.31?
    No.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Energy
☐	Geology/Soils	☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
☐	Hydrology/Water Quality	☐	Land Use/Planning	☐	Mineral Resources
☐	Noise	☐	Population/Housing	☐	Public Services
☐	Recreation	☐	Transportation	☐	Tribal Cultural Resources
☐	Utilities/Service Systems	☐	Wildfire	☐	Mandatory Findings of Significance

This project will not have a “Potential Significant Impact” on any of the environmental factors listed above; therefore, no boxes are checked.

DETERMINATION:

On the basis of this initial evaluation:

☒	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☐	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Original signature on file, 3/21/19

Melissa Miller-Henson, Acting Executive Director **Date**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d) Result in any other emissions such as those leading to odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES. Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. ENERGY. Would the project:	☐	☐	☐	☒
a) Result in potentially significant environmental impact due to wasteful inefficient, or unnecessary consumption of energy resources, during project construction or operations?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒
VII. GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
VIII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒
X. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☐	☒
i) result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage system or provide substantial additional sources of pollution runoff; or	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒
XI. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
XII. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XIII. NOISE. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
general plan or noise ordinance, or applicable standards of other agencies?				
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIV. POPULATION AND HOUSING.				
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XV. PUBLIC SERVICES.				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Other public facilities?	☐	☐	☐	☒
XVI. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVII. TRANSPORTATION. Would the project:				
a) Conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒
XVIII. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geologically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources,	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonable foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XX WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	☐	☐	☐	☒
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel, breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒
XXI. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

EXPLANATION OF RESPONSES TO INITIAL STUDY ENVIRONMENTAL CHECKLIST

I. AESTHETICS

a) The project will not have an adverse effect on a scenic vista. Such an impact will not occur because the project will not involve any construction, land alternation, or modification of any buildings or structures.

b) The project will not damage scenic resources such as trees, rock outcroppings, and historic buildings. Such an impact will not occur because the project will not involve any construction, land alteration, or modification of any buildings or structures.

c) The project will not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Such an impact will not occur because the project will not involve any construction, land alternation, or modification of any buildings or structures.

d) The project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

II. AGRICULTURE AND FORESTRY RESOURCES

a) The project will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to non-agricultural use. Such an impact will not occur because the project will not involve any construction, land alternation, or land use changes.

b) The project will not conflict with existing zoning for agricultural use or a Williamson Act contract. Such an impact will not occur because the project will not involve any construction, land alternation, or land use changes.

c) The project will not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timber zoned Timberland Production. Such an impact will not occur because the project will not involve any construction, land alternation, or land use changes.

d) There will be no loss of forest land and the project will not result in the conversion of forest land to non-forest use. Such an impact will not occur because the project will not involve any construction, land alternation, or land use changes.

e) The project will not involve other changes in the existing environment, which due to their location or nature, could result in conversion of Farmland to non-agricultural use. Such an impact will not occur because the project will not involve any construction, land alternation, or land use changes.

III. AIR QUALITY

a) The project will not conflict with or obstruct implementation of the applicable air quality plan. Such an impact will not occur because the project will not involve any construction, land alternation, or land use changes.

b) The project will not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard. Such an impact will not occur because the project involves no ongoing sources of air pollution.

c) The project will not expose sensitive receptors to substantial pollutant concentrations. Such an impact will not occur because the project will not increase pollutant concentrations.

d) The project will not create objectionable odors affecting a substantial number of people.

IV. BIOLOGICAL RESOURCES

a) The project will not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (Department), National Marine Fisheries Service (NMFS) or U. S. Fish and Wildlife Service (USFWS).

The project may result in an increase in the daily bag and possession limits for Sacramento River fall-run Chinook Salmon (SRFC) in the American, Feather, Mokelumne and Sacramento rivers. Federally and state listed fish species including Central Valley steelhead, Central Valley spring-run Chinook Salmon, and Sacramento River winter-run Chinook Salmon occur in these waters; however, existing sport fishing regulations for SRFC, including seasonal and area closures, are in place to avoid contact with these species. In addition, all three species are protected from take under the federal and/or state Endangered Species Acts.

The project will increase fishing opportunity on the Feather River by extending the salmon fishing season by two weeks between the Thermalito Afterbay Outfall and the Live Oak boat ramp. Although Central Valley spring-run Chinook Salmon and Central Valley steelhead are native to the Feather River and return to the river annually to spawn, existing sport fishing regulations for SRFC, including seasonal and area closures which will not be changed by this project, are in place to avoid contact with these species. Almost all spring-run and steelhead spawning occurs outside the project area upstream of the Thermalito Afterbay Outlet. Steelhead spawning does not begin until December after the Thermalito Afterbay Outfall to Live Oak boat ramp section closes to fishing. Spring-run Chinook Salmon spawning occurs in September and October, but most of the spawning adults have moved

upstream above the Thermalito Afterbay Outfall before the SRFC fishing season begins in mid-July. As a result, contact with either species during the extended fishing season would be minimal. Furthermore, both species are protected from take under the federal and/or state Endangered Species Acts.

In addition, the project would extend the salmon and hatchery steelhead fishing seasons by two and one-half months and four and one-half months, respectively, between the Highway 99 Bridge and Elliott Road on the Mokelumne River. The expanded fishing opportunity is buffered by the overall large number of hatchery steelhead and salmon returns in the lower Mokelumne River. The project is not expected to have a significant effect on wild steelhead because spawning occurs outside this stretch of river. In addition, take of wild steelhead is prohibited under the federal Endangered Species Act. Spring-run Chinook Salmon were historically in the Mokelumne River but are now extirpated from the watershed. Thus, the project is not anticipated to significantly affect listed fish species in the area.

b) The project will not have an adverse effect on any riparian habitat or other sensitive natural communities identified in local or regional plans, policies and regulations, or by the California Department of Fish and Wildlife (Department) or the USFWS. Such an impact will not occur because the project will not involve any construction, land alternation, or land use changes.

c) The project will not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. Such an impact will not occur because the project will not involve any construction, land alteration, or land use changes.

d) The project will not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Such an impact will not occur because the project will not involve any construction, land alteration, or land use changes.

e) The project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Such an impact will not occur because the project will not result in any construction, land alteration, or land use changes.

f) The project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Such an impact will not occur because the project will not involve any construction, land alteration, or land use changes.

V. CULTURAL RESOURCES

a) The project will not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5. There is no ground disturbing work or work permanently modifying any existing structure or resource and thus no potential to affect historical resources.

b) The project will not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. There is no ground disturbing work and thus no potential to affect archaeological resources.

c) The project will not disturb any human remains, including those interred outside of formal cemeteries. There is no ground disturbing work and thus no potential to affect human remains.

VI. ENERGY

a) The project would not result in a potentially significant environmental impact due to wasteful inefficient, or unnecessary consumption of energy resources, during project construction or operations. Such an impact will not occur because the project will not use energy resources.

b) The project will not affect nor obstruct any state or local plan for renewable energy or energy efficiency.

VII. GEOLOGY AND SOILS

a i) The project will not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault. Such an impact will not occur because the project will not create any structures for human habitation.

a ii) The project will not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Such an impact will not occur because the project will not create any structures for human habitation.

a iii) The project will not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. Such an impact will not occur because the project will not create any structures for human habitation.

a iv) The project will not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. Such an impact will not occur because the project will not create any structures for human habitation.

b) The project will not result in substantial soil erosion or the loss of topsoil. Such an impact will not occur because the project will not involve ground disturbing work.

c) The project will not be located on a geologic unit or soil that is unstable, or that would become unstable and potentially result in on- or off- site landslides, lateral spreading, subsidence, liquefaction, or collapse. Such an impact will not occur because the project will not involve ground disturbing work.

d) The project will not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. Such an impact will not occur because the project will not involve ground disturbing work.

e) The project will not create any sources of waste water requiring a septic system.

VIII. GREENHOUSE GAS EMISSIONS

a. The project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. The project will not involve construction, land alternation, or land use changes.

   The project could result in additional angler trips to the Feather and Mokelumne rivers during the extended fishing seasons on these rivers. Vehicles that use fuel will be used to access these waters and their internal combustion engines will produce some greenhouse gas (GHG) emissions. However, the number of additional angler trips is anticipated to be low due to the short duration of the extended season on the Feather River and low angling pressure on the Mokelumne River. Therefore, the small amount of GHG emissions resulting from the project would be similar to what occurs today under existing conditions and, thus, would not have a significant impact on the environment.

b. The project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG. The project would result in the production of very low GHG emissions.

IX. HAZARDS AND HAZARDOUS MATERIALS

a) The project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The project will not involve the transport, use, or disposal of hazardous materials.

b) The project will not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The project will not involve the transport, use, or disposal of hazardous materials.

c) The project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The project will not involve the transport, use, or emission of any hazardous materials.

d) The project will not be located on any site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

e) The project will not be located within an airport land use plan area.

f) The project will not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. The project will not involve any construction, land alteration, or land use changes.

g) The project will not expose people or structures to a significant risk of loss, injury, or death involving wild land fires. The project will not involve any construction, land alteration, or land use changes.

X. HYDROLOGY AND WATER QUALITY

a) The project will not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. The project will not involve any construction, land alteration, water use, or water discharge.

b) The project will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. The project will not involve any construction, land alteration, or groundwater use.

c i) The project will not substantially alter the existing drainage pattern of the site or area including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would result in substantial erosion or siltation on- or off-site because the project will not involve any construction or land alteration.

c ii) The project will not substantially alter the existing drainage pattern of the site or area including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would result in flooding on- or off-site because the project will not involve any construction or land alteration.

c iii) The project will not create or contribute runoff water that would exceed the capacity of existing or planned storm-water drainage systems, or provide substantial additional sources of polluted runoff because the project will not involve any construction or land alteration.

d) In flood hazard, tsunami, or seiche zones, the project would not risk release of pollutants due to project inundation because the project would not involve any construction or land alteration.

e) The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The project will not involve any construction, land alteration, or groundwater use.

XI. LAND USE AND PLANNING

a) The project will not physically divide an established community. The project will not involve any construction, land alteration, or land use changes.

b) The project will not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The project will not involve any construction, land alteration, or land use changes.

XII. MINERAL RESOURCES

a) The project will not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Such an impact will not occur because the project will not involve any construction, land alteration, or land use changes.

b) The project will not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Such an impact will not occur because the project will not involve any construction, land alteration, or land use changes.

XIII. NOISE

a) The project will not result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The project will not involve construction or physical alteration of land, and its implementation will not generate noise levels in excess of agency standards.

b) The project will not result in generation of excessive ground-borne vibration or ground-borne noise levels. The project will not involve construction or physical alteration of land.

c) The project will not be located within the vicinity of a private airstrip or an airport use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.

XIV. POPULATION AND HOUSING

a) The project will not induce substantial unplanned population growth in an area, either directly or indirectly. Such an impact will not occur because the project will not construct any new homes, businesses, roads, or other human infrastructure.

b) The project will not displace any existing people or housing and will not necessitate the construction of replacement housing elsewhere.

XV. PUBLIC SERVICES

a) The project will not have any significant environmental impacts associated with new or physically altered governmental facilities. The project will not involve any construction, land alteration, or land use changes.

XVI. RECREATION

a) The project will not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

   On the Feather River, the project would extend the salmon fishing season between the Thermalito Afterbay Outfall and the Live Oak boat ramp from October 16 to October 31. The project will result in additional angler trips to the project area during this period. Although the salmon and steelhead fisheries are open downstream after the October 15 closure, the project will most likely result in a shift in angler effort upstream into the project area during the last two weeks in October. A shift in angler effort would not be expected to result in the deterioration of existing recreational facilities because the extended fishing season is short and there are adequate facilities in the area to accommodate additional anglers. Most angling occurs from the shore at the Thermalito Afterbay Outfall and in the Oroville Wildlife Area it is a mix of boat and shore anglers. There are several boat launches in the project area, but most of them are unimproved boat launches in the Oroville Wildlife Area. Most boat anglers would use the upstream unimproved boat launch at Thermalito, but may use, in descending order of likelihood, the unimproved boat launches in the Oroville Wildlife Area, the Gridley boat launch, and lastly the Live Oak boat launch.

On the Mokelumne River, the project would extend the salmon fishing season by two and one-half months and the steelhead fishing season by four and one-half months between the Highway 99 Bridge and Elliott Road. In general, there is little shore/bank angling opportunity from Lake Camanche to Lodi. Most angling in the project area is done from floating water craft and access is mostly private in the lower Mokelumne River. There are public parks with river access above and below the project area that have kayak/canoe or small watercraft access. These and similar locations may see an increase in visitors. However, the number of additional visitors/anglers to the area would be minimal as existing angling pressure in the area is very light.

b) The project does not require construction or expansion of recreational facilities.

XVII. TRANSPORTATION

a) The project will not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. The project involves no land use or transportation system modifications.

b) The project will not conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b), which pertains to vehicle miles traveled. The amount and distance of vehicle miles traveled by recreational anglers should not change substantially under the proposed regulations.

c) The project will not increase hazards due to a geometric design feature or incompatible uses with equipment. There will be no land use or transportation system modifications.

d) The project will not result in inadequate emergency access. The project involves no land use or transportation system modifications.

XVIII. TRIBAL CULTURAL RESOURCES

a) The project will not cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). There is no ground disturbing work and thus no potential to affect tribal cultural resources.

b) The project will not cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. There is no ground disturbing work and thus no potential to affect tribal cultural resources.

XIX. UTILITIES AND SERVICE SYSTEMS

a) The project will not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunication facilities. There will be no construction or land alteration.

b) The project requires no new water supplies.

c) The project will not produce wastewater.

d) The project will not generate solid waste. Thus, the project will be in compliance with State and local standards for solid waste.

e) The project will not create solid waste. Thus, the project will be in compliance with federal, state, and local management and reduction statutes and regulations related to solid waste.

XX. WILDFIRE

a) The project will not impair an adopted emergency response plan or emergency evacuation plan.

b) The project will not exacerbate wildfire risks due to slope, prevailing winds, and other factors.

c) The project will not require the installation or maintenance of any infrastructure.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

a) The project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. The project is consistent with the Department's mission to manage California's diverse fisheries resources for their ecological value, their use and for the public's enjoyment.

b) The project does not have adverse impacts that are individually limited, but cumulatively considerable. Cumulative adverse impacts will not occur because there are no potential adverse impacts due to project implementation.

c) The project does not have environmental effects that will cause substantial adverse effects on humans, either directly or indirectly. The project will not involve any construction, land alteration, or the creation of new infrastructure.

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2019039125

Project Title: Proposed Amendments to Central Valley Salmon Sport Fishing Regulations, Title 14, CCR

Lead Agency: California Fish and Game Commission
Contact Person: Melissa Miller-Henson
Mailing Address: PO Box 944209
Phone: (916) 653-4899
City: Sacramento
Zip: 94244-2090
County: Sacramento

Project Location: County: _____ City/Nearest Community: Redding to Benicia
Cross Streets: _____ Zip Code: _____
Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W Total Acres: _____
Assessor's Parcel No.: _____ Section: _____ Twp.: _____ Range: _____ Base: _____
Within 2 Miles: State Hwy #: _____ Waterways: _____
Airports: _____ Railways: _____ Schools: _____

Document Type:

CEQA: ☐ NOP ☐ Draft EIR
☐ Early Cons ☐ Supplement/Subsequent EIR
☒ Neg Dec (Prior SCH No.) _____
☐ Mit Neg Dec Other: _____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other: _____

Governor's Office of Planning & Research

MAR 22 2019

STATE CLEARINGHOUSE

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☐ Other: _____

Development Type:

☐ Residential: Units _____ Acres _____
☐ Office: Sq.ft. _____ Acres _____ Employees _____
☐ Commercial: Sq.ft. _____ Acres _____ Employees _____
☐ Industrial: Sq.ft. _____ Acres _____ Employees _____
☐ Educational: _____
☐ Recreational: _____
☐ Water Facilities: Type _____ MGD _____
☐ Transportation: Type _____
☐ Mining: Mineral _____
☐ Power: Type _____ MW _____
☐ Waste Treatment: Type _____ MGD _____
☐ Hazardous Waste: Type _____
☒ Other: Central Valley Salmon Sport Fishing Regulations

Project Issues Discussed in Document:

☒ Aesthetic/Visual
☒ Agricultural Land
☒ Air Quality
☒ Archeological/Historical
☒ Biological Resources
☐ Coastal Zone
☒ Drainage/Absorption
☐ Economic/Jobs
☐ Fiscal
☒ Flood Plain/Flooding
☒ Forest Land/Fire Hazard
☒ Geologic/Seismic
☒ Minerals
☒ Noise
☒ Population/Housing Balance
☒ Public Services/Facilities
☒ Recreation/Parks
☐ Schools/Universities
☒ Septic Systems
☐ Sewer Capacity
☒ Soil Erosion/Compaction/Grading
☒ Solid Waste
☒ Toxic/Hazardous
☒ Traffic/Circulation
☐ Vegetation
☒ Water Quality
☒ Water Supply/Groundwater
☒ Wetland/Riparian
☒ Growth Inducement
☒ Land Use
☒ Cumulative Effects
☒ Other: GHG, Fishing

Present Land Use/Zoning/General Plan Designation:

Project Description: *(please use a separate page if necessary)*
California Fish and Game Commission adoption of amendments to salmon sport fishing regulations for the Central Valley.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2010

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

____	Air Resources Board	____	Office of Historic Preservation
____	Boating & Waterways, Department of	____	Office of Public School Construction
____	California Emergency Management Agency	X	Parks & Recreation, Department of
____	California Highway Patrol	____	Pesticide Regulation, Department of
____	Caltrans District # ____	____	Public Utilities Commission
____	Caltrans Division of Aeronautics	____	Regional WQCB # ____
X	Caltrans Planning	X	Resources Agency
X	Central Valley Flood Protection Board	____	Resources Recycling and Recovery, Department of
____	Coachella Valley Mtns. Conservancy	____	S.F. Bay Conservation & Development Comm.
____	Coastal Commission	____	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
____	Colorado River Board	X	San Joaquin River Conservancy
X	Conservation, Department of	____	Santa Monica Mtns. Conservancy
____	Corrections, Department of	X	State Lands Commission
____	Delta Protection Commission	____	SWRCB: Clean Water Grants
____	Education, Department of	X	SWRCB: Water Quality
____	Energy Commission	____	SWRCB: Water Rights
____	Fish & Game Region # ____	____	Tahoe Regional Planning Agency
____	Food & Agriculture, Department of	____	Toxic Substances Control, Department of
____	Forestry and Fire Protection, Department of	X	Water Resources, Department of
____	General Services, Department of		
____	Health Services, Department of	X	Other: Fish and Wildlife, Dept. of (Headquarters)
____	Housing & Community Development	____	Other: ____
X	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date _____ Ending Date _____

Lead Agency (Complete if applicable):

Consulting Firm: _____
Address: _____
City/State/Zip: _____
Contact: _____
Phone: _____

Applicant: _____
Address: _____
City/State/Zip: _____
Phone: _____

Signature of Lead Agency Representative: Melissa A. Miller-Henson **Date:** 3/21/19

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

CDFW News

FISHERIES, FISHING (COMMERCIAL), FISHING (SPORT), MARINE, REGULATIONS, SALMON

‘Slightly Improved’ Forecast for California’s 2019 Ocean Salmon Season

MARCH 1, 2019 | KMACINTY

California’s 2019 ocean salmon fishing season should be slightly better than last year’s, according to information presented at this week’s annual Salmon Information Meeting held in Santa Rosa by the California Department of Fish and Wildlife (CDFW). The ocean abundance projections for Sacramento River fall Chinook (SRFC), a main salmon stock harvested in California waters, is estimated at 379,600 adult salmon, an increase over 2018 forecasts. This may result in increased fishing opportunity in some central coastal areas. The Klamath River fall Chinook (KRFC) abundance forecast of 274,200 adult salmon is lower than 2018 forecast, but still an improvement over low forecast numbers seen in recent years.

“We are cautiously optimistic that the increase in ocean abundance of SRFC will translate into more fishing opportunity this year,” said CDFW Environmental Scientist Kandice Morgenstern.

Recreational anglers and commercial salmon trollers at the meeting provided comments and voiced concerns to a panel of fishery managers, scientists and industry representatives. Stakeholder input will be taken into consideration when developing three season alternatives during the March 6-12 Pacific Fishery Management Council (PFMC) meeting in Vancouver, Wash. Final ocean salmon seasons will be adopted during the April 9-16 PFMC meeting in Rohnert Park.

The PFMC may take a conservative approach when crafting 2019 ocean salmon seasons since both SRFC and KRFC stocks are considered to be overfished under the terms of the federal Salmon Fishery Management Plan due to three years of low spawning escapement. Additionally, persistent concerns over protected Sacramento River winter Chinook and California Coastal Chinook could limit fishing opportunity south of Point Arena and north of Point Sur, respectively.

For more information on the salmon season setting process or general ocean salmon fishing information, please visit the Ocean Salmon Project website (http://www.wildlife.ca.gov/fishing/ocean/%20regulations/salmon) or call the ocean salmon hotline at (707) 576-3429.

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Media Contacts:
Chenchen Shen (mailto:chenchen.shen@wildlife.ca.gov), CDFW Ocean Salmon Team, (707) 576-2885
Harry Morse (mailto:harry.morse@wildlife.ca.gov), CDFW Communications, (916) 322-8958

FISHING **OCEAN** **REGULATIONS** **SALMON** **SALMON FISHERIES**

Jeanne Wallen

Mon 03/25, 12:45 PM

FGC

Dear Fish and Game Commissioners,

I just wanted to give my personal opinion on setting the limit for Chinook salmon fishing in the Central Valley. My husband and I have fished for salmon every year for the past 37 years for the excepon of the mor atorium salmon closure years.

Last year was a very good year for us on the river and all predicons ar e saying that we may have record runs this year. With that being said however, I think with the salmon returns geng beạ . er that the limit should stay the same at 1 fish per day to let the salmon run fully recover with the good rains we have had along with favorable ocean condions. Please give the fish another year or two to recover from the drought years so you can get a more accurate sense of the real numbers of fish returns. As much as it would be nice to have the limit set at 2 fish per day, I don't think that it would be prudent to do that at this me. Le t's give the fish more me. Mother Na ture can be our best ally!

Thank you.

Mrs. Jean Wallen

For background purposes only

Item No. 20A

STAFF SUMMARY FOR FEBRUARY 6, 2019

20A. UPPER KLAMATH-TRINITY RIVER SPRING CHINOOK SALMON

Today's Item **Information** ☐ **Action** ☒

Consider whether listing Upper Klamath-Trinity River spring Chinook salmon (also referred to as Upper Klamath-Trinity Spring Chinook Salmon (UKTSCS)) as threatened or endangered under the California Endangered Species Act (CESA) may be warranted pursuant to Section 2074.2 of the Fish and Game Code.

Summary of Previous/Future Actions

• Received petition	Jul 23, 2018
• FGC transmitted petition to DFW	Aug 2, 2018
• Published notice of receipt of petition	Aug 17, 2018
• Public receipt of petition and approved DFW's request for a 30-day extension	Oct 17, 2018; Fresno
• Received DFW's 90-day evaluation	Dec 12-13, 2018; Oceanside
• **Today determine if petitioned action may be warranted**	**Feb 6, 2019; Sacramento**

Background

A petition to list UKTSCS as an endangered species under CESA was submitted by the Karuk Tribe and the Salmon River Restoration Council on Jul 23, 2018 (Exhibit 1). On Aug 2, 2018, FGC transmitted the petition to DFW for review. A notice of receipt of petition was published in the California Regulatory Notice Register on Aug 17, 2018.

California Fish and Game Code Section 2073.5 requires that DFW evaluate the petition and submit to FGC a written evaluation with a recommendation (Exhibit 3).

Based upon the information contained in the petition and other relevant information, DFW has determined that there is sufficient scientific information available at this time to indicate that the petitioned action may be warranted; DFW recommends that the petition be accepted and considered (Exhibit 2). If the Commission determines listing may be warranted, a one-year status review will commence before a final decision on listing is made.

CESA and FGC's listing regulation require that the petition contain specific scientific information related to the status of the species. CESA and case law interpreting it make clear that FGC must accept a petition when the petition contains sufficient information to lead a reasonable person to conclude there is a substantial possibility the requested listing could occur; the requested listing is tied to the species' status, that is, whether the species' continued existence is in serious danger or is threatened by a number of factors, and in no way relates to economic consequences that might result from listing.

Significant Public Comments

1. The Karuk Tribe provides for the record a peer reviewed publication from the Proceedings of the National Academy of Sciences (Exhibit 4).

2. A fisherman supports listing UKTSCS and references an article in Science Daily that enumerates threats to UKTSCS, including warmer water, logging, mining, dams, wildfires, predators, and harvest, and states that the fish is genetically distinct from fall-run Chinook (Exhibit 5).
3. The Watershed Research and Training Center supports listing and comments about its work in the South Fork Trinity River watershed, stating that UKTSCS once numbered in the tens of thousands in the river, but in recent years the numbers have declined precipitously (Exhibit 6).
4. Conservation Congress supports the petition to list UKTSCS as an endangered species and reviews some of the threats (Exhibit 7).
5. Whale and Dolphin Conservation affirms that UKTSCS is a distinct species, noting that Chinook salmon (particularly spring-run) is a key prey species for wild orca, and that Chinook salmon declines in the Pacific northwest and California rivers has had a significant impact on the survival of orcas. The organization provides further information on UKTSCS declines. See Exhibit 8.
6. The County of Siskiyou Board of Supervisors opposes listing and believes there are other options to address the needs of UKTSCS, many of which are already under development. A cited example is a large group of stakeholders who are engaged in a coalition to address water quality and habitat for coho salmon, which is expected to have benefits for UKTSCS. The board expresses concern for the potential job and economic losses that could be caused by listing. See Exhibit 9.
7. The County of Del Norte Board of Supervisors opposes listing, stating that recreational and commercial fishing is an economic lifeline for coastal communities; it estimates that the spring run fishery, from the end of Apr to end of Jun, generates close to $521,000 for the area. The board expresses concern for the potential economic losses that could be caused by listing (Exhibit 10).
8. Approximately 5,500 emails supporting listing (sample form letter in Exhibit 11).

Recommendation

FGC staff: Determine that listing may be warranted and accept DFW's recommendation.

DFW: Accept and consider the petition for further evaluation.

Exhibits

1. Petition, received Jul 23, 2018
2. DFW memo, received Nov 27, 2018
3. DFW 90-day evaluation, dated Nov 2018
4. Email from S. Craig Tucker, representing the Karuk Tribe, received Dec 4, 2018
5. Email from Michael Dennis, received Jan 22, 2019
6. Email from Joshua Smith, The Watershed Research & Training Center, received Jan 16, 2019
7. Email from Denise Boggs, Conservation Congress, received Jan 22, 2019
8. Email from Colleen Weiler, Whale and Dolphin Conservation, dated Jan 24, 2019
9. Email from Siskiyou County Board of Supervisors, received Jan 22, 2019

10. Email from Del Norte County Board of Supervisors, received Dec 17, 2018
11. Email support form letter from Eva Kronen, received Jan 22, 2019
12. Presentation from Karuk Tribe

Motion/Direction

Moved by _____ and seconded by _____ that the Commission, pursuant to Section 2074.2 of the Fish and Game Code, finds that the petition to list upper Klamath-Trinity River spring Chinook salmon as an endangered species provides sufficient information to indicate that the petitioned action **may be** warranted based on the information in the record before the Commission, and directs staff to issue a notice reflecting this finding and that the upper Klamath-Trinity spring Chinook salmon is a candidate for threatened or endangered species status.

OR

Moved by _____ and seconded by _____ that the Commission, pursuant to Section 2074.2 of the Fish and Game Code, finds that the petition to designate upper Klamath-Trinity River spring Chinook salmon as an endangered species **does not** provide sufficient information to indicate that the petitioned action may be warranted based on the information in the record before the Commission.

Section 2084, California Fish and Game Code

(a) The commission may authorize, subject to terms and conditions it prescribes, and based on the best available scientific information, (1) the taking of any candidate species, or (2) the taking of any fish by hook and line for sport that is listed as an endangered, threatened, or candidate species, provided that in either case the take is consistent with this chapter.
(b) The department may recommend to the commission that the commission authorize, or not authorize, the taking of an endangered, threatened, or candidate species pursuant to this section.

Emergency Regulatory Language Adopted Feb 6, 2019

Subsection (b)(91.1) of Section 7.50, Title 14, CCR is amended to read as follows:

§ 7.50. Alphabetical List of Waters with Special Fishing Regulations.

. . . [No changes to subsections (a) through (b)(91)]

(91.1) Anadromous Waters of the Klamath River Basin Downstream of Iron Gate and Lewiston dams. The regulations in this subsection apply only to waters of the Klamath River Basin which are accessible to anadromous salmonids. They do not apply to waters of the Klamath River Basin which are inaccessible to anadromous salmon and trout, portions of the Klamath River system upstream of Iron Gate Dam, portions of the Trinity River system upstream of Lewiston Dam, and the Shasta River and tributaries upstream of Dwinnel Dam. Fishing in these waters is governed by the General Regulations for non-anadromous waters of the North Coast District (see Section 7.00, subsection (a)(4)).
(A) Hook and Weight Restrictions.
1. Only barbless hooks may be used. (For definitions regarding legal hook types, hook gaps and rigging see Chapter 2, Article 1, Section 2.10.)
2. During closures to the take of adult salmon, it shall be unlawful to remove any adult Chinook Salmon from the water by any means.
(B) General Area Closures.
1. No fishing is allowed within 750 feet of any Department of Fish and Wildlife fish-counting weir.
2. No fishing is allowed from the Ishi Pishi Road bridge upstream to and including Ishi Pishi Falls from August 15 through December 31. EXCEPTION: members of the Karuk Indian Tribe listed on the current Karuk Tribal Roll may fish at Ishi Pishi Falls using hand-held dip nets.
3. No fishing is allowed from September 15 through December 31 in the Klamath River within 500 feet of the mouths of the Salmon, the Shasta and the Scott rivers and Blue Creek.
4. No fishing is allowed from June 15 through September 14 in the Klamath River from 500 feet above the mouth of Blue Creek to 500 feet downstream of the mouth of Blue Creek.
(C) Klamath River Basin Possession Limits.
1. Trout Possession Limits.
a. The Brown Trout possession limit is 10.
b. The hatchery trout or hatchery steelhead possession limits are as follows:
(i) Klamath River - 4 hatchery trout or hatchery steelhead.
(ii) Trinity River - 4 hatchery trout or hatchery steelhead.
2. Chinook Salmon Possession Limits.
a. Klamath River ~~downstream of the Highway 96 bridge at Weitchpec~~ from ~~January 1~~ February 28, 2019 to August 14: Closed to salmon fishing. No take or possession of Chinook Salmon. ~~and the Trinity River downstream of the Old Lewiston Bridge to the confluence of the South Fork Trinity River from January 1 to August 31: 2 Chinook Salmon.~~

b. Klamath River from August 15 to December 31~~and Trinity River from September 1 to December 31~~: 6 Chinook Salmon. No more than 3 Chinook Salmon over 22 inches total length may be retained when the take of salmon over 22 inches total length is allowed.

c. Trinity River downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat from February 28, 2019 to October 15: Closed to salmon fishing. No take or possession of Chinook Salmon.

d. Trinity River downstream of the Old Lewiston Bridge to the Highway 299 West Bridge at Cedar Flat from October 16 to December 31: 6 Chinook Salmon. No more than 3 Chinook Salmon over 22 inches total length may be retained when the take of salmon over 22 inches total length is allowed.

e. Trinity River downstream of the Highway 299 West bridge at Cedar Flat from February 28, 2019 to August 31: Closed to salmon fishing. No take or possession of Chinook Salmon.

f. Trinity River downstream of the Highway 299 West Bridge at Cedar Flat from September 1 to December 31: 6 Chinook Salmon. No more than 3 Chinook Salmon over 22 inches total length may be retained when the take of salmon over 22 inches total length is allowed.

(D) Klamath River Basin Chinook Salmon Quotas.

The Klamath River fall-run Chinook Salmon take is regulated using quotas. Accounting of the tribal and non-tribal harvest is closely monitored from August 15 through December 31 each year. These quota areas are noted in subsection (b)(91.1)(E) with “Fall Run Quota” in the *Open Season and Special Regulations* column.

1. Quota for Entire Basin.

The 2018 Klamath River Basin quota is 3,490 Klamath River fall-run Chinook Salmon over 22 inches total length. The department shall inform the Commission, and the public via the news media, prior to any implementation of restrictions triggered by the quotas. (NOTE: A department status report on progress toward the quotas for the various river sections is updated weekly, and available at 1-800-564-6479.)

2. Subquota Percentages.

a. The subquota for the Klamath River upstream of the Highway 96 bridge at Weitchpec and the Trinity River is 50% of the total Klamath River Basin quota.

(i) The subquota for the Klamath River from 3,500 feet downstream of the Iron Gate Dam to the Highway 96 bridge at Weitchpec is 17% of the total Klamath River Basin quota.

(ii) The subquota for the Trinity River main stem downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat is 16.5% of the total Klamath River Basin quota.

(iii) The subquota for the Trinity River main stem downstream of the Denny Road bridge at Hawkins Bar to the confluence with the Klamath River is 16.5% of the total Klamath River Basin quota.

b. The subquota for the lower Klamath River downstream of the Highway 96 bridge at Weitchpec is 50% of the total Klamath River Basin quota.

(i) The Spit Area (within 100 yards of the channel through the sand spit formed at the Klamath River mouth) will close when 15% of the total Klamath River Basin quota is taken downstream of the Highway 101 bridge.

(E) Klamath River Basin Open Seasons and Bag Limits. All anadromous waters of the Klamath River Basin are closed to all fishing for all year except those areas listed in the following table. Bag limits are for trout and Chinook Salmon in combination unless otherwise specified.		
Body of Water	***Open Season and Special Regulations***	***Daily Bag Limit***
1. Bogus Creek and tributaries.	Fourth Saturday in May through August 31. Only artificial lures with barbless hooks may be used.	2 hatchery trout or hatchery steelhead**
2. Klamath River main stem from 3,500 feet downstream of Iron Gate Dam to the mouth.		
a. Klamath River from 3,500 feet downstream of the Iron Gate Dam to the Highway 96 bridge at Weitchpec.	~~January 1~~February 28, 2019 to August 14.	~~0~~Closed to salmon fishing. No take of Chinook Salmon 2 hatchery trout or hatchery steelhead**
	Fall Run Quota 593 Chinook Salmon August 15 to December 31, 2018.	2 Chinook Salmon – no more than 1 fish over 22 inches total length until subquota is met, then 0 fish over 22 inches total length. 2 hatchery trout or hatchery steelhead**
	Fall Run Quota Exception: Chinook Salmon over 22 inches total length may be retained from 3,500 feet downstream of Iron Gate Dam to the Interstate 5 bridge when the department determines that the adult fall-run Chinook Salmon spawning escapement at Iron Gate Hatchery exceeds 8,000 fish. Daily bag and possession limits specified for fall-run Chinook Salmon apply during this exception.	
b. Klamath River downstream of the Highway 96 bridge at Weitchpec.	~~January 1~~February 28, 2019 to August 14.	~~2~~Closed to salmon fishing. No take of Chinook Salmon 2 hatchery trout or hatchery steelhead**
	Fall Run Quota 1,745 Chinook Salmon August 15 to December 31, 2018.	2 Chinook Salmon – no more than 1 fish over 22 inches total length until subquota is met, then 0 fish over 22 inches total length.

		2 hatchery trout or hatchery steelhead**
	Fall Run Quota Exception: Spit Area (within 100 yards of the channel through the sand spit formed at the Klamath River mouth). This area will be closed to all fishing after 15% of the Total Klamath River Basin Quota has been taken. All legally caught Chinook Salmon must be retained. Once the adult (greater than 22 inches) component of the total daily bag limit has been retained anglers must cease fishing in the spit area.	
3. Salmon River main stem, main stem of North Fork downstream of Sawyer's Bar bridge, and main stem of South Fork downstream of the confluence of the East Fork of the South Fork.	November 1 through February 28.	2 hatchery trout or hatchery steelhead**
4. Scott River main stem downstream of the Fort Jones-Greenview bridge to the confluence with the Klamath River.	Fourth Saturday in May through February 28.	2 hatchery trout or hatchery steelhead**
5. Shasta River main stem downstream of the Interstate 5 bridge north of Yreka to the confluence with the Klamath River.	Fourth Saturday in May through August 31 and November 16 through February 28.	2 hatchery trout or hatchery steelhead**
6. Trinity River and tributaries.		
a. Trinity River main stem from 250 feet downstream of Lewiston Dam to the Old Lewiston Bridge.	April 1 through September 15. Only artificial flies with barbless hooks may be used.	2 hatchery trout or hatchery steelhead**

b. Trinity River main stem downstream of the Old Lewiston Bridge to the Highway 299 West bridge at Cedar Flat.	~~January 1~~February 28, 2019 to ~~August 31~~October 15.	~~2~~Closed to salmon fishing. No take of Chinook Salmon 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	Fall Run Quota 576 Chinook Salmon September 1 through December 31, 2018.	2 Chinook Salmon – no more than 1 fish over 22 inches total length until subquota is met, then 0 fish over 22 inches total length. 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	Fall Run Quota Exception: Chinook Salmon over 22 inches total length may be retained downstream of the Old Lewiston Bridge to the mouth of Indian Creek when the department determines that the adult fall-run Chinook Salmon spawning escapement at Trinity River Hatchery exceeds 4,800 fish. Daily bag and possession limits specified for fall-run Chinook Salmon apply during this exception.	
c. Trinity River main stem downstream of the Highway 299 West bridge at Cedar Flat to the Denny Road bridge at Hawkins Bar.	~~January 1~~February 28, 2019 through August 31.	~~2~~Closed to salmon fishing. No take of Chinook Salmon 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	September 1 through December 31.	Closed to all fishing.
d. New River main stem downstream of the confluence of the East Fork to the confluence with the Trinity River.	September 15 through November 15. Only artificial lures with barbless hooks may be used.	2 hatchery trout or hatchery steelhead**
e. Trinity River main stem downstream of the Denny Road bridge at Hawkins Bar to the mouth of the South Fork Trinity River.	~~January 1~~February 28, 2019 to August 31.	~~2~~Closed to salmon fishing. No take of Chinook Salmon 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	Fall Run Quota 576 Chinook Salmon September 1 through December 31, 2018.	2 Chinook Salmon – no more than 1 fish over 22 inches total length until subquota is met,

	This is the cumulative quota for subsections 6.e. and 6.f. of this table.	then 0 fish over 22 inches total length. 5 Brown Trout 2 hatchery trout or hatchery steelhead**
f. Trinity River main stem downstream of the mouth of the South Fork Trinity River to the confluence with the Klamath River.	~~January 1~~February 28, 2019 to August 31.	~~0~~Closed to salmon fishing. No take of Chinook Salmon 5 Brown Trout 2 hatchery trout or hatchery steelhead**
	Fall Run Quota 576 Chinook Salmon September 1 through December 31, 2018. This is the cumulative quota for subsections 6.e. and 6.f. of this table.	2 Chinook Salmon – no more than 1 fish over 22 inches total length until subquota is met, then 0 fish over 22 inches total length. 5 Brown Trout 2 hatchery trout or hatchery steelhead**
g. Hayfork Creek main stem downstream of the Highway 3 bridge in Hayfork to the confluence with the South Fork Trinity River.	November 1 through March 31. Only artificial lures with barbless hooks may be used.	2 hatchery trout or hatchery steelhead**
h. South Fork Trinity River downstream of the confluence with the East Fork of the South Fork Trinity River to the South Fork Trinity River bridge at Hyampom.	November 1 through March 31. Only artificial lures with barbless hooks may be used.	2 hatchery trout or hatchery steelhead**
i. South Fork Trinity River downstream of the South Fork Trinity River bridge at Hyampom to the confluence with the Trinity River.	November 1 through March 31.	0 Chinook Salmon. 2 hatchery trout or hatchery steelhead**

COUNTY OF DEL NORTE
BOARD OF SUPERVISORS

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March 26, 2019

President Eric Sklar
California Fish and Game Commission
P.O. Box 644209
Sacramento, CA 94244-2090

Re: Recommendations on 2019 Upper Klamath and Trinity River (UKTR) Spring Chinook Salmon Recreational Fishing Regulations

Dear President Sklar,

The Del Norte County Board of Supervisors (the "Board") wishes to sincerely commend the California Fish and Game Commission (the "Commission") for allowing our constituency an opportunity to provide input on amending the 2019 emergency sport fishing regulations for the Upper Klamath and Trinity River (UKTR) Spring Chinook salmon (*Oncorhynchus tshawytscha*) candidate species status review for listing under the California Endangered Species Act (CESA). It is our understanding that this is an unprecedented action on behalf of the Commission, and we feel that allowing for an open dialogue between local constituencies and the Commission is a very prudent way to allow stakeholders to help support decision making. The recommendations contained herein are specifically directed at fishing regulations on the Lower Klamath River, from the mouth to the confluence of the Trinity River.

As you are aware, the Commission by law is unable to consider economic impacts to Del Norte County, however we must remind the Commission that as duly elected representatives we do not have the luxury to push aside compelling information that clearly impacts the health and welfare of our community. Recreational fishing is essential to our local economy, where local hospitality, restaurant, hotel and service sector industries, and licensed fishing guides rely on this fishery annually to make ends meet. With so much of the economy tied to recreational fishing, even a temporary halt on the ability to fish for UKTR Spring Chinook Salmon could have massive implications to the livelihood of Del Norte County, which already has a per capita median income below the state average. Because of this, the Board is obligated to deliver recommendations to the Commission that may provide a lifeline to a community reliant on the Spring Chinook while also increasing the level of protections the Commission is obligated to considered during this candidacy period.

During a well-attended meeting hosted by the County and the Department of Fish and Wildlife (the "Department"), we discussed with fishermen and the fishing constituency, representatives of the Nor-Cal Guides & Sportsmen's Association, members of the Yurok Tribe, local biologists as well as scientists from the Department to discuss potential amendments to the emergency regulations that would protect the UKTR Spring Chook Salmon and the community while status review is taking place. Through round-table discussion, the constituency has agreed on an amendment to the regulations that will benefit the species while also reducing the significance of a full closure of the fishery during the candidacy period. The Board speaking for our stakeholders respectfully recommends that the Commission consider the following:

1. **Reduce the UKTR Spring Chinook salmon harvest by opening the season on July 1st.** This reduces the season by approximately 50% compared to 2018 regulations and takes angler effort off the lower river when, in recent years, it has been highest impact on the run. This recommendation is also in line with the Department's data that suggests most UKTR Spring Chinook are above the lower river by the end of June, signaling that this late opening will provide a significant higher level of protection than 2018 regulations and early access to Fall Run Chinook Salmon.

2. **Reduce the UKTR Spring Chinook salmon harvest by decreasing the bag limit to 1 fish and maintaining the possession limit of 2 fish.** This recommendation reduces the status quo bag limit from 2 fish to 1 fish. The regulation would especially affect recreational fishermen and tourists by greatly decreasing angler effort on the lower river.

The Board wishes to highlight the sacrifice on behalf of not only the fishing constituency, but our whole community by making these recommendations. We strongly believe that these recommendations based on all available scientific data are prudent steps when crafting emergency regulations for the 2019 angling season for UKTR Spring Chinook salmon. It is our hope that the Commission can agree that these recommendations provide a significant level of protection for UKTR Spring Chinook salmon in the candidacy period. Del Norte County respectfully urges the Commission to review and consider these recommendations in the support of the Lower Klamath River fishery.

Sincerely,

Lori L. Cowan, Chair
Del Norte County Board of Supervisors

April 3, 2019

Kevin Shaffer
California Department of Fish and Wildlife
1416 9th
Sacramento, CA 95814

Transmitted by electronic mail to Kevin.shaffer@wildlife.ca.gov

RE: COMMENTS ON SPRING CHINOOK FISHING REGULATIONS

Ayukîi Mr. Shaffer:

The Karuk Tribe, and the Salmon River Restoration Council jointly submit these comments for your consideration regarding the implementation of sport fishing regulations that are protective of Klamath Trinity Spring Chinook (KTSC). It should be duly noted that spring Chinook Salmon, or *ishyâat*, is one of the most important traditional food sources in Karuk culture. The annual return of spring Chinook herald in a new year and signal the beginning of Karuk World Renewal Ceremonies, or *Pikyavish*. It is of tantamount importance that we recover and protect these fish so they can once again provide sustenance to the People.

The Karuk Tribe and the Salmon River Restoration Council filed a petition with the Department of Commerce on November 2, 2017 to list KTSC as threatened or endangered pursuant to the federal Endangered Species Act. On February 22, 2018 the National Marine Fisheries Service (NMFS) published a 90-day finding in the Federal Register that listing may be warranted. A final ruling by NMFS has yet to be issued.

The Karuk Tribe and the Salmon River Restoration Council filed a similar petition with the California Fish and Game Commission on July 23, 2018 to list KTSC as threatened or endangered pursuant to the California Endangered Species Act. On February 6, 2019 the Commission ruled that listing may be warranted thus making it a 'candidate species.' The petition is currently under further review. In the meantime, the Commission is obligated to offer protections to the KTSC as if it were listed, thus the need for revisions to sport fishing regulations.

Our petition to list is driven by a recently published peer-reviewed research paper describing a genetic difference between fall-run Chinook and their spring-run counterparts. These findings by researchers in Professor Michael Miller's laboratory at UC Davis largely resolve a long-standing debate over the evolutionary history of fall-run and spring-run Chinook salmon.[1] The data clearly demonstrate that the spring-run phenotype is driven by a specific genetic locus that is rapidly disappearing from Chinook populations in the Klamath and elsewhere. Furthermore, Miller's data suggest that when fall-run Chinook spawn in the same location as spring-run Chinook, selective pressures serve to further diminish the spring-run Chinook population. Individuals that are heterozygous at the locus (i.e. have one copy of the fall-run version and one copy of the spring-run version) have an intermediate migration timing and also drive the decline in spring-run populations when able to spawn in the same areas as spring Chinook. Thus, fishing regulations should consider the need to separate fall-run fish and heterozygous individuals from spring-run spawning areas.[2]

Carlos Garza, from National Marine Fisheries Service Southwest Science Center, has sampled migrating Chinook over the course of a year from the lower Klamath River to determine run timing of the three genotypes (homozygous fall, heterozygous, homozygous spring). His data show that for 2015, no homozygous spring Chinook are detected entering the estuary after July 15.[3] These data strongly suggest that sport fishing could be allowed on the Klamath after July 15 with negligible impact to spring Chinook. The same data set shows that most fish in the system in the weeks after July 15 are heterozygotes which compete with homozygous spring Chinook spawning. Fishing pressure on this run of fish would help maintain the isolation of the spring-run population and thus better maintain the spring allele in the wild.

For the Trinity River sub-basin, we consider the South Fork Trinity and New River spawners to represent the vast majority of the wild spring Chinook population. Thus, we support fishing restrictions from the confluence of the New River downstream to the Klamath River confluence to protect this population.

To summarize, we propose the following measures to protect wild Klamath Trinity spring Chinook populations:

- Klamath River from mouth to confluence with Trinity River, January 1 to July 15: Closed to salmon fishing. No take or possession of Chinook salmon.
- Klamath River upstream from confluence with Trinity River to Irong Gate Dam, January 1 to August 31: Closed to salmon fishing. No take or possession of Chinook salmon.
- Salmon River from January 1 to December 31: Closed to salmon fishing. No take or possession of Chinook salmon.
- Trinity River from confluence with the Klamath to the New River, January 1 to August 31: Closed to salmon fishing. No take or possession of Chinook salmon.
- Trinity River above New River, no change in old fishing regulations, take based on quota.

Additional Measures to Consider

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[1] Daniel J. Prince et al., "The Evolutionary Basis of Premature Migration in Pacific Salmon Highlights the Utility of Genomics for Informing Conservation," *Science Advances* 3, no. 8 (August 1, 2017): e1603198, https://doi.org/10.1126/sciadv.1603198.

[2] Tasha Q. Thompson et al., "Anthropogenic Habitat Alteration Leads to Rapid Loss of Adaptive Variation and Restoration Potential in Wild Salmon Populations," *Proceedings of the National Academy of Sciences* 116, no. 1 (January 2, 2019): 177, https://doi.org/10.1073/pnas.1811559115.

[3] Personal communication

Data from Prince et al. and Thompson et al. strongly suggest that it is critically important for spring Chinook populations to spawn in isolation from fall run fish. Unfortunately, individuals and agencies have taken it upon themselves to remove natural barriers to fall Chinook migration (e.g. the blasting of Bloomer Falls) or build dams that force spring and fall fish into the same spawning habitat. We support evaluating the installation of weirs below spring Chinook spawning areas at locations such as Bloomer Falls to re-establish the natural barrier between spring and fall Chinook spawning habitat. We appreciate that this concept is outside the scope of sportfishing regulations, but we suggest it here to highlight the fact that management actions such as this may help recover the spring populations to levels that are more fishable.

Similarly, we support marking 100% of hatchery spring Chinook. This may afford opportunities for fishing and possession of fin-clipped fish while releasing wild individuals.

The Karuk Tribe, and the Salmon River Restoration Council appreciate the opportunity to comment. We also appreciate the hard work of Department staff to reach out to stakeholders and consult with Tribes. We look forward to continuing the effort until *ishyâat* is once again a staple in the Karuk diet.

Yôotva,

Leaf Hillman, Director
Department of Natural
Resources

Karuna Greenberg
Salmon River
Restoration Council

FGC@FGC

From: delloma(
Sent: Wednesday, February 20, 2019 11:58 AM
To: FGC
Cc: OAL Reference Attorney
Subject: "Emergency Regulations: Klamath River Basin Spring Chinook Salmon Sport Fishing"

I am writing to you as a private citizen and business owner on the Trinity river for 22 years. The closure as stated would cause unnecessary hardship to area that is still recovering from fires, drought and land slides. The proposal as lay ed out would shut down over 90% of the fishing and only open up after all the salmon have gone by. The section from the Old Lewiston bridge to the Cedar Flat could easily be divided up into three sections were the upper third be October 15th the Middle 3rd October 1st and the lower third open September 1st. The lower third is nothing but a High way for the Salmon. The middle third holding areas and upper are Spawning. All these area yes have crossover areas of all 3, but it's better than closing 70 miles of fishing and wiping out businesses that rely on the fall run to make it through the winter.
I plead with you to reconsider and take the information I laid out.
We are all here for the fish and better plan could be adopted than this one which would devastate are area that is trying to recover for future generations.

Patrick McCalmont
Del Loma RV Park and Campground
Owner operator

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BOARD OF SUPERVISORS

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December 11, 2018

To: President Eric Sklar
California Fish and Game Commission
P.O. Box 944209
Sacramento, California 94244-2090

Re: Opposition to Listing the "UKTR" Spring Run Chinook as Endangered

Dear President Sklar, Vice President Williams, and Members of the Fish and Game Commission

We are writing to you today in opposition to the proposed listing of the Upper Klamath-Trinity Rivers Basin ("UKTR") Spring Chinook salmon (*Oncorhynchus tshawtscha*), as petitioned by the Karuk Tribe and Salmon River Restoration Council.

Recreational and commercial fishing is an economic lifeline for many members of our coastal communities, where the per capita median income is below state average. Del Norte County is no exception, and for decades has been at the forefront of State policy's and decisions to eliminate sport fisheries within our small communities further eroding Del Norte County's ability to provide for its businesses and residents. Guided recreational fishing and the tourism dollars that this fishery supports make meaningful and significant impacts to our local economy.

We estimate that the spring run fishery, from end of April to end of June, generates close to $521,000 in revenue to our communities. A listing of the UKTR Spring Chinook would result in losses at local hospitality, restaurant, hotel and service sector industry, not to mention those in our community who operate as licensed full-time guides on our rivers.

Please recall that the previous listing petition made by the Center for Biological Diversity was determined "not warranted" by the National Marine Fisheries Service in 2012. Although the more recent petition has been determined that it "may be warranted", the findings are narrowly related to two underlying causes; 1) disease and 2) regulatory mechanisms. Both are tangible, discrete findings that can be addressed to the benefit of future spring runs through proper management and policy decisions through working with many State, Tribal and Federal agencies that regulate multiple aspects of Klamath-Trinity River Health. Listing this species as not the best solution to resolving decades of mis-management while further eroding once viable and vibrant communities.

The job and economic losses we witnessed from fall Chinook fisheries closures in many past years should be enough evidence to warrant a solution that does not involve listing a species based on disease or regulatory mechanisms. Please do not place another listing on our County that impacts the one of the last economic drivers we have remaining, "tourism". Please do not disconnect yourselves as policy makers from the real day to day struggles that are centered in small counties like Del Norte County; these are real engines of our local economy. We ask that you consider our concerns, review the scientific evidence and seek out of the box approaches to dealing with a species that is impacted by issues that can be addressed through proper management. Del Norte County stand ready to engage in proper management, enforcement, and other additional measures including hatchery management, seasonal restrictions, and more focused efforts at a Federal and State level to insure an approach other than listing this species is avoided. Listing is not, and should not be, the only solution to these problems.

Del Norte County urges the Commission to seek other alternatives and not approve this petition when it is before the Commission for review and consideration.

Sincerely,

Chris Howard
Chair, Del Norte County Board of Supervisors

COUNTY OF SISKIYOU

Board of Supervisors

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January 22, 2019

Eric Sklar, President
California Fish and Game Commission
P.O. Box 944209 Sacramento, CA 94244-2090

Subject: Considering of Petition to List the Upper Klamath-Trinity River Spring Run Chinook Salmon as Endangered

Dear President Sklar:

The Siskiyou County Board of Supervisors is submitting this letter to express our opposition to the proposed listing of the Upper Klamath-Trinity Rivers Basin ("UKTR") Chinook salmon (*Oncorhynchus tshawtscha*), as petitioned by the Karuk Tribe and Salmon River Restoration Council.

A previous listing petition was determined a "not warranted" finding made in 2012. Although the more recent petition has been determined that it "may be warranted", the findings are narrowly related to two underlying causes; 1) disease and 2) regulatory mechanisms. Both are tangible, discrete findings that can be addressed to the benefit of future spring runs through proper management and decision making.

Siskiyou County believes there are other options and avenues to addressing the needs of UKTR Chinook, many of which are already under development or are being addressed through volunteer, local, state and federal efforts. Currently, a large group of stakeholders, including Siskiyou County, are engaged in a coalition to address water quality and habitat for coho salmon, which will have benefits for UKTR Chinook. Additionally, over the years there have been several programs and projects completed by local groups and water users to address the needs of fisheries, including the currently listed coho salmon. However, listing of coho salmon as endangered has done little to significantly help the species over the years, yet has had detrimental impacts on the drivers of Siskiyou County's economy and culture, including agriculture and our local fishing guides. Siskiyou County is proactive in addressing the needs of all fisheries and those who depend on fish, but we do not believe that an additional endangered species listing in the Klamath Watershed will result in quantifiable solutions.

There are several fishing guide services throughout Siskiyou County who conduct business on the Klamath River and other local rivers. Recreational and commercial fishing is economically important for many members of our communities throughout northern California, where the per capita median income is well below state average; $40,884 in Siskiyou County. A listing of the UKTR Chinook could result in losses at local hospitality, restaurant, and service sector industry, which benefit from people who visit the area as part of their fishing excursions; in addition to the economic impacts to the fishing

guides as a result of restrictions on fishing activities. The potential job and economic losses are another burden placed upon our counties by regulators who are disconnected from the engines of our local economies.

We ask that you consider our concerns, the livelihoods and businesses affected, when considering this petition. We stand ready to engage on proper management, enforcement, and other additional measures including hatchery management, season restrictions, and more. Listing is not, and should not be, the only solution to these problems.

We look forward to the opportunity to work with you on this important issue and hope to hear from you soon. If interested please contact Elizabeth Nielsen, Project Coordinator, at enielsen@co.siskiyou.ca.us or (530) 842-8012.

This letter was approved by the Siskiyou County Board of Supervisors on January 22, 2019, by the following vote:

AYES:	Supervisors Haupt, Kobseff, Valenzuela, Nixon and Criss
NOES:	NONE
ABSENT:	NONE
ABSTAIN:	NONE

Sincerely,

Brandon A. Criss

Brandon A. Criss, Chair
Board of Supervisors

cc: Director Chuck Bonham, California Department of Fish and Wildlife
Undersecretary Tom Gibson, California Department of Natural Resources
Alan Mikkelsen, Department of the Interior
Assemblyman Brian Dahle
Congressman Doug LaMalfa
Congressman Jared Huffman

Options under FGC 2084- recreational fishing in 2019

Upper Klamath and Trinity River Spring Chinook Salmon

Kevin Shaffer
Fisheries Branch

California Fish and Game Commission Meeting

April 17, 2019

Presentation Overview

- Listing History
- Commission Actions
- Summary of meetings with the public
- Constituent Recommendations for consideration

State Listing History

- California Department of Fish and Wildlife
  1. July 2018: petition for listing
  2. October 2018: 30-day extension request granted
  3. November 2018: petition evaluation complete, Department recommends accepting petition for status review
  4. February 6: petition review presentation
  5. February 22: candidacy review started

February 6 Fish and Game Commission Actions

- Accepted petition for full status review
- Approved emergency fishing regulations to protect Spring Chinook Salmon
  - Regulations run from 2/28/2019 - 8/27/2019
- Directed CDFW to meet with constituents to develop potential regulatory options to amend emergency Spring Chinook regulations (Fish and Game Code 2084 authority) and report back at April Commission meeting.

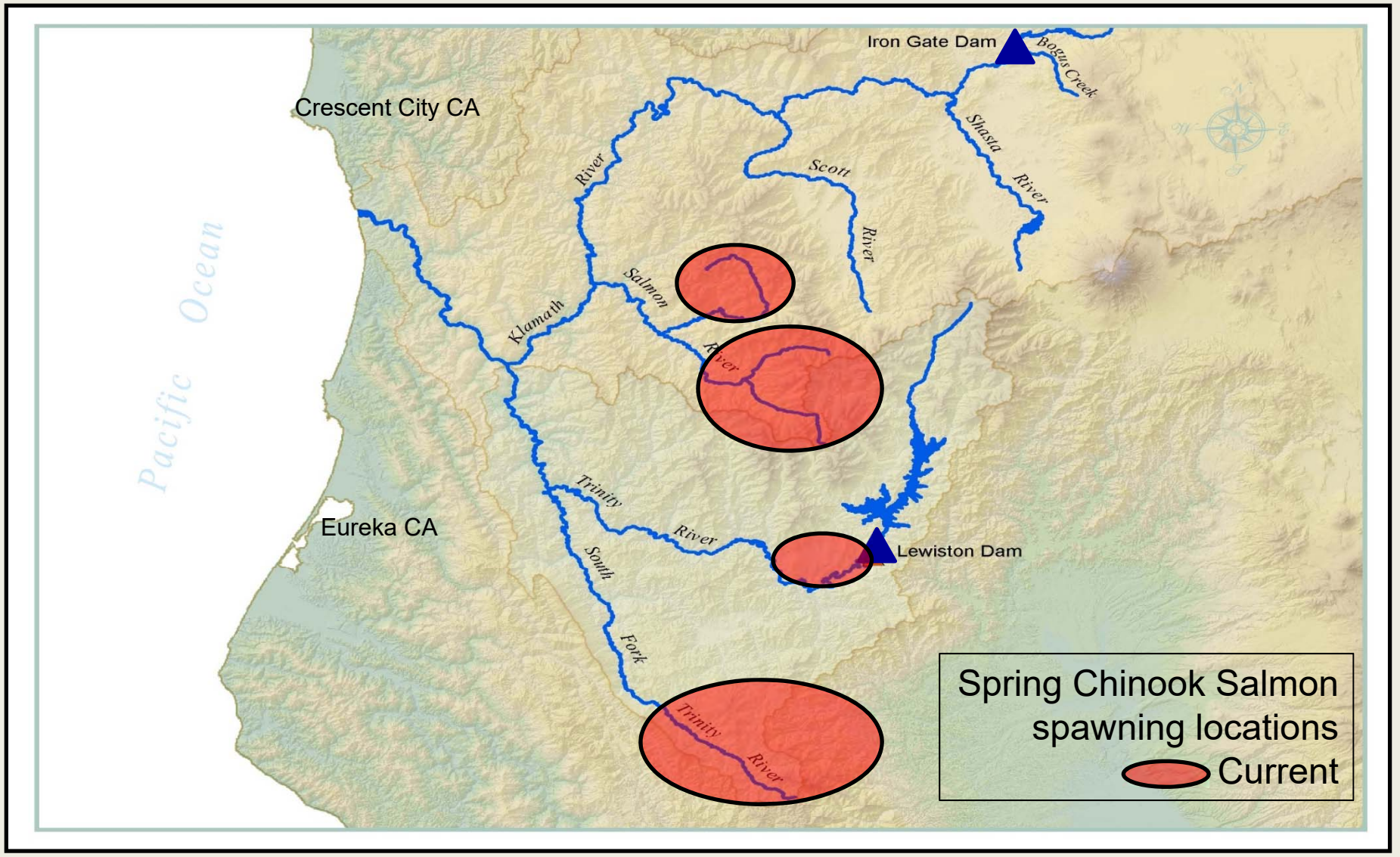
Meetings

- March 7, Crescent City, 2-4pm, Multi Purpose Room, 981 H Street, Suite 130, Crescent City, CA 95531
- March 18, Sacramento, 1-3pm, CDFW Fisheries/Water Branches office, 830 S Street, Sacramento, CA 95811
- March 26, Redding, 1-3, CDFW Redding Office Conference room, 601 Locust St., Redding, CA 96001

Department Principles for considering options

1. Focus on protecting naturally spawning populations (Salmon River, South Fork Trinity River).
2. Allow take in times and areas that have abundant hatchery stocks available.
3. Reduce harvest levels of spring Chinook Salmon that would be seen in a normal year of fishing.
4. Have data to support options
5. Provide some level of economic value to affected communities

Locations of Spring Chinook Salmon Spawning



Comparison of Spring Chinook regulations by fishing area

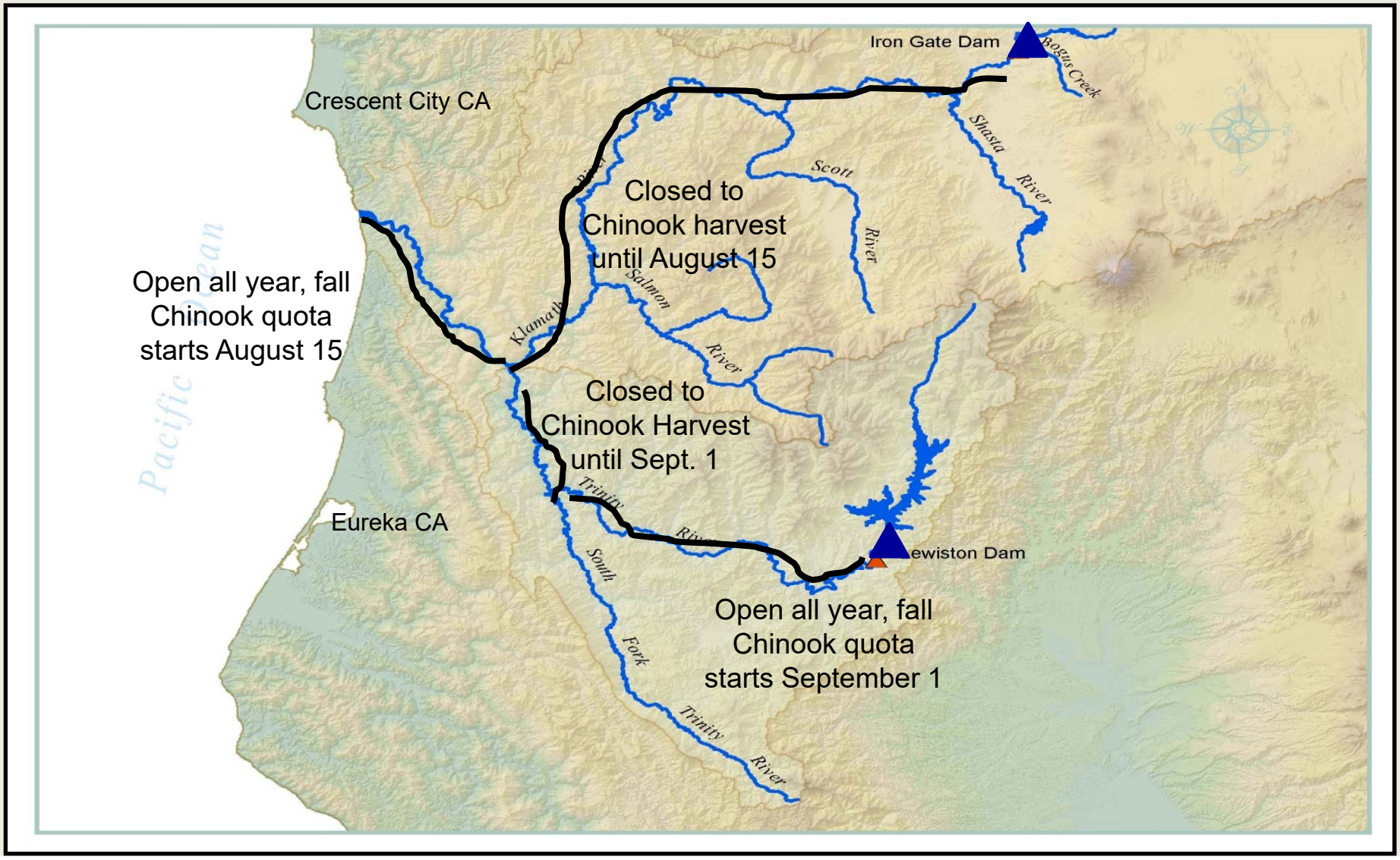
Current Emergency Regulations

- Lower Klamath (downstream of Weitchpec) - closed through August 14
- Upper Klamath - closed through August 14
- Lower Trinity (downstream of the South Fork Trinity River) - closed through August 31
- Upper Trinity upstream of Cedar Flat - closed through October 15
- Upper Trinity downstream of Cedar Flat - closed through August 31

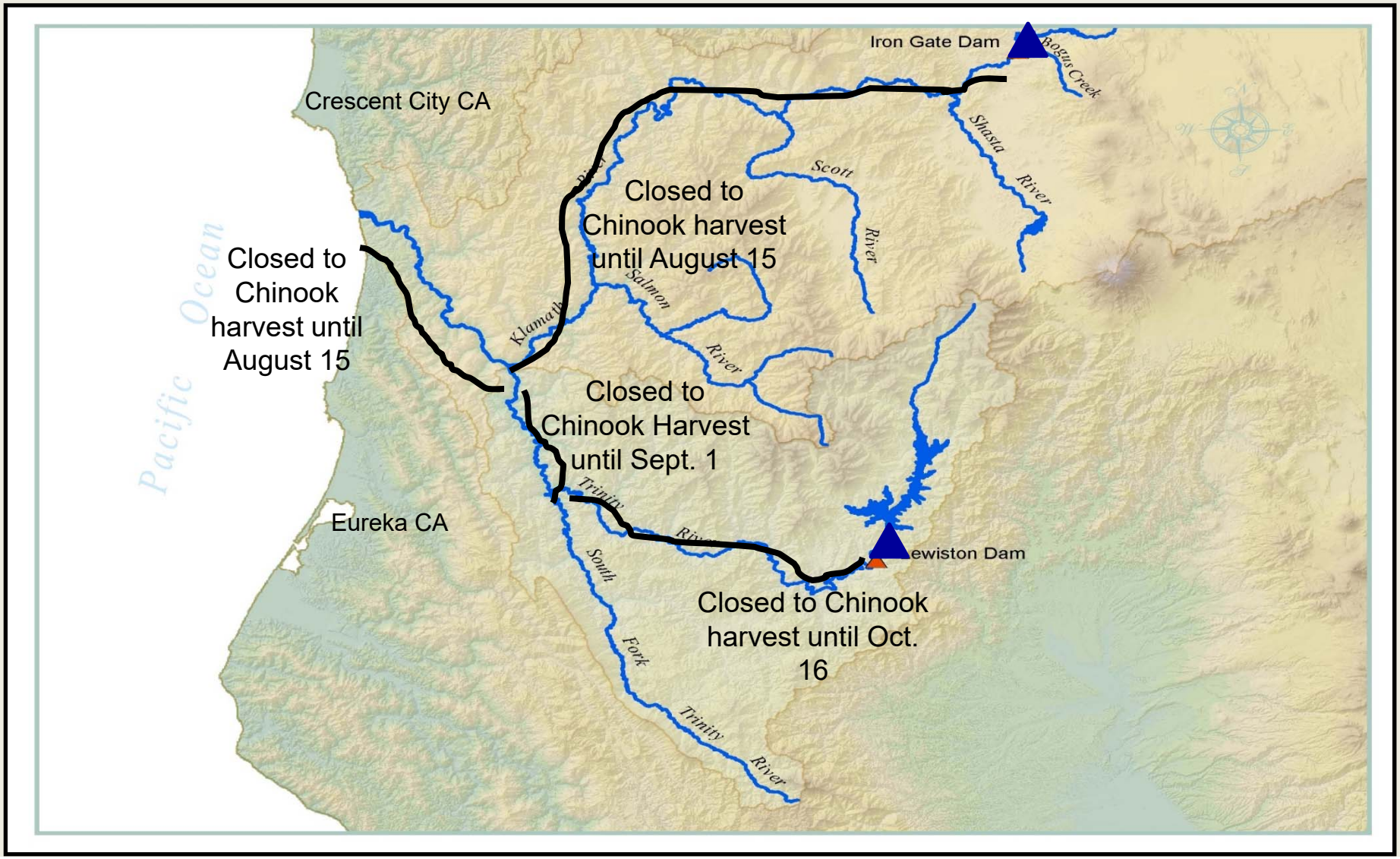
2018 regulations

- Lower Klamath - 2 salmon from January 1-August 14
- Upper Klamath - 0 salmon from January 1-August 14
- Lower Trinity - 0 salmon from January 1- August 31
- Upper Trinity - 2 salmon from January 1- August 31

Klamath Basin Spring Chinook Salmon 2018 regulations



Klamath Basin Spring Chinook Salmon Emergency regulations

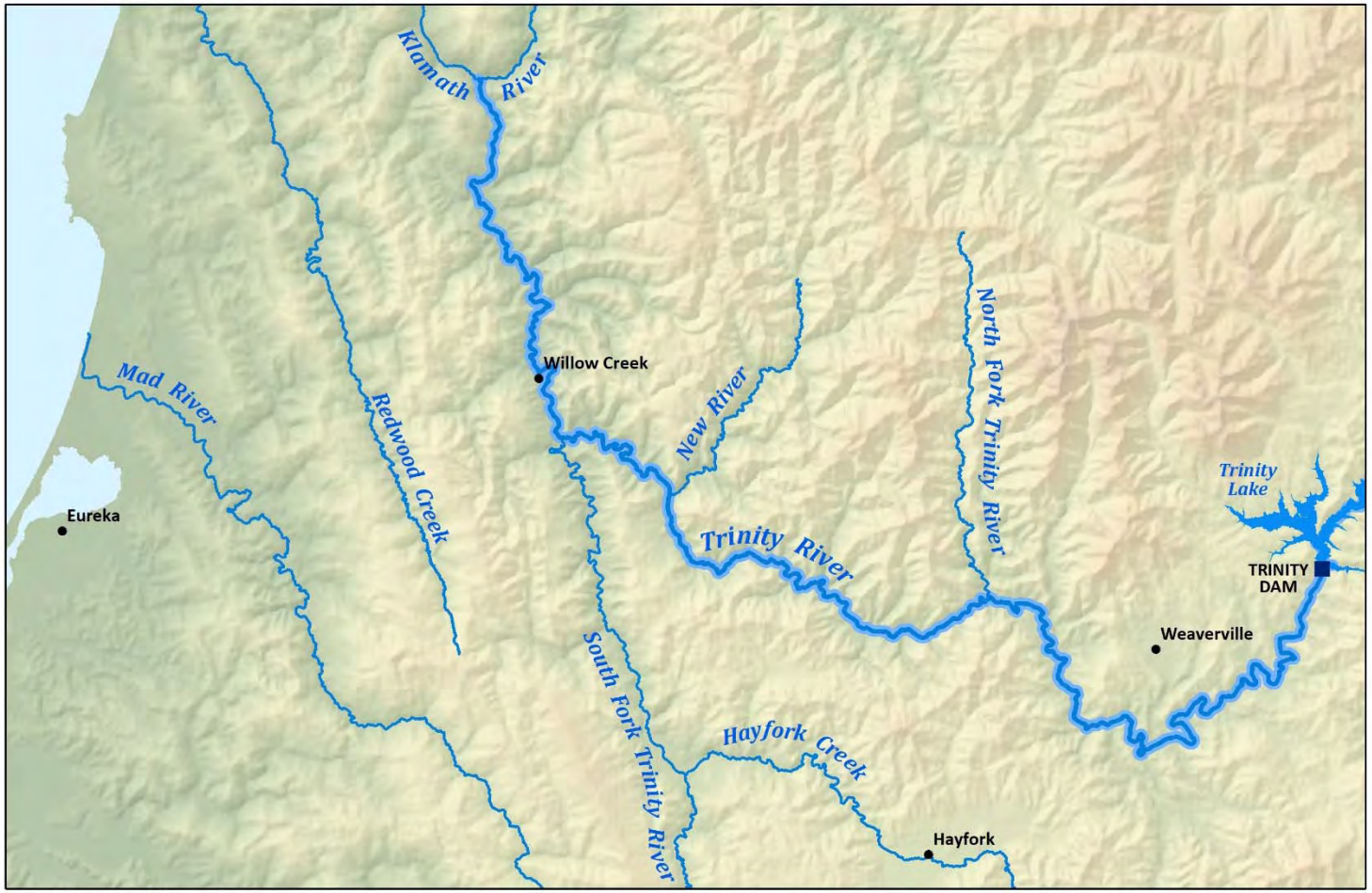


Constituent Recommendations for Considerations

Lower Klamath River	Upper Trinity River
Bag and Possession	Bag and Possession
1 and 2	1 and 2
Season re-start	Season re-start
July 1	**June 1 @ New River confluence**
July 15	**July 1 @ South Fork Trinity confluence**
	Start time to be consistent with old fishing regulations
	A re-opening could start at
	Either New River or confluence with SF
	New River

The Trinity River-

highlight of confluence with New River



Thank You / Questions

California Fish and Game Commission

Commission Mission, Vision and Core Values

Adopted December 13, 2018

Mission

The mission of the California Fish and Game Commission, in partnership with the California Department of Fish and Wildlife, is to provide leadership for transparent and open dialogue where information, ideas and facts are easily available, understood and discussed to ensure that California will have abundant, healthy, and diverse fish and wildlife that thrive within dynamic ecosystems, managed with public confidence and participation, through actions that are thoughtful, bold, and visionary in an ever-changing environment.

We recognize our responsibility to hold California's fish and wildlife and their habitats in the public trust, as well as their cultural and intrinsic value, and therefore work collaboratively with other federal, tribal, state and local government agencies, non-governmental organizations and the people of California to establish scientifically-sound policies and regulations to protect, enhance and restore California's native fish and wildlife in their natural habitats, and to secure a rich and sustainable outdoor heritage for all generations to experience and enjoy through both consumptive and non-consumptive activities.

Vision

The vision of the California Fish and Game Commission is a healthy and biodiverse, natural California in which an array of native fish and wildlife thrive within dynamic ecosystems and inspire human interaction and enjoyment.

Core Values

Integrity

We hold ourselves to the highest ethical and professional standards, pledging to transparently fulfill our duties and deliver on our commitments to protect and hold California's fish and wildlife and their ecosystems in the public trust, to ensure consistency of expectations and outcomes. We ensure that our choice or order of decision-making does not arbitrarily prioritize one interest group over others. We hold ourselves accountable to act in accordance with our values and code of ethics, even when it is difficult. Our actions reflect honesty, truthfulness, respect and accuracy.

Transparency

We recognize the important and wide-ranging impacts the Commission's decisions have on California's wildlife, wildlife habitat and residents, and that these decisions should be made based on a variety of inputs in an open, inclusive and public process that solicits a diverse set of perspectives. We strive to communicate with our partners, our stakeholders and the public responsively and openly about how and why decisions are made. We use adaptive processes and consistently gather as much information as possible to ensure the Commission is best informed for thoughtful decision-making, while acknowledging that decisions are most often made with incomplete information.

Innovation

We respond to the ever-changing natural and human environments by evaluating the efficiency and effectiveness of our decisions and processes, identifying new ideas that challenge conventional wisdom and historical biases, and seeking opportunities for innovation. We recognize that innovation always involves some element of risk, and that creative problem-solving and implementing forward-thinking solutions where value is added is key to meeting the constantly evolving needs of our stakeholders and California's fish and wildlife. We take time to frame challenges, adapt, and execute new and useful ideas, including applying advances in sound science, evolving concepts of wildlife management, and public values toward wildlife in new and bold ways. We encourage novelty, creativity and flexibility as we proactively meet challenges and problem-solve.

Collaboration

We value collaboration, including teamwork and partnerships, in problem-solving and in developing policies and regulations. Teamwork is actively fostered and is one of the main ways we function. Collaborative efforts extend beyond the Commission and its staff to empower a diversity of stakeholders, other federal, tribal, state and local agencies, non-governmental organizations, and the people of California to participate in our problem-solving and decision-making processes and, where appropriate, engage in working groups that are inclusive and transparent.

We pursue productive and considerate partnerships, rather than relationships solely based on a formal legal agreement, and celebrate one another's successes as we take them to the next level together. A partnership is a mutually beneficial arrangement that leverages resources to achieve shared goals between and among the partners, based on mutual respect, open-mindedness, trust, and genuine appreciation of one another's contribution. Our primary partner is our sister agency, the California Department of Fish and Wildlife.

Excellence

We pursue quality, proactively assessing performance and striving to continuously improve the delivery of fair and accessible services, work products and decisions, as well as the efficiency and cost-effectiveness with which these are delivered. We are committed to being and delivering the best, and are diligent about creating better ways of doing what we do. We take pride in our efforts and what we make possible. We approach every challenge with an expectation and determination to succeed.

Stewardship

We hold the state's wildlife and their habitats and ecosystems in trust for the public, respecting that they have intrinsic value and are essential to the well-being of all California residents. We give attention to the environmental and human stressors, including climate change, development and other threats, that affect the resilience and health of our wildlife and their habitats and ecosystems. We use credible science, evolving concepts of wildlife management, and public values toward wildlife to evaluate programs, policies and regulations that will help achieve our stewardship goals. We recognize the dynamic nature of and stay abreast of changes in science, and that it should include the evaluation principles of relevance, inclusiveness, objectivity, transparency, timeliness, verification, validation and peer review of information as appropriate.

CALIFORNIA FISH AND GAME COMMISSION PETITIONS FOR REGULATION CHANGE - ACTION

Revised 4/12/2019

FGC - California Fish and Game Commission DFW - California Department of Fish and Wildlife WRC - Wildlife Resources Committee MRC - Marine Resources Committee

Grant: FGC is willing to consider the petitioned action through a process Deny: FGC is not willing to consider the petitioned action Refer: FGC needs more information before deciding whether to grant or deny

General Petition Information					FGC Action		
Tracking No.	**Date Received**	**Name of Petitioner**	**Subject of Request**	**Short Description**	**FGC Receipt Scheduled**	**FGC Action Scheduled**	**Staff / DFW Recommendation**
2018-018	12/6/2018	Gary F. Brennan	Hollenbeck Canyon	Extend the hunting season for American crow in Hollenbeck Canyon to coincide with the statewide American crow hunting season.	2/6/2019	4/17/2019	FGC staff: Refer to DFW for review and recommendation.
2018-019	12/18/2018	Don Greeno	Recreational shrimp mesh size	Increase minimum trap opening size for recreational shrimp south of Point Conception from current ½" to a size between 1 ½" and 3", to reduce proportion of juvenile shrimp in catch and to increase parity with size restrictions north of Point Conception.	2/6/2019	4/17/2019	FGC Staff: Approve DFW's recommendation. DFW: Deny the petition at this time given DFW's current focus on other rulemakings.
2019-001	1/7/2019	Walter Lamb	Ballona Wetlands	Amend Section 630 of the Code of California Regulations, Title 14 to eliminate commercial parking use in the Ballona Wetlands Ecological Reserve	2/6/2019	4/17/2019	FGC Staff: Refer to DFW for review and recommendation.
2019-002	1/24/19	Brian Gorrell	Nearshore Permits	Add provision to purchase "trap endorsement" for nearshore permit holders who purchased two nearshore permits to create one nearshore permit, in compliance with the limited entry permit reduction process, that ended last year.	2/6/2019	4/17/2019	FGC Staff: Refer to DFW for review and recommendation.
2019-003	1/30/19	Keith Rootsaert	Emergency Reg for Monterey	Request for an emergency rulemaking to add Section 29.12, to increase the recreational daily bag limit of purple sea urchin at Tanker's Reef.	2/6/2019	4/17/2019	FGC Staff: Approve DFW's recommendation. DFW: DENY: the evidence submitted does not demonstrate the need for emergency action for this limited geographic area. Recommend that petitioner work with DFW to explore possible options to undertake the work within the existing regulatory structure.

Tracking Number: 2018-018 AM 1

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, 1416 Ninth Street, Suite 1320, Sacramento, CA 95814 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)
Name of primary contact person: Gary F. Brennan
Address:
Telephone number:
Email address:

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Sections 200, 203, 205, 265, 355, 710, 710.5, 710.7, 1050, 1530, 1583, 1745, 1764, 1765 and 10504, Fish and Game Code. Reference: Sections 355, 711, 713, 1050, 1055.3, 1301, 1526, 1528, 1530, 1570, 1571, 1572, 1580, 1581, 1582, 1583, 1584, 1585, 1745, 1761, 1764, 1765, 2006 and 10504, Fish and Game Code; Sections 5003 and 5010, Public Resources Code; and Sections 25455, 26150 and 26155, Penal Code.

3. Overview (Required) - Summarize the proposed changes to regulations: Request to amend Title 14 § 551 (o)(24) – Hollenbeck Canyon to extend the American Crow season to coincide with the state American Crow hunting season.

4. Rationale (Required) - Describe the problem and the reason for the proposed change: Current regulations end the American Crow hunting season on February 1 in Hollenbeck Canyon. This regulation was to end hunting of the predator corvid prior to the birthing season. By extending the season the full 124 days after the first Saturday in December, more predator crows may be removed by hunters prior to the birthing and fledgling season which would assist in the recovery of birds species which nest in the Hollenbeck Canyon Wildlife Area. We understand the regulation change has been proposed by DFW Region Five leadership. We just want to get this matter on the Commissions radar when the regulation package comes before the commission next year. If it is not included, we believe we have a good cause to have the regulation adjusted to extend the crow hunting season in order to remove more birds which predate on nesting birds and their fledglings

SECTION II: Optional Information

5. Date of Petition: 12/5/2018

6. Category of Proposed Change

☐ Sport Fishing
☐ Commercial Fishing
☒ Hunting
☐ Other, please specify:

7. The proposal is to: (*To determine section number(s), see current year regulation booklet or https://govt.westlaw.com/calregs*)

☐ Amend Title 14 Section(s):§ 551 (o)(24) – Hollenbeck Canyon
☐ Add New Title 14 Section(s):
☐ Repeal Title 14 Section(s):

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition

Or ☒ Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency: December 2019 or before.

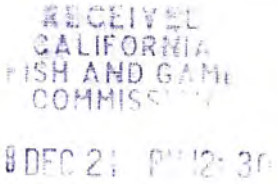
10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents: Letter from the San Diego County Wildlife Federation regarding the request for change to Title 14§ 551 (o)(24) – Hollenbeck Canyon.

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: No fiscal impact

12. Forms: If applicable, list any forms to be created, amended or repealed:

SECTION 3: FGC Staff Only

Date received:



FGC staff action:

☑ Accept - complete
☐ Reject - incomplete
☐ Reject - outside scope of FGC authority

Tracking Number 2018-018 AM 1

Date petitioner was notified of receipt of petition and pending action: February 6, 2019

Meeting date for FGC consideration: April 17, 2019

FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition _____
  Tracking Number
- ☐ Granted for consideration of regulation change

Tracking Number: (2018-019)

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SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)
Name of primary contact person: Don Greeno
Address:
Telephone number:
Email address:

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Coonstripe shrimp authorities cited are sections 200,205,265 and 270, Fish and Game Code.

3. Overview (Required) - Summarize the proposed changes to regulations: proposed changed in recreational Shrimp fishing South of Point Conception Trap opening size of ½" to a size appropriate to catch the species as ½" is too small 1 ½ - 3" would be an appropriate size range ½" current regulation will only catch Juvenile Shrimp less than 1 year old and Juvenile Bycatch..

4. Rationale (Required) - Describe the problem and the reason for the proposed change: Current Traps opening size of ½" will not catch Average Sized Shrimp of 2.5"-3.5" as the small size only allows catch of Juvenile Shrimp and Juvenile Bycatch. the current regulation ether has a typo or other problem as a ½" tramp opening size is not manufactured, recognized or used anywhere in the recreational or commercial shrimp industry or the entire world for any species by any fisherman. A trap must have an opening of one size the shrimp enters the trap/pot and once inside the trap the exterior MESH must be of a smaller size to keep the shrimp inside the trap/pot. With a ½' opening the smaller exterior MESH would need to be of ¼" MESH size to retain the catch. The ½" opening size will only allow Juvenile shrimp to enter the trap and nothing larger than ¼' can escape as Bycatch. Catching any species that small is not good and this regulation must be amended.

SECTION II: Optional Information

5. Date of Petition: 12/18/2018

6. Category of Proposed Change

☒ Sport Fishing
☐ Commercial Fishing
☐ Hunting
☐ Other, please specify:

7. The proposal is to: (*To determine section number(s), see current year regulation booklet or https://govt.westlaw.com/calregs*)

☒ Amend Title 14 Section(s):CCR T-14 29.80
☐ Add New Title 14 Section(s):
☐ Repeal Title 14 Section(s):

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition

Or ☒ Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency:

10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents: PDF DFG Status of Fishery report on Coonstripe Shrimp Pandalus danae, photos of traps used to identify the trap opening size and Exterior Mesh of a shrimp trap/pot, Publics negative comments from Web forums about this regulation and a detailed overview of the problem and needed amending.

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing:

12. Forms: If applicable, list any forms to be created, amended or repealed:

SECTION 3: FGC Staff Only

Date received:

FGC staff action:

☑ Accept - complete
☐ Reject - incomplete
☐ Reject - outside scope of FGC authority

Tracking Number 2018-019

Date petitioner was notified of receipt of petition and pending action: February 6, 2019

Meeting date for FGC consideration: April 17, 2019

FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition _____
  Tracking Number
- ☐ Granted for consideration of regulation change

Subject: Recreational Coonstripe Shrimp Fishing South of Point Conception

Dear Melissa Miller-Henson and the Fish and Game Commission,

My Name is Don Greeno and I am a recreational Fisherman from Southern California South of Point Conception in the Region 5 area.

Over the years I have looked into fishing for shrimp locally and most recently had the urge again to pursue the regulations to fish for shrimp. When I read the current regulation it was very unclear as I will explain in a moment but, it was the same written regulation I have read for many years. I believe over 20 years if I am correct in my memory.

> CCR T-14 29.80(f) Shrimp and prawn traps may be used to take shrimp and prawns only. Trap openings may not exceed ½ inch in any dimension on traps used south of Point Conception nor five inches in any dimension on traps used north of Point Conception.
>
> CCR T-14 29.08(a) Except as provided in this article there are no closed seasons, closed hours or minimum size limits for any invertebrate. The bag limit on all invertebrates for which the take is authorized and for which there is not a bag limit otherwise established in this article is 35.

I looked into purchasing some traps and found that Shrimp Traps/Pots come in a few wire size configurations of **½" and 7/8" MESH**. While reading the above regulation on the recreational take of Coonstripe Shrimp South of Pont Conception, it refers to the **TRAP OPENING BEING ½"** IN ANY DIRECTION. However, the trap manufactures **do not in any instance** mention the trap opening sizes. This is the way it is with all the manufactures of Shrimp Traps/Pots that supply the Commercial AND Recreational fishery here and across the United States and Canada. I did a very extensive search via the internet. Information was easy to find.

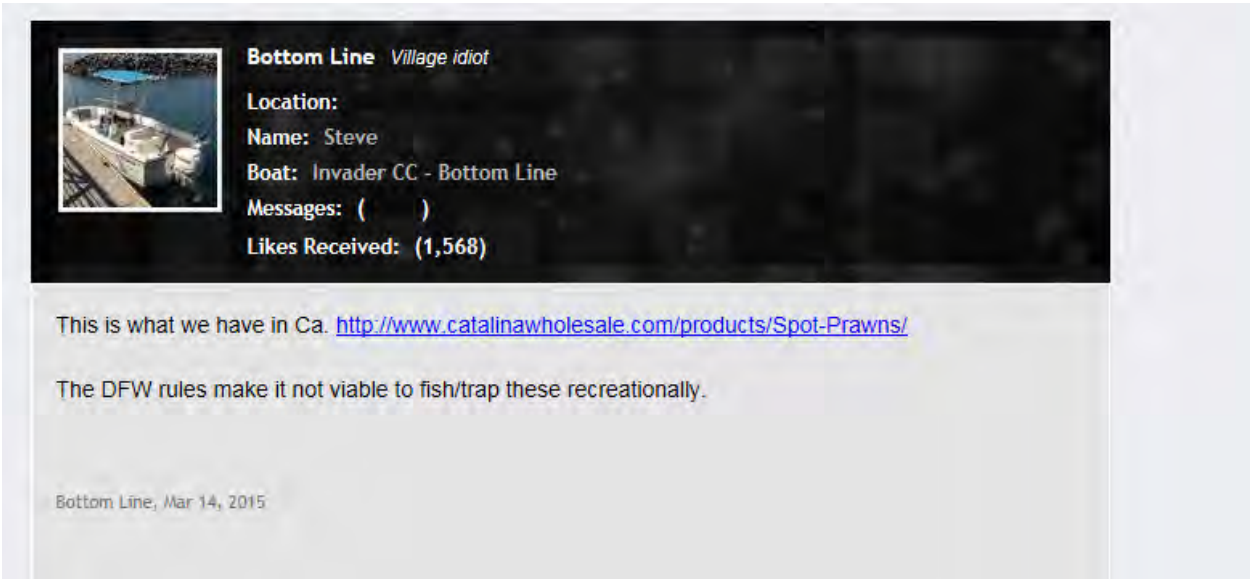
So with traps having ½" MESH and no mention of opening sizes I wanted to ask the Warden and get some clarification if the regulation is speaking of ½"MESH or OPENING? Now I was confused.

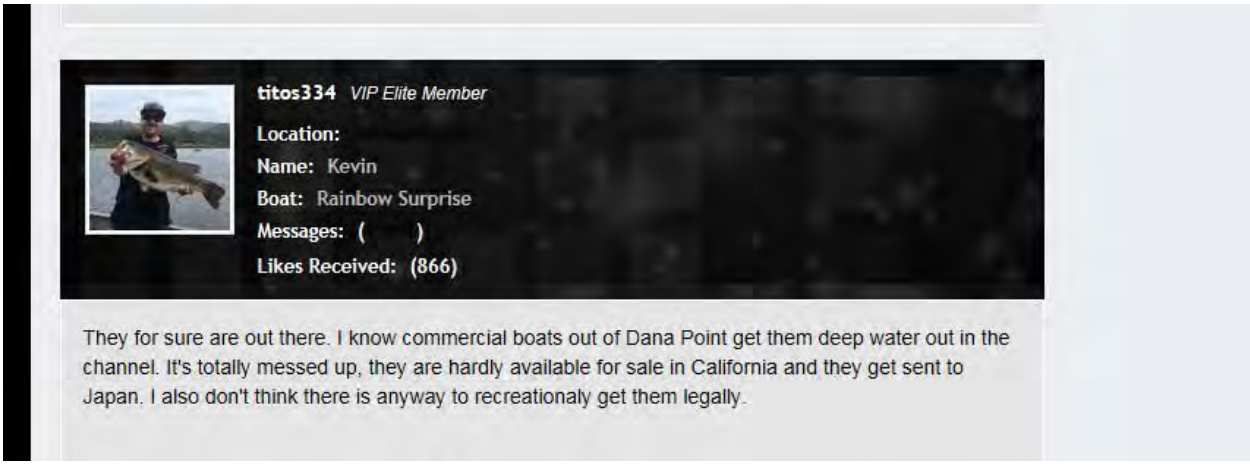
I emailed Region 5 on the "Ask a Warden" email address I found easily online.

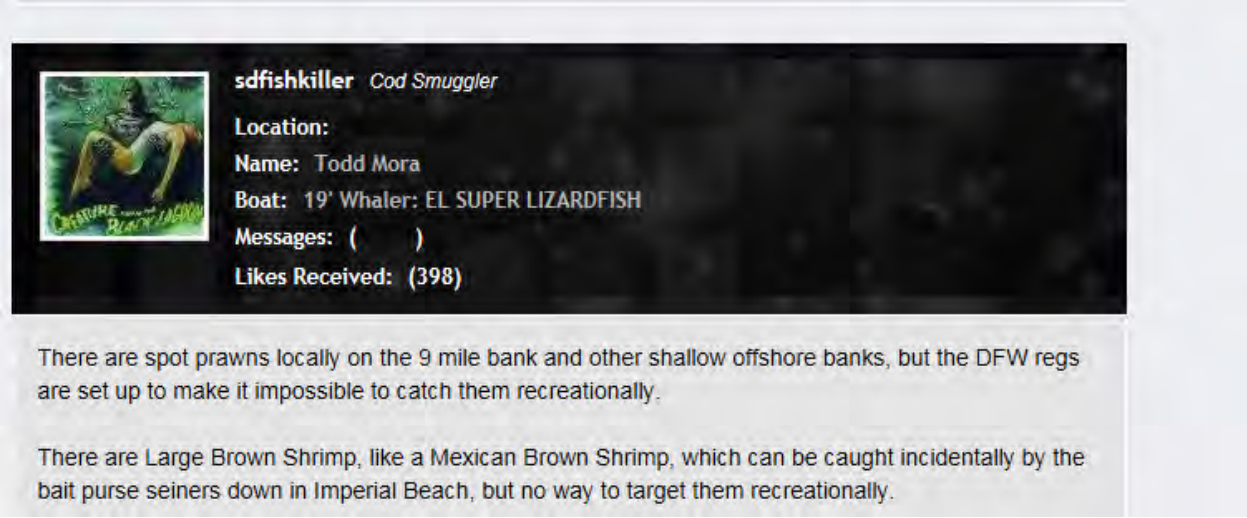
I was provided 2 responses. Both were detailed. I have provided a copy of those responses and it is an attachment to this letter. One response clearly explains that she does not know why it is written that way as it basically **eliminates fishing for shrimp South of Point Conceptions altogether**? How strange I thought. **Why would they write a regulation to say you can but mean you can't???? makes no sense at all.** ***You mean I have to make sure when I read the regulations that I know you mean something different?*** Your organization has integrity and I know that is not the case. Must be an error.

I responded to Warden Jason Kraus with a detailed letter asking some "Why" questions pointing out some very obvious discrepancies but that fell on deaf ears and I was not provided answers or even an email back after that.

I then went online and searched, was extremely hard to find any OTHER FISHERMAN who may have approached this subject in the past with DFG or DFW. I was surprised to find a handful of postings on web site Forums speaking about it and the consensus is that whenever DFG or DFW are asked about this or it is questioned that no one cares and no one responds. The overall reports online cast a very negative tone about the responses from local Wardens. I have attached a few of the forum quotes I found as examples. There are many more out there. I know after reading your Code of Ethics that your organization does not want to do things that cause distrust with the public as you need their support in regulation, conservation and public awareness.







Then it hit me, ***"Speaking to a Warden or Complaining to a Warden is like asking a police officer to change the law….they do not make the law they are paid to enforce the law."*** Same with your Wardens.

THIS IS THE REASON I HAVE CHOSE TO SEND THIS INFORMATION TO YOU TO LOOK AT AND LISTEN TO.

I BELIEVE THIS IS A MISPRINT OR AN ERROR AND NO ONE HAS PAID ATTENTION TO IT AND OR NO ONE HAS CHALLENGED IT.

If someone had I am sure there would have been a revision like back in the 90'S when the Coonstripe Shrimp Daily Bag limit was changed from 35 each to 20lbs.

"I believe it is during this change in regulation that the printed regulation error was made and this needs to be re-looked at to correct it."

Researching further I searched and found a report by your organization written by Marine Biologists.

This report is titled **Coonstripe Shrimp, *Pandalus danae***

Here is the link

https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=34427

The report details the fishery history, reproduction, range and status of the fishery commercially and recreationally.

This report is one of the ONLY REPORTS I CAN FIND THAT MENTIONS THE TRAP OPENING SIZE OR FUNNEL SIZE OF 3" in use by commercial fisherman noted by your biologists.

"*The traps are typically 39 inches (1 meter) diameter, 16 inches (41 centimeters) tall and have entry funnels 3 inches (8 centimeters) in diameter*."

I have read the PDF above, the NOAA report, the Asian Pacific Report and there is minimal mention there as well.

"California has the largest directed coonstripe shrimp trap fishery on the west coast of North America."

A 3" or so opening would work along with the reports documentation on the Size of shrimp;

"Pandalid shrimp are medium to large size, have a laterally compressed body, a bladelike rostrum (spine-like extension of the anterior median carapace), well developed antennal scales and a muscular abdomen"

Research, again from British Columbia, found that males maturing in October of their first year averaged about 2.5 inches (6-7 cm) total length (TL), averaged 3.4 inches TL (8.5 centimeters) the following October and after becoming female by the third October, averaged 3.9 inches TL (10 centimeters). Large specimens can reach 5.5 inches TL (14 centimeters).

So a 1 year old shrimp is about 2.5 inches and after 3 years can reach up to 5.5 inches

Habitat damage and bycatch from this fishery is considered minimal. Since traps are set on muddy bottoms, they generally do not disturb coral, sponges and other fragile species often growing on rocks. Small shrimp and bycatch can escape the trap through the mesh, typically 0.5 inch square openings. Once onboard, the catch is carefully sorted and discards are thrown over, live if possible. Onboard fisheries observers have reported bycatch including hermit crabs; snails; juvenile Dungeness and rock crabs; decorator, umbrella and butterfly crabs; sunflower stars; hagfish; juvenile lingcod, cabezon and rockfish; sculpin; octopus; and other small shrimp

with those quotes directly from the Fish and Game Report you can see that the ½" MESH is for the escape of bycatch.

A Trap is a device that has an opening of one size (funnel/opening) for the shrimp to enter and smaller size openings (mesh) on the exterior of the trap so that the proper size shrimp remains in the trap and the smaller then ½ inch bycatch escapes. Does that make sense?

CCR T-14 29.80(f) Shrimp and prawn traps may be used to take shrimp and prawns only. Trap openings may not exceed ½ inch in any dimension on traps used south of Point Conception nor five inches in any dimension on traps used north of Point Conception.

With that said,

So a 1 year old shrimp is about 2.5 inches and after 3 years can reach up to 5.5 inches

How can those measurements fit in a ½" opening? They cannot. Only a Juvenile shrimp less than 1 year old can. That is catching babies and can hurt a fishery

Your current regulations of ½" openings HAS BEEN CONFIRMED TO SAY that the opening of the trap (funnel) would be ½" and that would mean the exterior MESH would have to be ¼" or smaller to keep a catch size, that can enter a ½" opening, IN. that means you would only catch JUVANILE SHRIMP.

THERE IS NO WAY THAT CAN BE THE WAY YOUR REGULATIONS WAS WRITTEN IF YOU ARE ABOUT CONSERVATION AND SUSTAINABILITY.

IT IS FOR THIS REASON I FEEL IT IS A TYPO OR SOMETHING THAT HAS BEEN OVERLOOKED WHEN DECIDED ON OR THERE WAS CONFUSION WHEN IT WAS WRITTEN. REGARDLESS OF THE WHY'S THERE IS

A PROBLEM WITH THIS AND **IT IS DOING 2 THINGS;**

1- PREVENTING A RECREATIONAL FISHERY
2- WILL HAVE A CATCH RATE OF ONLY JUVANILE SHRIMP EFFECTING THE ENTIRE FISHERY if anyone even tries to catch them per the regulation

I know from reading all about DFG and DFW that you are here for conservation.

I know from reading this you will care about what I have brought to you today.

A Funnel opening size of 1-1/2'- 3" would be a good starting consideration range. It would coincide with a size that would catch Avg to larger shrimp and eliminate catching juveniles.

I understand that the Crescent City area has the largest concentrations of shrimp but I do know from my own personal observation of the shrimp fleet here that the shrimp are here in enough concentrations to make catching them worth my time and enjoyment. Not to mention I really do want to have the opportunity to fish for them legally.

Please take another look at this regulation and please change it to reflect the proper language, size, and type of trap that will be appropriate to catch Coonstripe shrimp Recreationally below Point Conception.

Last request, the 35 shrimp a day limit on Spot prawns should be looked at as well as we have very nice concentrations of them in our local deep water canyons and ledges offshore.

In conclusion;

I hope that you see that the ½" opening for a legal shrimp trap is UNREASONABLE, NOT PRACTICAL AND WILL HURT THE FISHERY ONLY CATCHING JUVENILE SHRIMP AND BYCATCH – THERE IS AN ERROR OR TYPO IN THE PRINTED REGULATION AS ***½" IS NOT AT ALL APPLICABLE FOR ANY OPENING ON A TRAP OTHER THAN THE EXTERIOR MESH****. THE FUNNEL OPENING ENTRANCE TO THE TRAP MUST BE AT THE LEAST 1-1/2" TO A MAXIMUM OF 3"*

EVEN A FRESH WATER MINNOW TRAP OPENING IS 1" STANDARD ACROSS THE WORLD FOR SMALL PINFISH AND MINNOWS. CRAWFISH TRAPS HAVE A 2" OPENING AROUND THE GLOBE AND ARE VERY CLOSE TO THE TRUE SIZE OF A COONSTRIPE SHRIMP. USE THESE AS GAGE TO SIZE AND SPECIES BEING CAUGHT.

I would not expect that DFG or the DFW would write a regulation that says in some strange way that it is legal to fish for shrimp but supply a rule or regulation that if followed would not catch any of the species but juveniles. if the intention was to prevent recreational shrimp fishing why not just say NO RECREATIONAL TAKE? WHY HAVE A REGULATION AT ALL?

it is clear and obvious that the REGULATIONs were put there to allow recreational fishing for Coonstripe Shrimp and the fact that in the 1990's the daily bag limit was changed from 35 each to 20lbs a day says that there should be a revision to this opening size and that the current regulation has a flaw that needs addressing sooner than later.

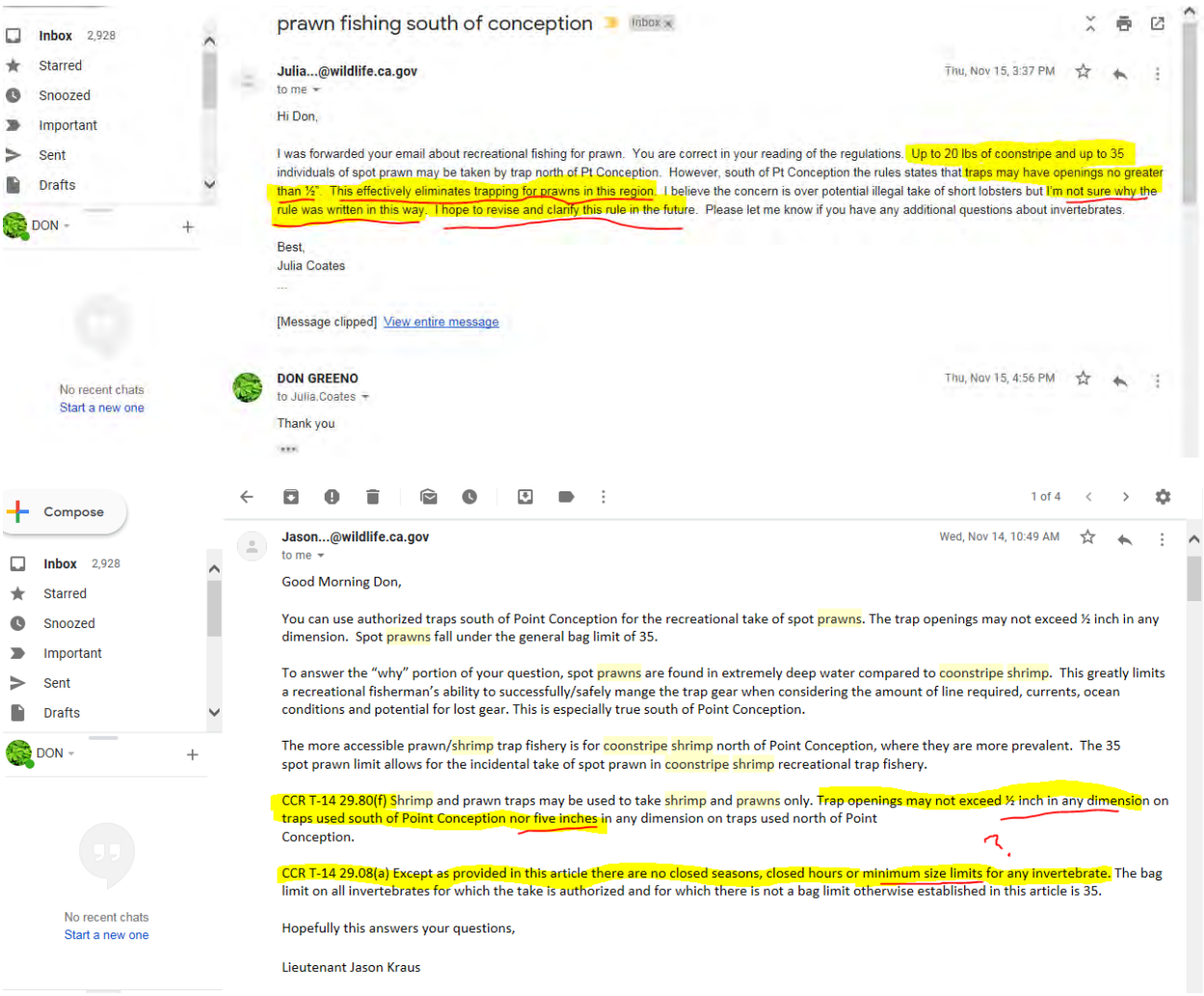
That last Biological report you have online is from 2008.

Thank you for your time and consideration. I hope I made my points clear and you make quick change to this regulation.

I look forward to your response to this issue.

Respectfully

Don Greeno



Inbox 2,928
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Snoozed
Important
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Drafts
DON
No recent chats
Start a new one

prawn fishing south of conception Inbox

Julia...@wildlife.ca.gov Thu, Nov 15, 3:37 PM
to me

Hi Don,

I was forwarded your email about recreational fishing for prawn. You are correct in your reading of the regulations. Up to 20 lbs of coonstripe and up to 35 individuals of spot prawn may be taken by trap north of Pt Conception. However, south of Pt Conception the rules states that traps may have openings no greater than ½". This effectively eliminates trapping for prawns in this region. I believe the concern is over potential illegal take of short lobsters but I'm not sure why the rule was written in this way. I hope to revise and clarify this rule in the future. Please let me know if you have any additional questions about invertebrates.

Best,
Julia Coates

[Message clipped] View entire message

DON GREENO Thu, Nov 15, 4:56 PM
to Julia.Coates

Thank you

Compose
Inbox 2,928
Starred
Snoozed
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Drafts
DON
No recent chats
Start a new one

1 of 4

Jason...@wildlife.ca.gov Wed, Nov 14, 10:49 AM
to me

Good Morning Don,

You can use authorized traps south of Point Conception for the recreational take of spot prawns. The trap openings may not exceed ½ inch in any dimension. Spot prawns fall under the general bag limit of 35.

To answer the "why" portion of your question, spot prawns are found in extremely deep water compared to coonstripe shrimp. This greatly limits a recreational fisherman's ability to successfully/safely mange the trap gear when considering the amount of line required, currents, ocean conditions and potential for lost gear. This is especially true south of Point Conception.

The more accessible prawn/shrimp trap fishery is for coonstripe shrimp north of Point Conception, where they are more prevalent. The 35 spot prawn limit allows for the incidental take of spot prawn in coonstripe shrimp recreational trap fishery.

CCR T-14 29.80(f) Shrimp and prawn traps may be used to take shrimp and prawns only. Trap openings may not exceed ½ inch in any dimension on traps used south of Point Conception nor five inches in any dimension on traps used north of Point Conception.

CCR T-14 29.08(a) Except as provided in this article there are no closed seasons, closed hours or minimum size limits for any invertebrate. The bag limit on all invertebrates for which the take is authorized and for which there is not a bag limit otherwise established in this article is 35.

Hopefully this answers your questions,

Lieutenant Jason Kraus

1 Coonstripe Shrimp, *Pandalus danae*

A coonstripe shrimp, *Pandalus danae,* caught near Crescent City, California. Photo credit: J. Bieraugel.

History of the Fishery

The California commercial fishery for the coonstripe shrimp, *Pandalus danae*, is a relatively new fishery. The first landing record for this species was in 1995; however, they were likely landed in small amounts prior to 1995 and recorded only in a general shrimp market category. Commercial coonstripe shrimp regulations adopted by the California Fish and Game Commission in 2002 (Title 14, CCR, §180.15) were devised cooperatively by the California Department of Fish and Game (Department) and fishers. Prior to 2002, the fishery was essentially unregulated. Current regulations cover general trap and vessel permit requirements, prohibit trawling, specify a closed season from November 1 through April 30, and provide a control date for a possible limited entry fishery. Logbooks are not required.

California has the largest directed coonstripe shrimp trap fishery on the west coast of North America. Most of the fishing activity takes place within a few miles of Crescent City Harbor. A formerly active trap fishery in southern Oregon has dwindled, culminating in landings of less than 10 pounds per season (4.5 kilograms per season) for the past three years. In the San Juan Islands of Washington state, there is small trap and trawl fishery for coonstripe shrimp. In southern British Columbia, there is short season trap fishery, a small directed trawl fishery and some coonstripe shrimp are caught incidentally in pink and sidestripe shrimp trawls. Total trap and trawl landings in both Washington and British Columbia are similar in size to California's trap fishery. In Alaska, coonstripe shrimp are not targeted, but are landed incidental to other fisheries.

The California commercial fishery for coonstripe shrimp had its first significant landings in 1996 and remained relatively stable from 1997 through 2002, averaging 78,200 pounds (36 metric tons) per year. After declining to a low of 22,200 pounds (10 metric tons) in 2007, the 2008 season yielded 85,200 pounds (39 metric tons), the second largest annual landings. Average landings for the fishery, since 1996, are almost 62,800 pounds (28 metric tons) (Figure 1-1).

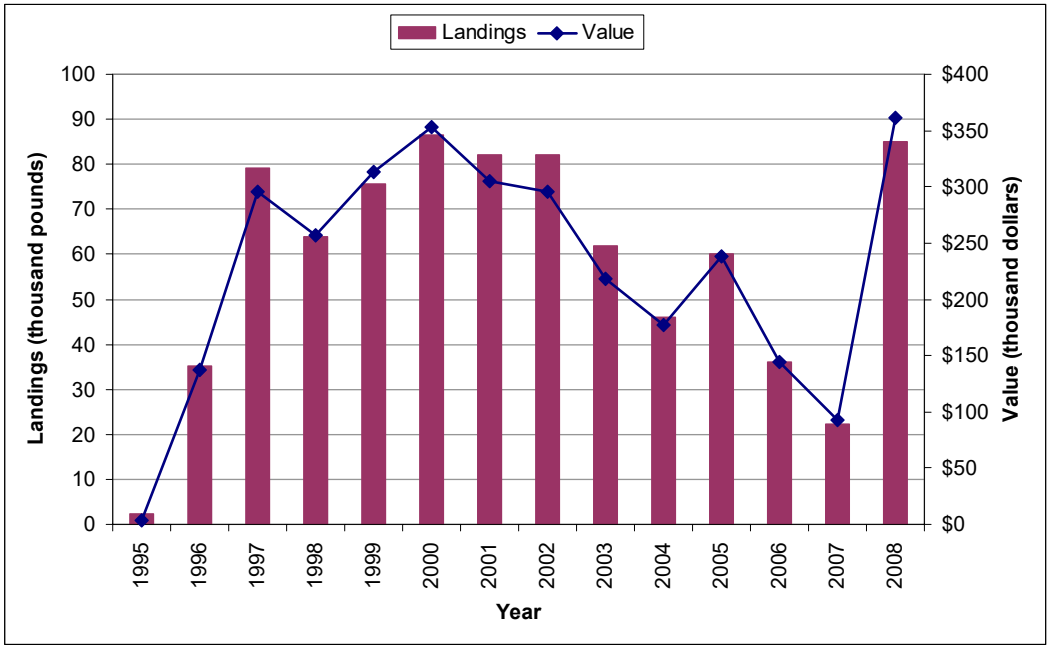


Figure 1-1. Coonstripe shrimp commercial landings and value, 1995-2008. Data source: CFIS data, all gear types combined.

Although catch-per-unit-effort is reportedly low, a high price per pound keeps diligent fishers interested. Fishers often soak gear for several days and can store several trips worth of Coonstripe shrimp alive before selling to the fish buyer. Count per pound ranges from 23 to 40 shrimp, but buyers prefer lower counts of larger shrimp. The live product is shipped to markets in the San Francisco and Los Angeles areas where consumers pay $5.99 to $6.99 per pound ($13.20 to $15.40 per kilogram), depending on quality. Since 1996, the average price paid to fishers has ranged from $3.52 to $4.25 per pound ($7.77 to $9.36 per kilogram). Paid the latter in 2008, total ex-vessel value was $361,800 (Figure 1-1). Average annual ex-vessel value from 1996 to 2008 was $245,400.

As an open access fishery, the size and composition of the fleet varies each year. Since 1995, there has been between 1 and 20 vessels making landings – mostly directed and some incidental. Only a few fishers consistently make substantial landings, others come and go. Seven vessels made landings in 2008, with four vessels catching the majority of the shrimp. All seven are also commercial Dungeness crab vessels. The coonstripe shrimp season, May 1 through October 31, complements the Dungeness crab season, December 1 through July 15. Since the enactment of the coonstripe shrimp vessel trap permit requirement in 2002, there are typically three times the number of permits sold as are used each year.

In the Crescent City area, fishers set traps on the muddy bottom near rocky reefs. The latest trap style is a tapered, circular design from Canada (Figure 1-2). Each trap weighs less than10 pounds (4.5 kilograms) and is constructed of mesh over a stainless steel frame. The traps are typically 39 inches (1 meter) diameter, 16 inches (41 centimeters) tall and have entry funnels 3 inches (8 centimeters) in diameter. Traps are fished in sets of 10 to 15 connected together on a long line string. Each end of the set is held down by a weight and marked with a buoy on the surface. Fresh fish, usually sardines, mackerel, herring or albacore, is used as bait. Some fishers position their traps at a rather specific depth, about 25 fathoms (46 meters), while others vary the depth and prospect as shallow as 12 fathoms (22 meters). The predominant fishers have about 500 traps, and may fish fewer. Gear is rarely lost, but does wear out.

Figure 1-2. A Crescent City commercial fisher empties a typical coonstripe shrimp trap onto a sorting table. Photo credit: J. Bieraugel.

Habitat damage and bycatch from this fishery is considered minimal. Since traps are set on muddy bottoms, they generally do not disturb coral, sponges and other fragile species often growing on rocks. Small shrimp and bycatch can escape the trap through the mesh, typically 0.5 inch square openings. Once onboard, the catch is carefully sorted and discards are thrown over, live if possible. Onboard fisheries observers have reported bycatch including hermit crabs; snails; juvenile Dungeness and rock crabs; decorator, umbrella and butterfly crabs; sunflower stars; hagfish; juvenile lingcod, cabezon and rockfish; sculpin; octopus; and other small shrimp.

Interest in recreational fishing also rose in the 1990s, presumably because the growing commercial fishery showed that the shrimp could be fished close to shore with lightweight traps. The recreational limit was increased from the general invertebrate species limit of 35 shrimp per day to 20 pounds (9 kilograms) per day in 1998 (Title 14, CCR, §29.88). There is no closed season or size limit for the recreational fishery. Effort and catch are believed to be minimal, although fishery surveys have not been conducted. This species is not targeted by commercial passenger fishing vessels.

Status of the Biological Knowledge

Coonstripe shrimp are crustaceans in the order Decopoda containing lobsters, crayfish, crabs and other shrimp. These caridean shrimp are members of the Pandalidae family, a family of cold water shrimp containing 24 genera and 162 species. Pandalid shrimp are medium to large size, have a laterally compressed body, a blade-like rostrum (spine-like extension of the anterior median carapace), well developed

antennal scales and a muscular abdomen. The muscular abdomen, used for swimming propulsion, has little room for organs—making it desirable as food. Antennal scales act as rudders and brakes and make possible elaborate escape maneuvers. Pereopods, the longest limbs, are relatively small and more suited to perching than walking. Pincers (claws called chelae), usually on the first two pereopods, are small or lacking in pandalids. The coonstripe shrimp has unevenly sized chelipeds (pereopods with chelae), favoring one side for feeding and other for grooming. They are known to spend a considerable amount of time keeping body surfaces and chemoreceptors clean. Their limbs are equipped with tiny brush and comb-like groups of setae especially for this purpose. The rostrum terminates in three points and has 7 to 16 dorsal spines and 5 to 10 ventral teeth. Body color is generally a milky-translucent background with prominent red to brown stripes and dots, sometimes with white markings and blue dots. There are broken, diagonal stripes on the abdomen and strong banding on the legs and antennae. The name coonstripe is sometimes attributed to other pandalid shrimp species which also bear striped markings.

Coonstripe shrimp is also referred to as dock shrimp for its habit of sometimes living around pilings. Normally, juveniles live in shallower water while adults live in the sublittoral zone at depths up to 606 feet (185 meters). This epibenthic shrimp inhabits a variety of bottom substrates, from mud to gravel, usually in areas with strong currents and shelter to hide in by day. Wide ranging, they are found from Sitka, Alaska to at least Point Loma, California (San Diego County). The southern end of their range has been incorrectly stated as far north as San Francisco, but with confirmation that *Pandalus gurneyi* is a synonym of *P. danae*, it is likely that the coonstripe shrimp range extends into Baja California, Mexico. Sporadically caught in many fisheries and surveys, they have only been found in densities high enough to support a fishery in a few select locations. Prey items include polychete worms and small invertebrates such as copepods and amphipods. Predators are likely octopus, crabs and various groundfish. Biological information on coonstripe shrimp is somewhat limited.

Coonstripe shrimp were the first of the pandalid shrimp to be described as protandrous hermaphrodites, beginning as males and transforming into females during the course of their lives. Most of the shrimp hatch as males in the spring, usually April, and spend about 3 months nearby as larvae. Larvae are complete with two pairs of antennae, mandibles, eyes and thoracic appendages used for swimming. Once the juvenile form is attained, usually by June, they undergo rapid molting and growth. Four months later, usually October, they are sexually mature and begin breeding. In their second year of breeding most are still males. Subsequently, the shrimp begin transforming into females. In their third year, they breed as females and probably do not survive another year. A small percentage of coonstripe shrimp are primary females, hatching and living their entire lives as females, thus adding resiliency to the species. This anomaly is assumed to increase in response to environmental pressures, such as fishing selectively for large females, which may unbalance the sex ratio. However, laboratory experiments indicate that for coonstripe shrimp, genetics is a stronger influence on sex determination. Sex change triggers are still poorly understood.

Coonstripe shrimp are unusual shrimp in that ovigerous (egg bearing) females can be found throughout the year (Figure 1-3). In studies from southern British Columbia, egg bearing females were mainly encountered from November to April. Recent anecdotal information from the California fishery indicates egg bearing females are encountered throughout the fishing season, especially near the beginning. Dockside sampling conducted by the Department in 1997, prior to the seasonal closure regulation, found the number of ovigerous females caught in the Crescent City fishery declined from 100 percent at the end of March to less than five percent at the end of June. During May 1997, corresponding to the first month of the current season, at least 50 percent of females caught were ovigerous. Larval recruitment in the closely related pink shrimp, *Pandalus jordani*, has been linked to ocean conditions and the strength and timing of the spring transition. Each year, along the Pacific Coast of North American between San Francisco, California (38° North Latitude) and the Queen Charlotte Islands, British Columbia, Canada (52° North Latitude), the coastal winds switch from the southerly winds of winter to the northerly winds of summer producing the spring transition. Some years, the impact of taking egg bearing females in late spring can have a large effect on recruitment because those may be the very eggs with the best chance of survival. Further investigation is necessary to understand how this concept relates to coonstripe shrimp recruitment.

Figure 1-3. A female coonstripe shrimp bearing eggs (green) along the underside of her abdomen. Photo credit: Scott Groth, ODFW.

The habit of continual breeding also complicates determining size at age for coonstripe shrimp. Research, again from British Columbia, found that males maturing in October of their first year averaged about 2.5 inches (6-7 cm) total length (TL), averaged 3.4 inches TL (8.5 centimeters) the following October and after becoming female by the third October, averaged 3.9 inches TL (10 centimeters). Large specimens can reach 5.5 inches TL (14 centimeters).

Coonstripe shrimp find their mates using a strategy called pure searching. Males do not guard the female or a territory. This avoidance of conflict allows them to be smaller without the necessary fighting chelipeds. The two sexes have chance encounters and may not even acknowledge each other until after the female molts and is therefore ready to mate. This strategy is found in populations of mobile species occurring in sufficient density that meetings are frequent. Mating is brief and females have the option to physically reject copulation and the depositing of the spermatophores. Soon after successful mating, the female extrudes, fertilizes and attaches the eggs to her swimming appendages where they are carried until hatching. Incubation of the eggs by the female produces lower fecundity but also lowers mortality before hatching. Cold water shrimp carry only a few hundred to a few thousand eggs each year and coonstripe shrimp averages 1140 eggs per year. This is a relatively small amount compared to warm water shrimp who release tens of thousands of eggs

annually. Like most cold water shrimp, the life history of coonstripe shrimp makes them unsuitable for aquaculture and susceptible to overfishing, especially in combination with habitat damage or climate change. There is currently no aquaculture of this species.

Status of the Population

Based on the short history of the fishery, the effort, landings and value appear relatively stable. However, to date there have been no estimates of abundance or other population parameters, such as recruitment and mortality rates, with which to assess the stock for sustainability. The relatively limited distribution of the fishable stock of coonstripe shrimp would seem to increase its vulnerability to overfishing.

Management Considerations

Although there are currently few active participants, coonstripe shrimp is an open access commercial fishery with no trap limits, and each year about three times as many permits are sold as vessels make landings. There is little to no interest within the industry in pursuing a permit or trap restriction program at this time. However, a control date of November 1, 2001 has been set in case a restricted access program is considered in the future (Title 14, CCR, §180.15); trap limits should be considered simultaneously. Gear cost and low catch-per-unit-effort will likely keep both the commercial and recreational fisheries from expanding rapidly, but effort should be monitored.

The current seasonal closure of the fishery is based on biological information from Canadian stocks, a short dockside sampling program in Crescent City and recommendations from local fishers. Although the season is designed to avoid the most common period of egg bearing females—sampling catch composition over a longer time period would check the effectiveness of this strategy. There is no closed season for the recreational fishery; egg bearing females can be legally harvested year round. Conservative management of this fishery is necessary because of the lack of data on this species. Further investigation of life cycle timing, the relationship of larval recruitment to ocean conditions and what portion of the stock is taken each year would help determine the impact of harvesting ovigerous females.

Brooke A.B. McVeigh
California Department of Fish and Game
BMcVeigh@dfg.ca.gov

Further Reading

Bauer RT. 2004. Remarkable shrimps: Adaptations and natural history of the Carideans. Norman (OK): University of Oklahoma Press. 296 p.

Butler TH. 1964. Growth, reproduction, and distribution of Pandalid shrimps in British Columbia. J. Fish. Res. Bd. Canada. 21(6):1403-1452.

Butler TH. 1980. Shrimps of the Pacific Coast of Canada. Can. Bull. Fish. Aquat. Sci. 202:280 p.

Jensen GC. 1995. Pacific coast crabs and shrimps. Monterey (CA): Sea Challengers. 87 p. Available from: NAL/USDA, Beltsville, MD.

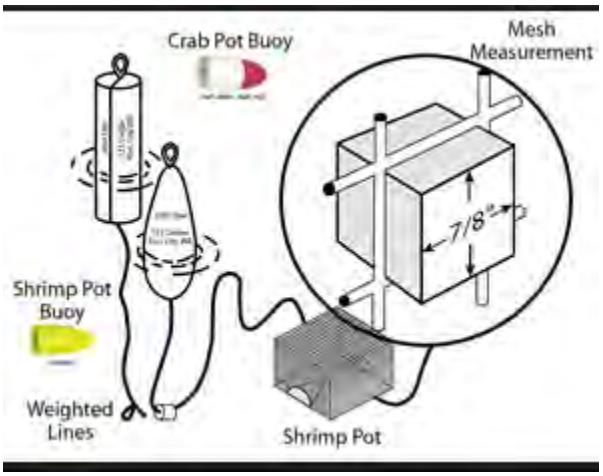
Roberts S. 2008. Wild-caught coldwater shrimp. Seafood Watch Seafood Report. Monterey (CA): Monterey Bay Aquarium; 63 p. http://www.montereybayaquarium.org/cr/cr_seafoodwatch/content/media/MBA_SeafoodWatch_ColdwaterShrimpReport.pdf

Wicksten MK. 1991. *Pandalus gurneyi* Stimpson synonymized with *Pandalus danae* Stimpson (Decopoda: Pandalidae). Proc. Biol. Soc. Wash. 104(4):812-815.

Coonstripe shrimp commercial landings and value, 1995-2008.

Year	Pounds	Value
1995	2,486	$3,729
1996	35,136	$137,734
1997	79,173	$295,017
1998	63,809	$256,431
1999	75,540	$312,906
2000	86,369	$353,627
2001	82,149	$305,265
2002	82,239	$295,505
2003	62,003	$218,533
2004	45,989	$177,448
2005	60,184	$238,551
2006	35,937	$144,664
2007	22,142	$92,706
2008	85,176	$361,801

Data Source: CFIS data, all gear types combined.



All information on line show exterior MESH size and almost never mentions OPEING SIZE

Here is Washington's State regulations for shrimp that is very descriptive

SHRIMP GEAR:

Pots must be constructed of either flexible or rigid mesh material (no liners allowed).

Entrance tunnels can be made of any size mesh material but must be located on the sides of the pot. The sum of the maximum tunnel widths must not exceed one-half the perimeter of the bottom of the pot.

Shrimp pots must not exceed 10 feet in perimeter and 18" in height.

All shrimp pot buoys must be yellow in color.

SHRIMP POT MESH SIZE:

1" Minimum Mesh Size

A ⅞" square peg must be able to pass through each mesh opening – see diagram, except for flexible (web) mesh pots, where the opening must be a minimum of 1 ¾" stretch measure.

Puget Sound:
Required for all shrimp pots during the month of May.
Required in all areas open for spot shrimp after June 1st.

Pacific Ocean:
Required year-round; Shoreward of 20 fathoms, the minimum mesh size for shrimp pots is 1/2-inch; Seaward of 20 fathoms, the minimum mesh size for shrimp pots is 1 inch.

1/2" Minimum Mesh Size

A ⅝" square peg must be able to pass through each mesh opening, except for flexible (web) mesh pots, where the opening must be a minimum of 1⅛" stretch measure.

Puget Sound:
Allowed after June 1st in any area closed for spot shrimp, but open for coonstripe and pink shrimp.

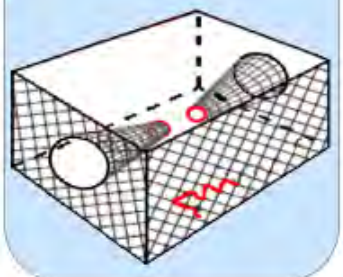
Shrimp Pots

Escape Mechanism

- Sidewall opening of 6 inches, located no more than 6 inches from the base and parallel to it, secured with a single piece of 30-thread, 100% untreated cotton twine.
- If your pot is made of rigid mesh, see the "rigid mesh" section on the reverse side.

Tunnel Eye and Size Requirements

- No more than 4 tunnel eye openings.
- Each opening cannot exceed 15 inches in perimeter.
- Bottom perimeter cannot exceed 153 inches and total volume cannot exceed 25 cubic feet.



Buoy Markings

Shellfish pot buoys must be marked with:

- Angler's first initial and last name
- Home address
- DMV-issued AK vessel numbers or the vessel name

Importance of Escape Mechanisms

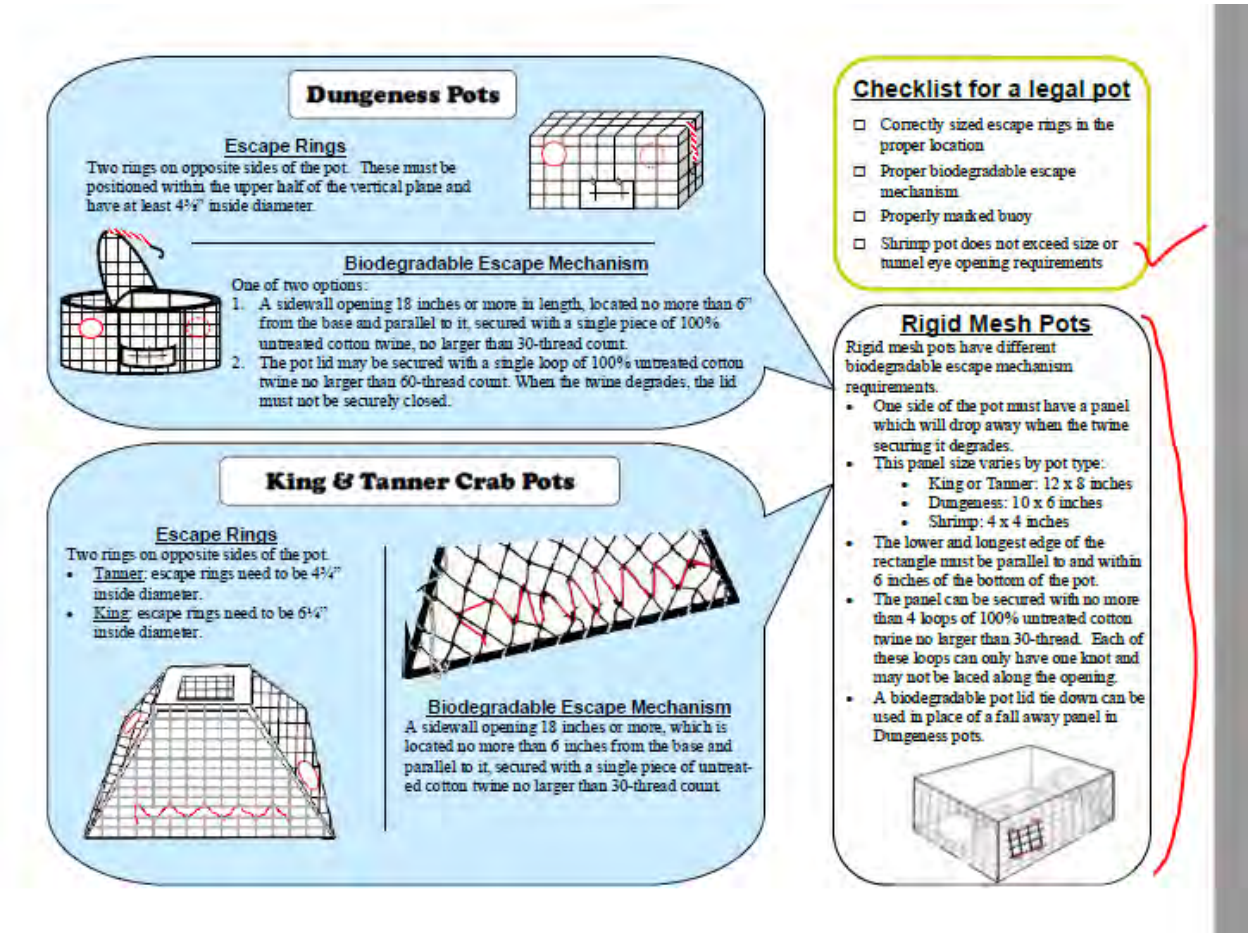
The purpose of biodegradable escape mechanisms in shellfish pot gear is to prevent unnecessary mortality by allowing shellfish to escape if pots are lost or left unattended. These mechanisms rely on the use of untreated biodegradable cotton twine which will provide an opening in the pot when the twine degrades.

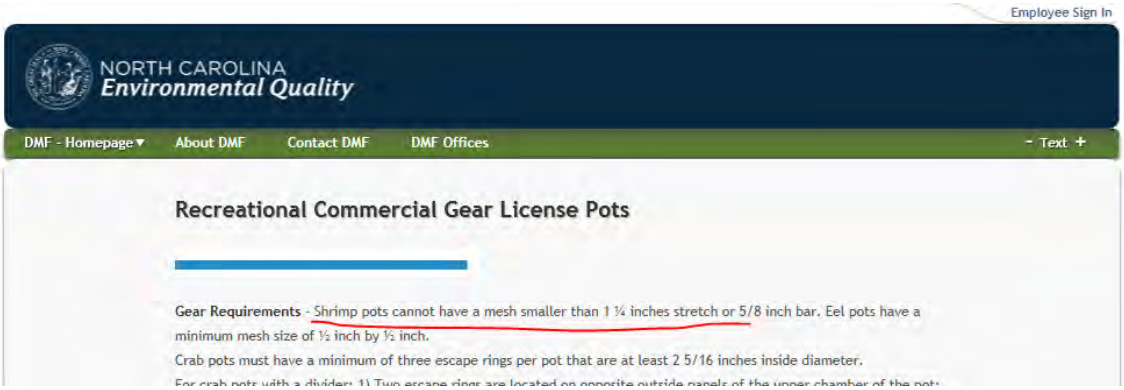
License applications and harvest regulations are available at http://www.sf.adfg.state.ak.us. Emergency orders, which always supersede regulations, are also available at the web site. For more information regarding bag and possession limits or to locate the ADF&G office closest to you, call (907) 465-4270.

Shellfish Pot Requirements

- Dungeness Pots
- King / Tanner Crab Pots
- Shrimp Pots
- Buoy Requirements

Alaska Department of Fish and Game
Division of Sport Fish
802 3rd St., Douglas, AK 99811
P.O. Box 110024, Juneau, AK 99811
(907) 465-4270
http://www.adfg.state.ak.us





This shows that even North Carolina has an exterior mesh requirement of nothing SMALLER THAN

1 ¼" STRECH OR 5/8 BAR. This is so bycatch can escape and the shrimp in North Carolina are a much smaller species of shrimp.

Tracking Number: (2019-001)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, 1416 Ninth Street, Suite 1320, Sacramento, CA 95814 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)
Name of primary contact person: Walter Lamb, Ballona Wetlands Land Trust
Address:
Telephone number:
Email address: landtrust@ballona.org

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Fish and Game Code Section 1580 ["The commission may adopt regulations for the occupation, utilization, operation, protection, enhancement, maintenance, and administration of ecological reserves."]

3. Overview (Required) - Summarize the proposed changes to regulations: This petition proposes to amend Section 630 of the Code of California Regulations, Title 14 to eliminate commercial parking use in the Ballona Wetlands Ecological Reserve, by changing the language in paragraph (h)(3) from "existing parking areas may be allowed under leases to the County of Los Angeles" to "existing parking areas may be allowed under leases to the County of Los Angeles provided such leases are limited to parking uses by public agencies that perform services for the Ballona Wetlands Ecological Reserve and that such leases prohibit parking for commercial use." The purpose of this proposed change is to convert a substantial portion of approximately 72,600 square feet of paved parking lot, used primarily by employees a private shopping plaza, and to a lesser extent by agencies of Los Angeles County, to a use more compatible with a public ecological reserve.

4. Rationale (Required) - Describe the problem and the reason for the proposed change: California taxpayers spent $139 million 15 years ago to acquire the land which now makes up the Ballona Wetlands Ecological Reserve. This included approximately $129 million of Proposition O public bond funds and $10 million of Proposition 12 public bonds funds. Neither of these public bond fund measures was approved by the voters to provide commercial parking space to local businesses. Yet, approximately 72,600 square feet of land currently leased to Los Angeles County, Department of Beaches and Harbors ("Beaches and Harbors"), includes parking for employees of the businesses in

Fisherman's Village, across Fiji Way from the ecological reserve. The current parking exception was adopted by the Commission at its August 19, 2005 meeting.

Los Angeles County currently pays the Department of Fish and Wildlife $1,608 per year to lease approximately 254 parking spaces, the same amount it has paid since approximately 1995. Only a small portion of this lot is used by the Department of Fish and Wildlife for its vehicles and an office trailer.

Section 630 currently provides the Department with sole discretion as to whether a more appropriate use of this parcel should take precedence over the existing parking use. There is no question that this parcel of land can and would be more appropriately used if the Department exercised that discretion, but the Department has not done so. Therefore the only available remedy short of litigation available to stakeholders of the ecological reserve is to request this regulatory change.

The existing commercial parking use violates the public bond fund measures used to acquire the land, violates the temporary Coastal Development Permit issued in 1988 and intended to be in effect for approximately five years, and violates the prohibition in the California Constitution against gifts of public funds, given the discrepancy between the fair market value of the parking spaces and what the County actually pays the Department pursuant to the lease agreement.

New Information:

When a resubmitted version of this petition was denied in December of 2017, the Commissioners expressed a consensus that the petition was not necessarily without merit, but that they felt it was premature since comments were still being received in response to publication of the draft Environmental Impact Report for the restoration of the Ballona Wetlands. The Land Trust disagreed with that assessment, because the Commission's duties to maintain appropriate regulations is independent from the Department's duties pursuant to the California Environmental Quality Act (CEQA). Nonetheless, the public comment period was closed on February 5, 2018 and the Department has had almost a year to respond to the public comments received. The Department has made statements at subsequent FGC meetings with regard to the parking lots indicating changes to usage of the parking areas in question, but those changes appear not to have been implemented.

Additionally, new documents have been obtained by the Land Trust (some pursuant to litigation settlement with Los Angeles County) that further reinforce the commercial use aspect of the parking area in question. These documents clearly show collaboration between the County and local businesses to influence land use decisions in a manner that would favor their business interests over the public's interest in restoring the Ballona Wetlands as native wildlife habitat.

Finally, this petition is significantly different that the previous petition in that it seeks only the prohibition of parking for commercial purposes, not the prohibition of parking by public agencies.

For these reasons, we are confident that this petition merits consideration at the April 2019 meeting of the California Fish and Game Commission.

SECTION II: Optional Information

5. Date of Petition: January 03, 2019

6. Category of Proposed Change

☐ Sport Fishing
☐ Commercial Fishing
☐ Hunting
☒ Other, please specify: Ecological Reserves

7. The proposal is to: (*To determine section number(s), see current year regulation booklet or https://govt.westlaw.com/calregs*)

☒ Amend Title 14 Section(s):630
☐ Add New Title 14 Section(s):
☐ Repeal Title 14 Section(s):

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition 2017-002
Or ☐ Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency: As soon as practically possible, but not an emergency

10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents: Please see attached documents relating to the existing parking use and proposed parking structure, including new information that the Land Trust obtained after the June 21 hearing on our original petition

The Ballona Wetlands Draft EIR is on the CDFW site: https://www.wildlife.ca.gov/Regions/5/Ballona-EIR

The archived audio of the 2005 Fish and Game Commission hearing is at http://cal-span.org/media/audio_files/cfg/cfg_05-08-19/cfg_05-08-19.mp3 and the discussion of the parking lots occurs at 223 minutes and 25 seconds (3:43.25).

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: Eliminating the existing parking lease with Beaches and Harbors would result in the loss of $1,608 in annual lease payments, which is substantially below market value. The land Trust hat offered to more than offset that amount if the paved lots can be converted to more appropriate use.

Additionally, due to lease payments that are clearly well below market value, and because parking for a shopping plaza and an unrelated County agency do not further the public purpose of the ecological reserve and the Department of Fish and Wildlife generally, the state could be in violation of the constitutional provision against gifts of public funds between agencies, as noted above.

12. Forms: If applicable, list any forms to be created, amended or repealed:

SECTION 3: FGC Staff Only

Date received:

FGC staff action:

- ☑ Accept - complete
- ☐ Reject - incomplete
- ☐ Reject - outside scope of FGC authority

Tracking Number 2019-001

Date petitioner was notified of receipt of petition and pending action: February 6, 2019

Meeting date for FGC consideration: April 17, 2019

FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition _____
  Tracking Number
- ☐ Granted for consideration of regulation change

Tracking Number: (2019-002)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, 1416 Ninth Street, Suite 1320, Sacramento, CA 95814 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

- **Person or organization requesting the change (Required)**

Name of primary contact person: Brian Gorrell

Address:

Telephone number:

Email address:

- **Rulemaking Authority (Required) -** Reference to the statutory or constitutional authority of the Commission to take the action requested: Sections 713, 1050 and 8587.1, Fish and Game Code. Reference: Sections 1050, 7852.2, 8046, 8589.5 8589.7, 9001 and 9001.5

- **Overview (Required) -** Summarize the proposed changes to regulations: Add additional "trap endoresment" opportunities to (Nearshore permit holders) who purchased (2) Nearshore permits to create (1)Nearshore Permit, in compliance with the limited entry permit reduction process, that ended last year.

- **Rationale (Required) -** Describe the problem and the reason for the proposed change:

The Problem: Fishing with hook and line only: Sea Lions, Harbor Seals, Sharks, By-Catch, Undersized Fish, and all other Marine Life, can be hooked on the hook, and or gear.

-Either: they bite the bait, or they eat the fish that has already eaten the bait, and been hooked.

- The fish that are coming up, are often injured or half eaten, do to predation while underwater. As soon as a fish is hooked, it becomes easy prey for other predators, regardless of its species or size.

- The best case scenario, is the fish only has a hole in its face from the hook. (This can be very extreme, as they try to tear themselves off of the hook, to the point they will tear their own jaw off)

- This is unnecessary, and cruel.

- Many fish that are eaten off the line or killed, are undersized, and/or bycatch, and possibly endangered, or protected species.

- Harbor Seals, Sea Lions, and other marine life are caught on the hooks and fishing gear, and often drag the fishing gear to shallower or unsafe waters.

- I live, and fish commercially, in the Monterey Bay Marine Sanctuary We have many protected, resting areas for Harbor Seals and Sea Lions. I have been told that their numbers are at an all time high right now.

- I am committed to sustainable fishing, and protecting species for future generations. This is not possible under the current “hook and line” restrictions I am currently forced to use.

-I come from a fishing family. We have always used traps, the rest of my family has trap endorsed permits. It is more efficient for the fisherman, and less destructive to other marine life.

As a direct result of the buy (2) Nearshore permits, and receive (1) Nearshore permit process:

-A prospective permitee who wanted to fish for nearshore species with traps, was required to have at least (1) of the permits he was to purchase have a trap endorsement already attached to the permit.

-Those of us who were among the last to be held under this permit process, found it very difficult to find a permit for sale, and even harder to find a second permit for sale. If you were lucky enough to find a permit for sale you bought it, trap endorsed or not.

-There were no trap endorsed permits for sale from 2011 until 2017 when the permit process changed.

-In 2011- It took me a full year to find my first permit, I bought it. Then, it took me over a year to find my second permit. I was already paying for my first one for a year and still unable to fish. When the second one came around I bought it. I had to start fishing ASAP to pay for my permit that I was already paying for. Unfortunately it was not “trap endorsed”

****-People with a “trap endorsed permit” were reluctant to separate their “endorsement” from their permit.**

-This would make their permit less valuable as a whole.

- If they already had a trap endorsement, and were fishing, then they were fishing with traps. If they sold their endorsement, they would have to change their fishing method, to a less productive method.

-Those fisherman who could afford to wait, wanted to wait, until the permit process changed to see what their permits would be worth.

Because of this, no one wanted to sell their trap endorsement.

The Department has been talking a lot about the future of fishing. The future generations, and sustainability of fisheries..

I am . I am part of the future generation. I care about sustainability, and the protection of species for future generations.

I am asking you to use your power to change, to help me do just this.

SECTION II: Optional Information

- **Date of Petition:** 1/24/2019
- **Category of Proposed Change**

☐ Sport Fishing

x Commercial Fishing

☐ Hunting

☐ Other, please specify:

- **The proposal is to:** (*To determine section number(s), see current year regulation booklet or https://govt.westlaw.com/calregs*)

☐ Amend Title 14 Section(s):1050, 7852.2, 8046, 8589.5, 8589.7, 9001 and 9001.5

☐ Add New Title 14 Section(s):

☐ Repeal Title 14 Section(s):

- **If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition** 2017-010

Or ☐ Not applicable.

- **Effective date**: If applicable, identify the desired effective date of the regulation. If the proposed change requires immediate implementation, explain the nature of the emergency: ASAP. Every time I go out fishing, I am killing, and injuring unintended species with my hooks. This is very serious, and requires immediate implementation to preserve life.

- **Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents: I attending 3 meeting last year, I spoke to the commission and the committee, and did a visual video presentation.

- **Economic or Fiscal Impacts:** Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing:

- CDFW revenue from trap endorsement renewal yearly

- Fishermen gain revenue, as traps usually catch and preserve the lives of more fish.

- live fish businesses would have healthier fish that are not wounded constantly.

-schools would be able to educate their students about why we choose different methods of fishing to preserve marine life.

-Marine life is unable to become hooked. Therefore preserving life.

-Fishermen will be able to catch more fish at once, with less loss and mortality, therefore allowing them to make less trips, help them to pay their rent/mortgage, and not become homeless.

- **Forms:** If applicable, list any forms to be created, amended or repealed:

SECTION 3: FGC Staff Only

Date received:

FGC staff action: 2019 JAN 24 AM 11:20

☑ Accept - complete

☐ Reject - incomplete

☐ Reject - outside scope of FGC authority

Tracking Number 2019-002

Date petitioner was notified of receipt of petition and pending action: February 6, 2019

Meeting date for FGC consideration: April 17, 2019

FGC action:

☐ Denied by FGC

☐ Denied - same as petition _____

Tracking Number

☐ Granted for consideration of regulation change

Tracking Number: (2019-003)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, 1416 Ninth Street, Suite 1320, Sacramento, CA 95814 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)
Name of primary contact person: Keith Rootsaert
Address:
Telephone number:
Email address:

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Sections 200 and 205

3. Overview (Required) - Summarize the proposed changes to regulations: See Proposed Emergency Regulatory Language for Monterey California

4. Rationale (Required) - Describe the problem and the reason for the proposed change: See Proposed Emergency Regulatory Language for Monterey California

SECTION II: Optional Information

5. Date of Petition: Jan 31, 2019

6. Category of Proposed Change
☒ Sport Fishing
☐ Commercial Fishing
☐ Hunting
☐ Other, please specify:

7. The proposal is to: (*To determine section number(s), see current year regulation booklet or https://govt.westlaw.com/calregs*)
☐ Amend Title 14 Section(s):
☒ Add New Title 14 Section(s): 29.12
☐ Repeal Title 14 Section(s):

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition
Or ☒ Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency: Emergency condition is best resolved in the spring

10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents: See Proposed Emergency Regulatory Language for Monterey California

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: See Proposed Emergency Regulatory Language for Monterey California

12. Forms: If applicable, list any forms to be created, amended or repealed:

n/a

SECTION 3: FGC Staff Only

Date received: Received by email on Wednesday, January 30, 2019 at 4:46 PM

FGC staff action:
☑ Accept - complete
☐ Reject - incomplete
☐ Reject - outside scope of FGC authority

Tracking Number 2019-003

Date petitioner was notified of receipt of petition and pending action: February 6, 2019

Meeting date for FGC consideration: April 17, 2019

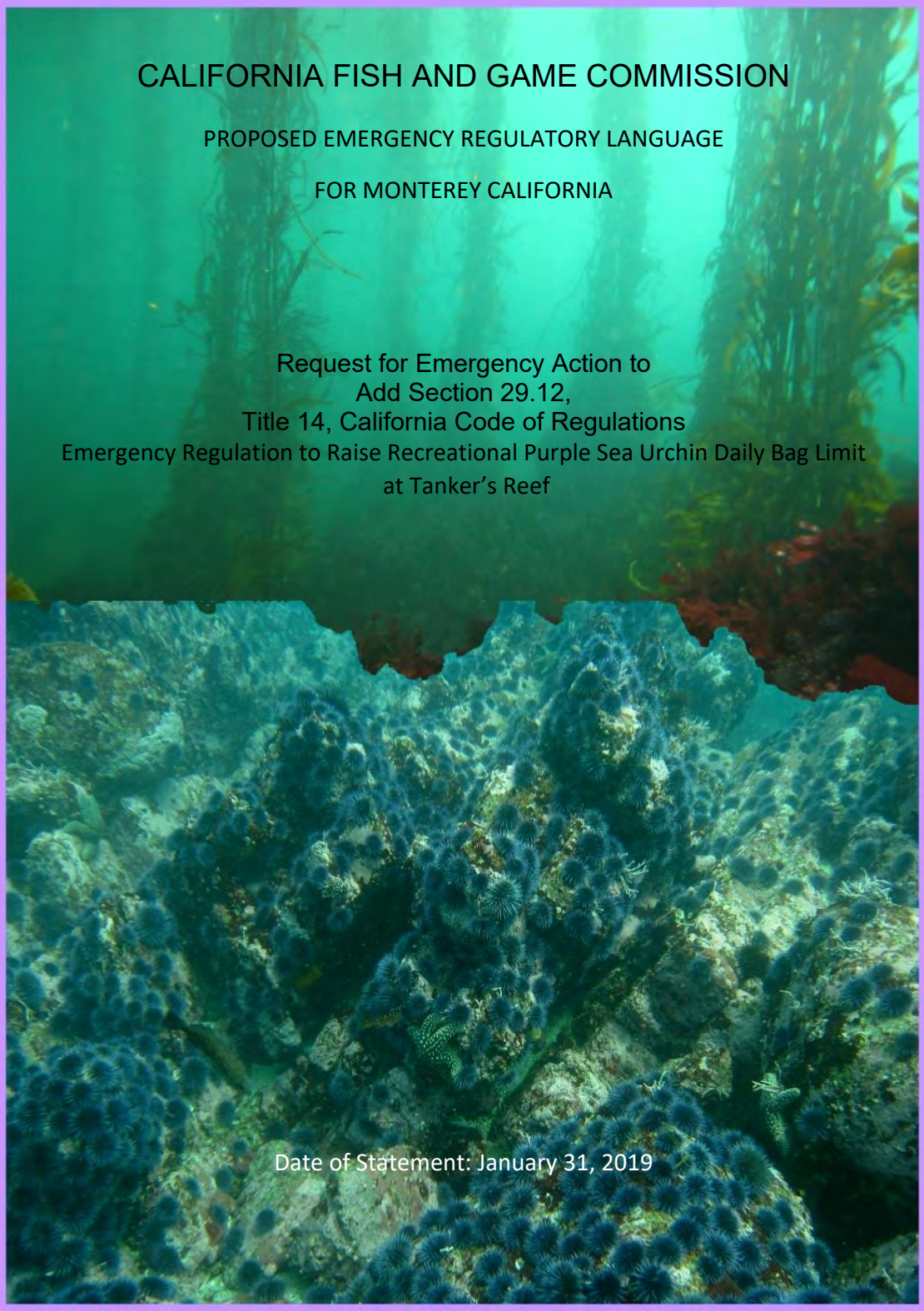
FGC action:
☐ Denied by FGC
☐ Denied - same as petition _____
Tracking Number
☐ Granted for consideration of regulation change

CALIFORNIA FISH AND GAME COMMISSION

PROPOSED EMERGENCY REGULATORY LANGUAGE

FOR MONTEREY CALIFORNIA

Request for Emergency Action to
Add Section 29.12,
Title 14, California Code of Regulations
Emergency Regulation to Raise Recreational Purple Sea Urchin Daily Bag Limit
at Tanker's Reef



Date of Statement: January 31, 2019

Statement of Facts Constituting the Need for Emergency Regulatory Language

A combination of unprecedented environmental and biological stressors has caused the giant kelp (*Macrocystis pyrifera*) forest, an important habitat for young of the year rockfish, to collapse. Today, the once abundant kelp is severely depleted due to openly grazing purple urchins (*Strongylocentrotus purpuratus*) dominating the nearshore ecosystem. Of the 16 sites that Reef Check California (RCCA) monitors around the Monterey Peninsula annually, 9 of those have become urchin barrens. Restoration is complicated by the nearly contiguous network of Marine Protected Areas that prohibit recreational take of urchins in areas that are accessible from shore and/or not exposed to the typical NW swell.

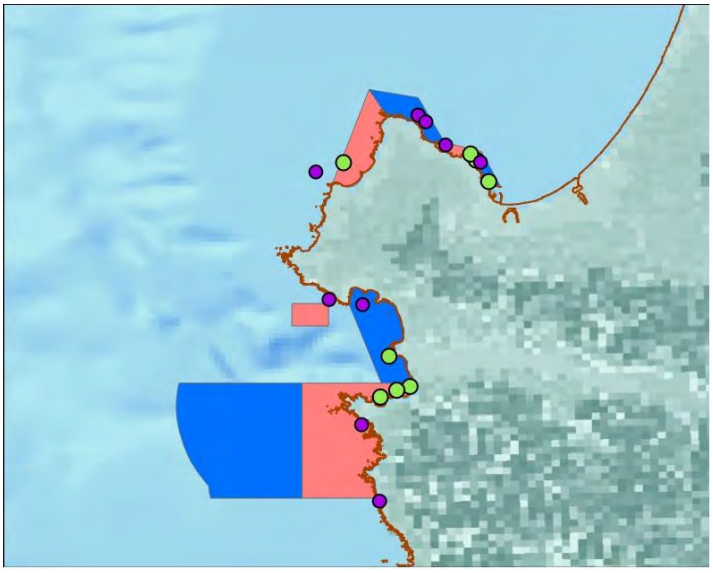


Figure 1: Reef Check California 2018 Monterey Survey Sites. Purple indicates urchin barrens and green indicates non-urchin barrens. Blue areas are MPA Reserves and orange areas are MPA Conservation Areas

The alternative state of urchin dominant ecosystems (Karen Filbee-Dexter, 2014) has reduced the normally thick and robust kelp forest to a thin nearshore canopy that is further reduced annually as urchins recruit to hard substrate and kelp recruits are eaten by starving urchins. Over the winter the kelp canopy recedes due to reduced daylight and winter storms, but the openly grazing urchins survive the winter and devour kelp recruits in the spring. Since 2015 in Monterey Bay, there has been a steady loss of kelp forest and increased urchin barren conditions progressing from Point Pinos eastward towards Cannery Row.

Central Coast Kelp Restoration Efforts

RCCA and Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) has petitioned and received permission to perform an experiment in the Pacific Grove Gardens Marine Conservation Area (State of California – Department of Fish and Wildlife, SC-005486) to manipulate urchin densities to determine at what urchin density will giant kelp successfully recruit and form a kelp canopy. This experiment is being performed by RCCA in partnership with the Monterey Bay Aquarium (MBA) and the Monterey Abalone Company (MAC). If the experiment is successful, it should inform a larger scale removal experiment to determine if algae recruitment and subsequent rock fish recruitment is possible in the MPAs. This will align with the goals of the Marine Life Protection Act to ensure species diversity in the nearshore nursery that, by design, sustain fish populations along the unprotected remaining 86% of the California coast (Council, 2018).

The other question that is particularly relevant to this type of recovery effort is if recreational SCUBA and freedivers can be successful in persistent efforts to reduce urchin densities. Recreational divers on the north coast have shown great interest in this activity and 75 - 100 divers have participated in bi-monthly events since the summer of 2018. The Monterey Bay National Marine Sanctuary Advisory

Council conducted a survey of divers and found that 92% of divers are in favor of and would participate in efforts to reduce urchin densities (MBNMSAC, 2018). If north coast volunteer diver turnout in the difficult to access and sparsely populated Sonoma and Mendocino counties is an indication, we should expect 100-200 divers to participate in removal events in Monterey.

The dive site we propose for this action is called Tanker's Reef (aka: Tanker Reef) in Monterey and is located east of Municipal Wharf #2 in Monterey and it has historically been a *Macrocystis* kelp forest. This area is not in a Marine Protected Area. The reef is atypical from other reefs around the Monterey Peninsula because of the low-lying shale substrate. This area became an urchin barren in 2016. Bull kelp recruited on a portion of the reef in 2017, but was washed ashore that winter. Kelp did not recruit on this reef in 2018.

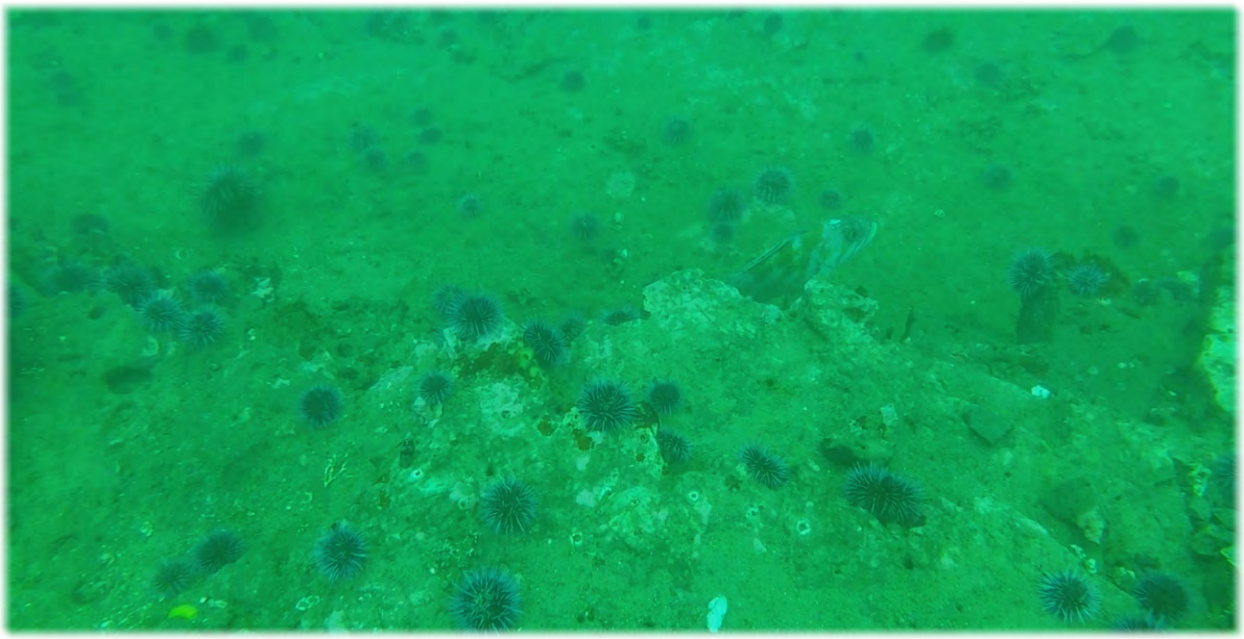


Figure 2: Tanker's Reef Summer of 2018 - Photo by Andrew Kim

Emergency Regulatory Language and Justification

Due to the thirty-five (35) sea urchins per-person daily bag limit (14 CCR § 29.05(a)) there is not a practical ability for recreational divers to remove urchins efficiently. Similar to what was proposed and approved for recreational divers in Sonoma and Mendocino counties under Emergency Regulatory Language 29.11 and subsequent Proposed Regulatory Language 29.06 applicable to Sonoma, Mendocino, Humboldt and possibly Del Norte counties, we propose that the Fish and Game Commission adopt Emergency Regulatory Language to allow recreational divers to remove 40 gallons of purple urchins per person daily at this singular reef in Monterey Bay. We also seek a no-possession limit to allow for better utilization and easier transportation to where they can be disposed of in mass. The suggested text is as follows:

Emergency Regulatory Language
Section 29.12, Title 14, CCR, is added as follows:

§ 29.12. Purple Sea Urchin

(a) The daily bag limit for purple sea urchin taken while skin or SCUBA diving at Tanker's Reef in Monterey County is forty (40) gallons.
(b) Tanker's Reef is defined as the area between the following coordinates:
36°36'4.54"N, 121°53'13.47"W;
36°36'19.70"N, 121°53'13.45"W;
36°36'42.67"N, 121°52'20.15"W; and
36°36'20.33"N, 121°52'4.06"W.
(c) There is no possession limit for purple sea urchin.

Authority cited: Sections 200, 205 and 399, Fish and Game Code.
Reference: Sections 200, 205 and 399, Fish and Game Code.

"To determine whether an emergency exists, the Department considered the following factors: The magnitude of potential harm; the existence of a crisis situation; the immediacy of the need; and whether the anticipation of harm has a basis firmer than simple speculation. All available information points to a highly volatile and adverse condition for [Monterey] kelp forests and the resident nearshore fishery, and extraordinary measures must be taken immediately to help restore important but vulnerable habitats" (CDFW, 2018) .

Tanker's Reef Uniquely Qualified

Tanker's Reef has excellent characteristics making it an ideal candidate for removal efforts. The site is just offshore from a long wide sandy beach, parking is available within easy walking distance and there are not nearshore tidepools or protected areas that might be disturbed or trampled by increased use. It is immediately adjacent to the Monterey Municipal Marina and is at the south end of the bay that is normally in the wave shadow of Point Pinos and also behind the San Carlos Breakwater jetty. This area is diveable in all but the most severe conditions from boat or from shore, normally 50 weeks out of the year. The urchin barren is in only 20 to 40 feet of depth which makes it an easier and safer dive for task loaded recreational divers. Because the reef is surrounded by sand, and urchins do not tend to traverse sand, the area, once cleared, should not be repopulated quickly by migrating urchins from the nearest adjacent reef over half a mile away.

Figure 3: "Tanker Reef" September 24, 2005 - Photo by Kawika Chetron

The dive community is eager to work on an urchin removal project (MBNMSAC, 2018) as they have watched in horror as their favorite dive sites in Monterey and Carmel go from lush kelp forests with diversity to urchin barrens. Allowing urchin removal in this limited area would be beneficial to giving the divers a way to improve the diving conditions they enjoy. Kelp recruitment occurs in the spring and if this proposal is enacted urchin removal events would be planned for April and May of 2019.

Planned Urchin Removal Activities Means and Methods

Before any urchin removal event occurs, the area of the urchin barren will be accurately mapped by GPS and RCCA will perform a site survey and a gonad index (GI) test. Taking cues from north coast urchin removal events, large fishing vessel(s) will be anchored on the site. Recreational divers will meet on the beach and be provided a briefing of best methods of removal and proper identification of urchin species. A shore marshal shall assign each diver a number and record each diver's GO ID and contact information.

Urchin removal will be accomplished by directing divers to concentrate their efforts around surface marker buoys and rake them into large gear bags. When a bag is full, divers will surface with them and the bags will be handed over to non-motorized kayak watercraft. Monterey Bay Kayaks is located at this site and over 100 kayaks are available for rent. The kayakers will deliver the bags to the awaiting fishing boat(s), who will record the diver number and the empty bags will be returned to the kayak, who will make them available again to the divers. If a diver reaches the bag limit, they will be told to stop collecting urchins.

Figure 4: Reef Check diver David Chervin hands off urchins to kayak shuttle, Ocean Cove, CA, May 24, 2018 - Photo by John Burgess, The Press Democrat

When the event is over or there is a break in the activity, the fishing boat(s) shall dispose of the urchins. There is a token operated 3-ton public hoist at the Monterey Municipal Harbor for off-loading onto trucks. On the north coast the urchins were delivered to a composter and we will find a suitable composter in agriculturally rich Monterey County that will accept and use them. These removal events will be repeated until the reef urchin density is sustained at less than 2 urchins per square meter (The Bay Foundation, 2015). After the removal events RCCA will again survey the site to determine the effectiveness of the removal effort and the resulting fish and invertebrate assemblies.

Because the site is easily accessible and in relatively shallow water, certified recreational divers of all abilities will be able to participate. The dive community wants to make this a safe event for all involved and we will make sure that CA State Parks and Recreation lifeguards, the Monterey Fire Department, and certified instructors are on site and on the water. CDFW marine biologists Dr. Cynthia Catton and Dr. Laura Rogers-Bennett will be invited to perform GI tests and collect data on the removal activity. We will ask Robert Puccinelli, Captain, Law Enforcement Division to be on-hand to ensure that the laws are properly explained and answer any questions divers may have. The Monterey Bay National Marine Sanctuary has expressed their willingness to work with and coordinate with the CDFW (Sanctuary, April 2018) and they shall be consulted, and we will obtain a sanctuary permit. An emphasis will be placed on educating divers on proper methods of removal that are non-destructive to the substrate and that culling or taking urchins anywhere in Monterey county except this site will not only be ineffective, but unlawful. Because we are sharing a common pool of divers, we will coordinate and deconflict with Josh Russo and north coast removal events.

Unlike the Reef Check SCP work where only RCCA certified divers may participate, and because the State is collecting fishing license fees and the divers are all certified by a nationally recognized diving certification agency, liability will rest with individual divers exercising their fishing license and not a diving organization. This will allow non-scientific recreational divers of all abilities to participate and will promote diving safety, scientific diving, sustainable fishing, and marine conservation. The events will be publicly held and be accessible for educational purposes and media reporting.

Tanker's Reef Specific Description

The area of Tanker's Reef to be considered and the limits of this proposed emergency regulatory language action is (Earth, 2019):

1. Starting at a point due south of the yellow can #3 marking the NE corner of the east mooring field of the Monterey Municipal Wharf #2 and the mean high tide line called "Corner 1"at 36°36'4.54"N, 121°53'13.47"W
2. Proceeding 1,532 feet at a heading of 0 degrees to yellow can #3 marking the NE corner of the east mooring field of the Monterey Municipal Wharf #2, a point called "Corner 2" at 36°36'19.70"N, 121°53'13.45"W
3. Proceeding at a heading of 118 degrees a distance of 4,932 feet to a point called "Corner 3" at 36°36'42.67"N, 121°52'20.15"W
4. Proceeding at a heading of 30 degrees a distance of 2,619 feet to a point called "Corner 4" at the westmost corner of the Ocean Harbor House Condominiums seawall at 36°36'20.33"N, 121°52'4.06"W
5. Returning 5,887 feet to the starting point along the mean high tide water line.

An area encompassing approximately .33 square nautical miles or 283 acres.

Figure 5: Area of Emergency Regulation Change. Coordinates available as Tanker's Reef.kmz

Impacts:

The Monterey County Convention and Visitor's Bureau regularly conducts surveys of hotel guests and tourists and the number one reason people come to Monterey county is "Scenic Beauty" (Monterey County Convention and Visitors Bureau, 2017). Tourism in Monterey County injected $2.85 billion into the local economy in 2018. The adverse economic impact due to lack of kelp forests, collapse of the nearshore fishery, and loss of habitat for the endangered Southern Sea Otter (*Enhydra lutris nereis*) population would be obvious to even a casual observer eating lunch on the wharf or visiting the Monterey Bay Aquarium and looking out from the back deck. While the north coast abalone fishery is valued at $44 million, the larger population and visiting tourism in Monterey means the economic impact to this area due to inaction would probably be far greater.

Figure 6: Photo: The Monterey County Convention and Visitors Bureau

Furthermore, allowing recreational divers to participate in removal activities will be of economic value to Monterey as divers come and stay in hotels, eat meals, and purchase diving equipment from dive shops. An abundant and robust kelp forest will ensure that divers have a protected dive site where they can experience an easily accessible kelp forest ecosystem with plentiful and diverse rockfish populations. This will provide a viable dive site for the displaced north coast SCUBA diving market in Monterey. The attraction of Tanker's Reef for diving will also reduce diving and fishing pressure on other popular dive sites that are already under threat by urchin dominance. By spreading the word and recruiting divers interested in this activity, more divers may become interested in furthering their conservation efforts on the north coast, adding to the available diving pool for Josh Russo's events north of San Francisco.

Collection of urchins will cultivate interest in urchins as a food source. There are urchin industries forming to collect, rehabilitate, and harvest urchins as uni, a type of sushi. There are numerous collegiate institutions in the Monterey Bay area: UCSC, CSUMB, Hopkins Marine Station, and Moss Landing Marine Labs that can be of assistance in researching "Urchinomics". Already on display at the Eighth Annual Whalefest 2018 event in Monterey were ROVs capable of mapping and/or removing urchins. Looking forward, by developing ROV technology, offshoots for other uses can be expanded upon such as golf ball pollution, whale entanglement, and marine debris removal.

The Monterey Abalone Company has been farming red abalone on the commercial wharf for over 30 years, but with the lack of kelp in Monterey, they are unable to harvest enough kelp locally to feed and grow the abs hanging in cages below the wharf (Seavy, 2019). A plentiful and mature kelp forest adjacent to the wharf would be beneficial to their farmed abalone business and ensure that the abalone delicacy is still available to consumers especially since the abalone fishery on the north coast is closed until 2021 and the SoCal green abalone population recovery is just beginning while the demand for abalone is increasing.

Figure 7: Monterey Abalone Company, Municipal Wharf #2, Monterey California - Photo: Keith Rootsaert

The continued presence of a *Macrocystis* forest in Monterey is essential for a spore bank to seed adjacent areas should the urchin dominant state return to a kelp dominated ecosystem due to urchin disease or other natural means. In Orange County, the lack of kelp spores made the reefs difficult to recover so kelp was grown in labs and was planted by 130 volunteer divers. This artificial method could be avoided if existing kelp forests are partially preserved.

Regulatory Language Amendment vs New Emergency Regulatory Language

We had considered petitioning the F&GC to consider this proposed Emergency Regulatory Action as an amendment to the permanent regulatory language change 29.06 that is on the F&GC agenda for the February 6th F&GC meeting. However, the timing is bad and to modify that language to include the site in Monterey would delay adoption and the effective date for the 29.06 regulatory language change. That delay would adversely affect Josh Russo's removal events which would return to non-emergency regulatory language on February 7th (35 urchin bag limit), until the amended language would be adopted and enacted in July. That is why we are proposing a new stand-alone emergency regulatory language so that both north coast and central coast kelp restoration projects can commence when kelp recruits in April 2019.

The Emergency Regulatory Language Action is appropriate because the urchin barren condition is an emergency. Our hope is that kelp can be successfully restored within the legal framework of California Fish and Game Regulations.

Respectfully submitted,

Keith Rootsaert, Reef Check California, MBNMSAC alternate diver representative
Art Seavey, Monterey Abalone Company
Trevor Fay, Monterey Abalone Company

References

CDFW. (2018). *FINDING OF EMERGENCY AND STATEMENT OF PROPOSED EMERGENCY REGULATORY ACTION.*

Council, C. C. (2018). *Marine Protected Area Monitoring Action Plan.*

Earth, G. (2019). *Tanker's Reef.kmz.*

Karen Filbee-Dexter, R. E. (2014). Sea urchin barrens as alternative stable states of collapsed kelp ecosystems. *MARINE ECOLOGY PROGRESS SERIES*, 4-6.

MBNMSAC. (2018). *Diver Survey.*

Monterey County Convention and Visitors Bureau. (2017). *2016 Monterey County Visitor Profile.*

Sanctuary, M. B. (April 2018). *Sanctuary Advisory Council Resolution .*

Seavy, A. (2019). *Perspective on Urchin Removal.*

State of California – Department of Fish and Wildlife. (SC-005486). *2018 SCIENTIFIC COLLECTING PERMIT APPLICATION.* DFW 1379 (REV. 10/31/17) Page 4.

The Bay Foundation. (2015). *Palos Verdes Kelp Forest Restoration Project 2015 Annual Report.*

CALIFORNIA FISH AND GAME COMMISSION
REQUESTS FOR NON-REGULATORY ACTION, received by 12 p.m. on Feb 1, 2019
Revised 4/12/2019

FGC - California Fish and Game Commission **DFW** - California Department of Fish and Wildlife **WRC** - Wildlife Resources Committee **MRC** - Marine Resources Committee

Date Received	Name of Petitioner	Subject of Request	Short Description	FGC Decision	Staff / DFW Recommendations
1/15/2019	Gary Kirkland	Sell the ocean in divided lots	Request for FGC to lobby the Legislature and Congress to survey the ocean and sell the ocean in divided lots to the highest bidders.	**Receipt: 2/6/2019** **Action scheduled: 4/17/2019**	No action recommended.
1/23/2019	Chi Ma	Free study guide for falconry exam	Request to create a free study guide for the DFW falconry exam.	**Receipt: 2/6/2019** **Action scheduled: 4/17/2019**	The suggestion has been forwarded to DFW. No further action recommended.
1/28/2019	John Finger Hog Island Oyster Company	Amendment of leases in Tomales Bay	Request to amend leases related to four state tideland parcels in Tomales Bay (M-430-10, M-430-11, M-430-12, and M-430-15).	**Receipt: 2/6/2019** **Action scheduled: 4/17/2019**	Request will be scheduled for consideration once environmental review and review of request by DFW is completed.

R3

California Hunting and Fishing

Recruitment, Retention and Reactivation Action Plan

A Path for Protecting the Future of Outdoor Activities and Conservation in California

JANUARY 2019

Contents

From the Director

In partnership with the hunting and fishing community, the California Department of Fish and Wildlife (CDFW) is excited to present this action plan focused on increasing recruitment, retention and reactivation of California hunters and anglers.

Although California is home to some of the nation's most diverse hunting and fishing opportunities, participation in these activities has declined significantly since the 1970s and 1980s. Hunters and anglers help sustain a multi-billion-dollar outdoor recreation industry and provide some of the primary funding to CDFW. The decline in participation poses an ever-increasing threat to wildlife conservation, our state's long-standing hunting and fishing heritage, and Californians' connection to the outdoors in general. One of the most visited, but ultimately unresolved issues is how to provide CDFW with sustainable financing.

At CDFW, we are acutely aware of the issue and are dedicated to increasing hunting and angling participation in the Golden State. We cannot do this alone. We need the recreational fishing and hunting communities, our state and federal agency partners and others to continue working with us as we move forward together to address the barriers and opportunities to hunting and fishing in this state.

With an intended audience of fishing and hunting stakeholders, CDFW staff, Tribes and the Legislature, this action plan outlines a macro-level framework rather than specifying micro-level actions. This framework will help us think differently as a collective group—to change the historical dynamics that we've repeated for many years. For example, much of the work on hunter and angler recruitment has had great intentions but has been based on assumptions rather than data. By zooming out to a macro-level approach, we can initiate a well-informed implementation plan where we can learn as a group, identify and pool resources, and achieve mutually beneficial results through specific micro-level strategic actions.

CDFW has put staffing resources behind this effort, the fishing and hunting community has rallied, and we are now poised to tackle the challenges before us.

With more and more competing interests vying for the attention of Californians and those who visit this great state, there has never been a more crucial time to support and encourage people to get outdoors and enjoy California's wild places.

Charlton H. Bonham
Director, CDFW

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The California Department of Fish and Wildlife Hunting and Fishing Recruitment, Retention and Reactivation Program (R3) aims to increase statewide hunting and fishing participation by collaborating with diverse stakeholders to transform barriers into opportunities.

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Introduction

California is home to some of the nation's most diverse hunting, fishing and outdoor recreation opportunities. With millions of acres of public land, thousands of miles of rivers and streams, 1,100 miles of ocean coastline and more than 3,000 lakes and reservoirs, California provides many opportunities to recreate outdoors and harvest wild protein sources. Declining participation in fishing and hunting in California since the 1970s is due to multiple cultural, societal and demographic changes. The decline in these activities has occurred over several decades and contributes to an ever-increasing threat to the conservation and management of our natural resources.

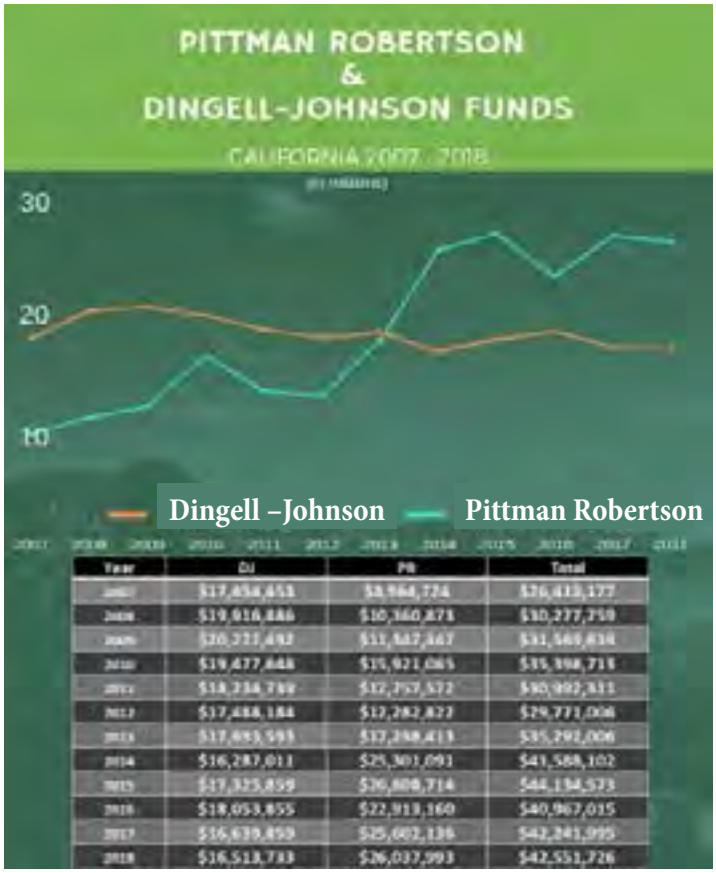
Hunters and anglers help manage our natural resources and wildlife by managing wildlife populations to maintain ecological and biological diversity, participating in wildlife surveys for scientific data collection, and reporting wildlife crimes like poaching. Hunters and anglers also fund a significant percentage of conservation work through their economic contributions. As revenue from these groups declines, there is a direct and measurable effect on California's ability to conserve its fish and wildlife and other natural resources.

The Federal Aid in Wildlife Restoration Act, also known as the Pittman-Robertson Act of 1937, is an excise tax on the sale of firearms, ammunition and archery equipment. Hunters self-imposed this tax to generate funding for con-

servation work. As of 2018, more than $12 billion has been distributed across the nation through this federal program. In California, it has generated more than $402 million since its inception. Similarly, the Federal Aid in Sport Fish Restoration Act, also known as the Dingell-Johnson Act of 1950, collects excise taxes on sportfishing tackle, fish finders, and trolling motors, and motorboat and small engine fuel. It also collects import duties on tackle, yachts and pleasure crafts. More than $14.9 billion has been raised through this federal program since 1951 with over $467 million of that being distributed to California. Revenue from both excise taxes are distributed to state wildlife agencies and directly fund critical conservation efforts such as research, management and education. In 2017, California received $42.2 million from both acts (CDFW, 2018). From 2013-2017, revenue generated from the Pitmann Roberson Act abnormally spiked due to a short-term increase in firearm sales. This revenue spike helped generate a temporary abundance of conservation funding. However, economists expect these national trends to decline in the coming years. It is unclear at this time if the increased purchasing trends will continue in California.

According to the 2016 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, 14 percent of Americans aged 16 years and older fished, 4 percent hunted, and 14 percent participated in the shooting sports. In California, sales of annual fishing licenses have declined 50 percent since 1980 and annual hunting license sales have decreased 65 percent since 1970 (USFWS, 2016). In 2017, the total number of hunters per capita in California was about 1 percent, the second lowest in the United States. Likewise, just under 5 percent of the California population bought a fishing license. Despite the decline in overall license sales, California's hunter and anglers still generated more than $91 million in 2017 through the sale of recreational hunting and fishing licenses, tags and stamps (CDFW, 2018). The outdoor recreation economy in California is significant and preserving that economy is vital to rural communities, California businesses, wildlife and habitat conservation, public lands and the health and well-being of Californians.

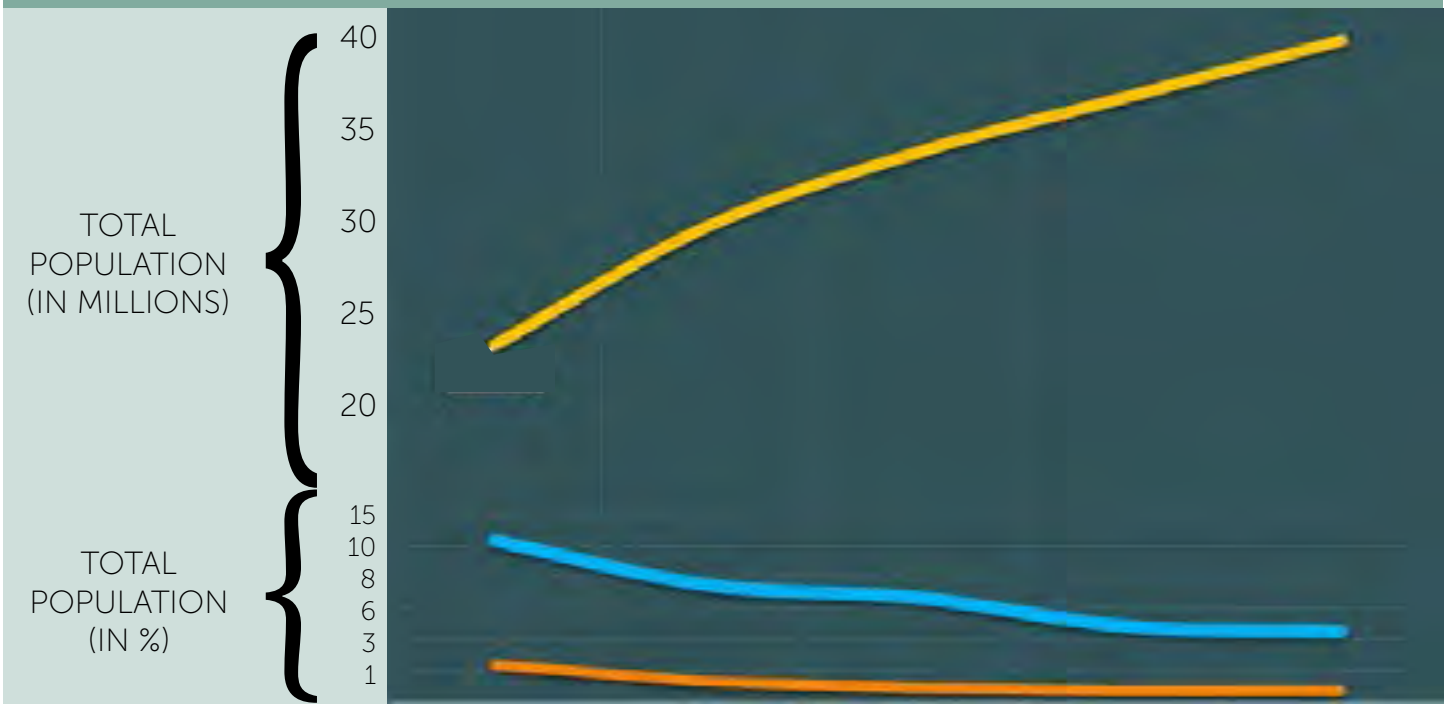
Through their participation in hunting and fishing, Californians can help keep the American legacy of public land conservation alive and fund the ever-growing need to manage our wildlands and wildlife in the face of human encroachment and urbanization, wildlife diseases, a changing climate and other challenges. The funds provided to state fish and wildlife agen-



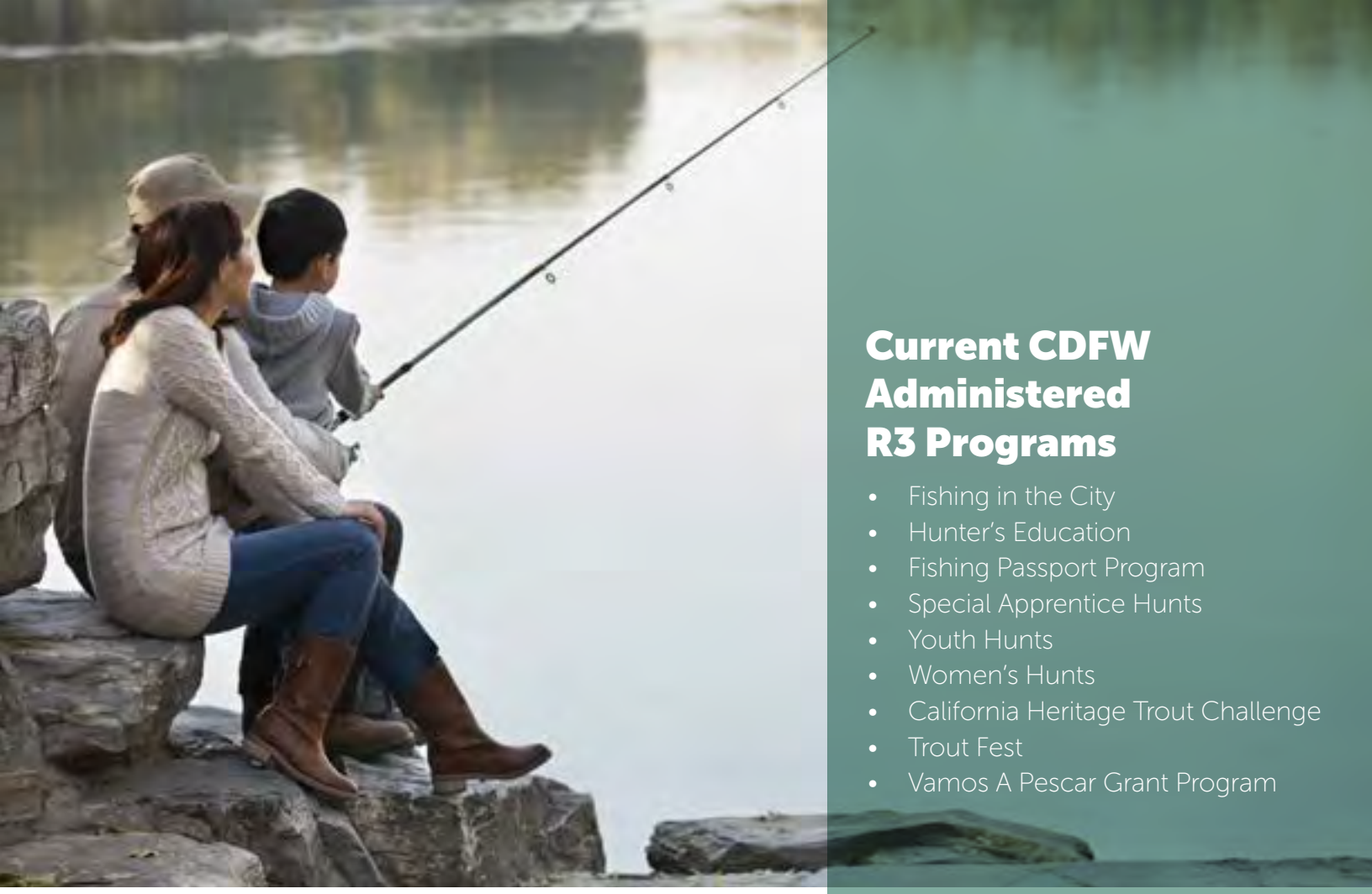
cies from the sales of hunting and fishing licenses, tags, validations and report cards are critical. Historically these funds have provided 40 percent of CDFW's budget (CDFW, 2018). With the decrease of hunting and fishing revenue and the increase of CDFW responsibilities, only 21 percent of CDFW's overall budget is funded from these sources today. This amount could increase and meet or exceed historical revenue figures if more people participated in fishing and hunting activities. The current decline in budgetary support from hunting and fishing puts CDFW at risk to adequately fund fish and wildlife conservation projects, wildlife law enforcement, hunter's education, hunting, fishing and public access to wilderness and wildlife management areas for other types of outdoor recreation.

For decades, CDFW has administered programs aimed at providing hunting and fishing access and opportunities. Some examples include: Fishing in the City events, hunter education courses, the Fishing Passport Program, special youth hunting opportunities, the California Heritage Trout Challenge and others. Though most of these programs are open to everyone, some solely focus on youth. These efforts, although successful in many aspects, have been insufficient to stop or reverse the decline in participation or preserve the cultural and conservation benefits of hunting and fishing. CDFW stakeholders and leaders in the conservation community, such as Non-Governmental Organizations (NGOs) and industry leaders, have shown a willingness to help the situation for many years through special programs, proposed legislation and other coalition efforts statewide. These diverse stakeholders and CDFW have now joined together in a collaborative effort, called the "R3 program," to solve the state's decline in angling and hunting participation, access and opportunity.

Hunting & Fishing Licenses vs. California Total Population



Percentage of Anglers	10.39%	7.54%	6.71%	4.85%	4.53%
Percentage of Hunters	2.34%	1.28%	0.94%	0.77%	0.70%
Total Population (in millions)	24	30	34	37	40



Current CDFW Administered R3 Programs

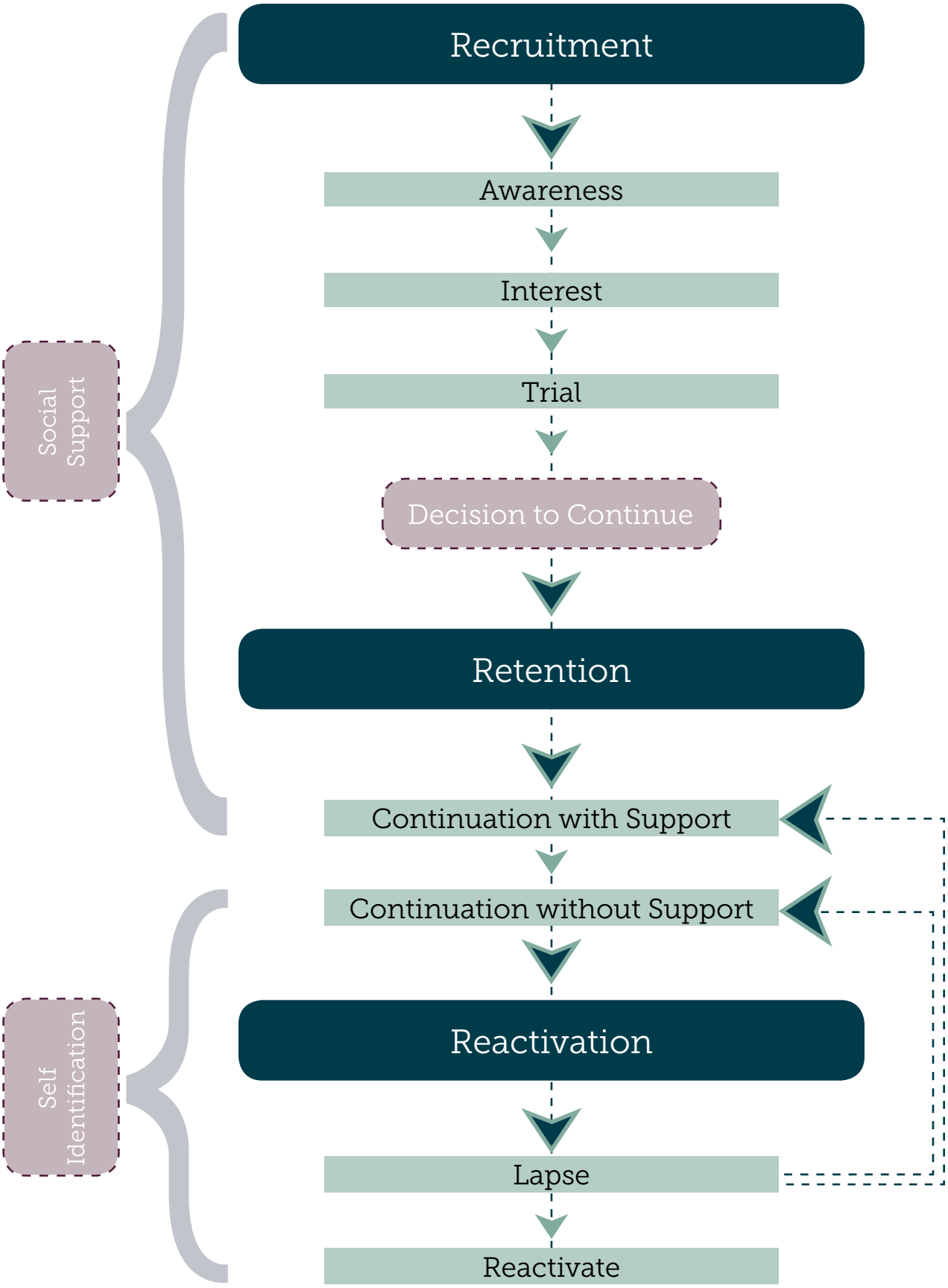
- Fishing in the City
- Hunter's Education
- Fishing Passport Program
- Special Apprentice Hunts
- Youth Hunts
- Women's Hunts
- California Heritage Trout Challenge
- Trout Fest
- Vamos A Pescar Grant Program

What is R3?

The Recruitment, Retention and Reactivation of hunters and anglers (R3), is a nationwide movement, "focused on strategically increasing participation in hunting, angling and the shooting sports" (CAHSS, 2017). The California R3 Program grew out of national R3 attention over the last decade, including research presented in the National Hunting and Shooting Sports Action Plan (2016), a collaboration between the Council to Advance Hunting and Shooting Sports (CAHSS) and the Wildlife Management Institute. In 2015, the Recreational Boating and Fishing Foundation (RBFF) also introduced a national R3 program to support states in initiatives and strategies to increase fishing license and boat registration revenues. The R3 movement encompasses a diverse range of actions from the hunting, fishing and conservation NGO stakeholders executing specific programmatic level actions all the way to state agencies developing statewide strategic plans.

National R3 efforts focus on using the Outdoor Recreation Adoption Model (ORAM) which is based on over 50 years of social science research. The ORAM illustrates the process an individual will take as they transition from non-participant to a participant in hunting, fishing and the shooting sports. Starting from recruitment activities (e.g. awareness, interest and trial) and then moving into retention activities (e.g. deciding to continue participating with and without help), this model highlights the significant link between recruitment, retention and reactivation. For example, social support is having assistance and reinforcement from other people along an individual's journey, which helps ensure they are retained as participants and increases their likelihood of reactivation if they lapse.

Outdoor Recreation Adoption Model



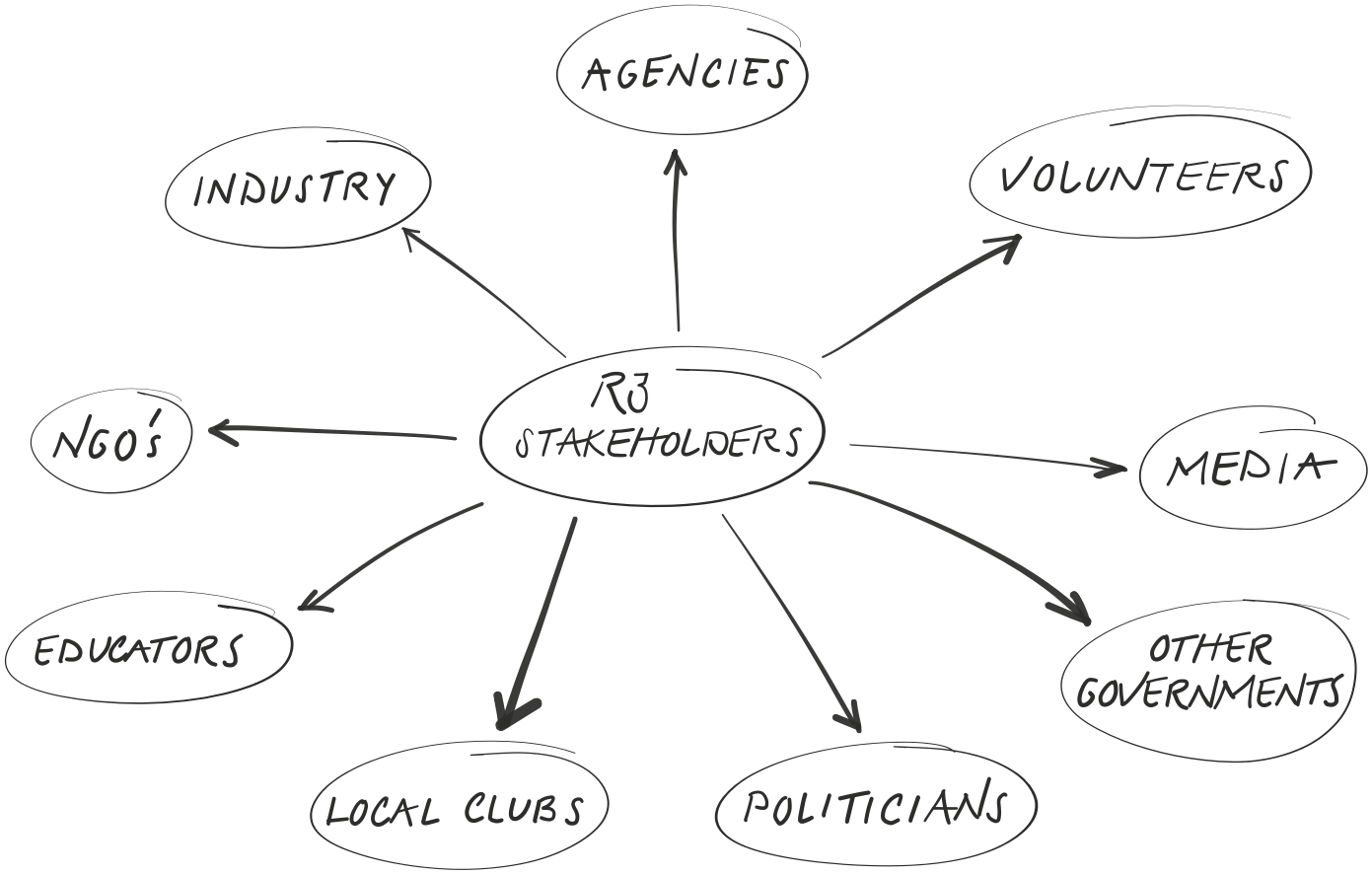
Reversing the Trend

To address the continued decline in fishing and hunting participation, CDFW, along with other agencies, NGOs, Tribes, and members of the hunting and fishing community are committed to creating a statewide R3 program to improve recruitment, retention and reactivation of hunters and anglers. Together, with national leaders in R3, CDFW has moved forward with creating the very first statewide California R3 program.

In 2017, CDFW began the first phase of the statewide R3 program and formed an internal executive-level R3 Task Force. The CDFW R3 Task Force began working with RBFF, CAHSS, the California Sportfishing League and the California Hunting and Conservation Coalition. In early 2018, the R3 Task Force created an internal R3 Team and hired a full-time statewide R3 coordinator to oversee and coordinate the statewide California R3 efforts. The R3 Team held meetings to engage the fishing and hunting stakeholder community [See, Appendix II]. The goals of these meetings were to identify barriers to participation and to solicit ideas on how best to develop a plan to address these barriers in California.

After these initial meetings, eight R3 subcommittees were formed comprised of CDFW staff and fishing and hunting community stakeholders. The subcommittees convened over several months to discuss the state of fishing and hunting in California. The subcommittees evaluated and explored aspects of R3 specific to California. From this process, this California R3 Action Plan was created and is the final document in successfully completing phase one of the CDFW R3 program.

This action plan will serve as the strategic framework for the development and implementation of a statewide California R3 program to improve recruitment, retention and reactivation rates of hunters and anglers. Reversing the trend in declining participation rates is important for California to help conserve and manage its natural resources and protect outdoor recreation, fishing and hunting activities for the future. CDFW cannot accomplish this task alone and is asking for full participation, pooled resources and a commitment from all stakeholders to fully execute the statewide R3 program successfully.



Challenges to Developing a Statewide R3 Program in California

While many specific challenges to R3 work will be addressed in this plan, there are three over-arching challenges that are consistent throughout the national R3 framework that effect California: (1) lack of a cohesive national effort, (2) no historical data collection, methodology or metrics for evaluation, and (3) lack of institutional knowledge from translating historical data into useful knowledge as it pertains to hunting and fishing participation.

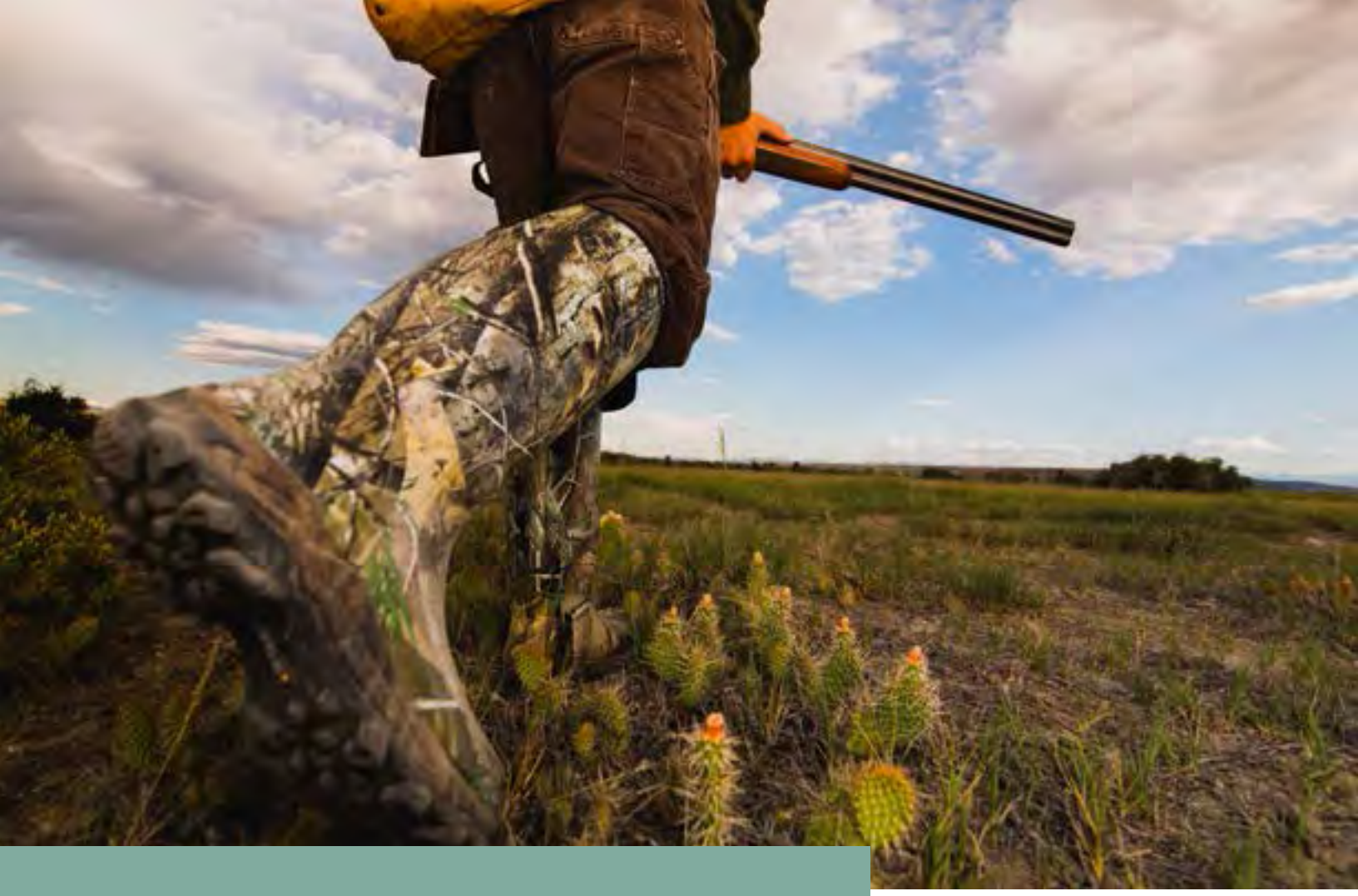
National R3 efforts have historically been a non-cohesive effort with individual groups attempting to address the challenges they witnessed through their own membership and participation declines. Many of those efforts did not yield the expected results. Additionally, very few measurements of evaluation have been implemented to assess the R3 effort effectiveness or to intervene when efforts underperformed or failed. It has not been until recently that these failures have been thoughtfully scrutinized with a cohesive and organized effort nationwide. Organizations and agencies who were implementing R3 programing lacked the capacity to translate historical trends into usable data, or institutional knowledge, to curb the decline in participation.

One of the main themes that has risen from the work of the broader R3 efforts has been the importance of understanding the difference between recruitment, retention and reactivation and how to address each. The progression for adopting fishing and hunting as an activity and then as a lifestyle, was not understood and is still not fully understood or widely implemented. Addressing barriers to participation for lapsed and existing hunters and anglers has been virtually non-existent in the R3 landscape. CAHSS (2016), writes,

Prior to 2009, efforts to recruit, retain, or reactivate (R3) hunters, anglers, and recreational shooters were generally designed and implemented with very little consideration given to: a) identifying the audiences most in need of an R3 effort, b) the specific type of content or experiences a target audience needed before adopting the activity being promoted, or c) an evaluation system capable of documenting the effectiveness of the R3 effort being delivered.

If the challenges that exist are to be addressed effectively, it requires an entirely new approach contingent on an in-depth and innovative education process. This education process is two-fold. First, in addition to the traditional hunter education and community outreach efforts that have been available for decades, this new education process must reach not only potential, lapsed and current hunting and fishing participants across the state, but become socially relevant and inclusive. Secondly, this education process must challenge existing assumptions and stereotypes by educating CDFW, stakeholders and community members about potential, lapsed and current participants, their barriers and interests. Both educational processes necessitate ways to measure not only quantitative data but also qualitative data about the human experience. Creating spaces where both traditional hunting and fishing identities are celebrated, and new identities, inclusiveness, and difference are embraced is imperative to the future of hunting and fishing in California.

“Creating spaces where both traditional hunting and fishing identities are celebrated, and new identities, inclusiveness, and difference are embraced is imperative to the future of hunting and fishing in California.”



Action Plan Design

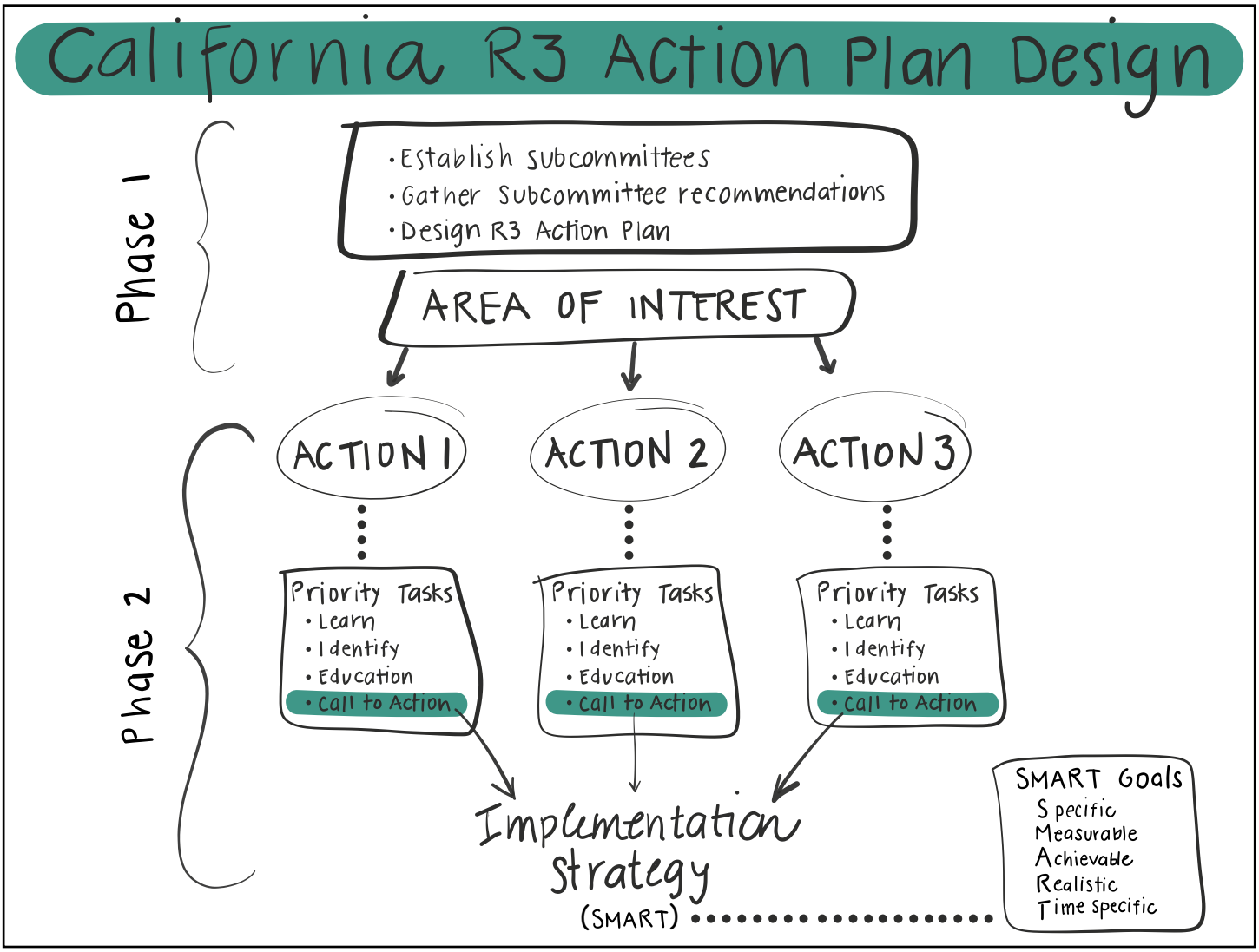
This California R3 action plan serves as a macro-level adaptive, strategic framework to address the decline in hunting and fishing in California. This action plan paves a path for creating and executing phase two of the statewide R3 program, a micro-level implementation strategy, with efficacy, relevancy and efficiency.

This action plan will assist in tackling the three main challenges of R3 work – lack of a cohesive effort, data and institutional knowledge. It calls for a statewide effort among all participating stakeholders, initiates the creation of metrics for evaluation and data collection and helps establish and use institutional knowledge by establishing documented processes for the future.

The plan is structured under eight topics of interest that reflect the work of the R3 subcommittees: (1) Access and Opportunity, (2) Adult Onset Participation, (3) Mentorship, (4) Youth and Families, (5) Reactivation, (6) Marketing and Public Perception, (7) License Structure and (8) Funding and Grants. The topics were collectively chosen by CDFW staff and stakeholders based on observations, experiences, insight and sentiments. They are not meant to serve as an exhaustive list but rather were the most pertinent and complex R3 issues stakeholders were concerned about for California. Additionally, the topics are not mutually exclusive and often overlap. Each topic of interest is organized by three core actions or objectives. Each of the three actions will serve as a catalyst to address micro-level operations for an implementation strategy to be formulated in detail during the first 6 months of 2019 (See, timeline). These micro-level operations will be SMART (specific, measurable, achievable, realistic and time specific) R3 goals and have a direct correlation to the recruitment, retention and reactivation goal statement (see, page 2). Once the implementation strategy is fully developed, an ongoing metric-based evaluation of the R3 Program will occur to ensure continued progress.

8 Topics of Interest

1. **Access and Opportunity**
2. **Adult Onset Participation**
3. **Mentorship**
4. **Youth and Families**
5. **Reactivation**
6. **Marketing and Public Perception**
7. **License Structure**
8. **Funding and Grants**



PRIORITY TASKS: LEARN, IDENTIFY, EDUCATE AND CALL-TO-ACTION

Each action has a list of four types of priority tasks: Learn, Identify, Educate and Call-to-Action. The four priority tasks were developed by analyzing the data that came out of the subcommittee work around the topics of interest. Each of the four categories are intended to ensure an effective and efficient implementation strategy and are meant to be completed in order, with relational learning.

1. Learn

The Learn task is to explore topics that have not been historically addressed, have failed in previous applications, or require more understanding and information to be effectively applied.

2. Identify

The Identify task is meant to provide collaboration with existing relationships, resources and programs while utilizing current infrastructure to create community equity and forge new opportunities.

3. Educate

The Educate task is aimed at providing tools needed to participate in the R3 process.

4. Call-to-Action

The Call-to-Action task is how R3 efforts will be implemented to increase hunting and fishing participation and will create the well-informed and SMART final implementation strategy that will be developed in early 2019.

The approach to this plan is intentionally reflexive in nature and is an innovative tactic for solving the state's decline in hunting and fishing participation. Having reflexivity is understood as the ability to have awareness about the relationship the stakeholders have to the field of study or problems presented and the ways that cultural practices involve consciousness and commentary. In general, it means that the data will allow for a more socially and culturally relevant approach to implementation. Furthermore, each section of this plan should be utilized with consideration to what was learned and identified in the other sections before finalizing any implementation strategies.

California R3 Action Plan Timeline

TASK	2019					
	JAN	FEB	MAR	APR	MAY	JUN
Final R3 Action Plan to Stakeholders						
Reconvene Stakeholder Subcommittees & Establish Priority Task Work Groups						
Build Broader Stakeholder Base for Implementation						
Priority Task: Learn						
Priority Task: Identify						
Priorty Task: Educate						
Priority Task: Call-to-Action						
Finalize Implementation & Evaluation Strategies						

Topics of Interest

TOPIC 1: ACCESS AND OPPORTUNITY

Participation in hunting and fishing is limited by many types of access barriers. Access barriers include anything that prevents or obstructs participation. Opportunity barriers include circumstances that make it impossible to participate. Having access to fishing and hunting opportunities is contingent on addressing multiple types of barriers within both. For example, some opportunity barriers are physical or related to resources, like having access to land and water, technical equipment, and the training or skill required for participation. Other access barriers are social and cultural and consist of inclusivity barriers, like feeling welcomed, supported and safe in the community and relevancy barriers, like social acceptability, cultural sensitivity, and creating a relatable and consumable lifestyle with identity buy-in to potential participants. Inclusivity barriers are usually experienced by those who know they are interested in participating but feel excluded while relevancy barriers are usually experienced by those who haven't given participation much thought because it's unknown or not salient to their lifestyle. By adopting actions under all three barrier categories, the California R3 efforts will address topics that have traditionally been unintentionally or unconsciously excluded. This translates into creating an inclusive fishing and hunting community where opportunity to recruit, retain and reactivate participants with past access barriers is possible.

Action 1:

Address opportunity barriers to make hunting and fishing more accessible

PRIORITY TASKS:

Learn:
Learn about opportunity barriers, what they are, how they affect communities, why they should be addressed and how opportunities to succeed can be amplified.

Identify:
Identify how stakeholders can work together to address limitations, remove barriers and increase access and success.

Educate:
Develop resources for stakeholders to address opportunity barriers.

Call-to-Action:
Create new programming and implement changes to existing programs that address opportunity barriers in creative, relevant and inclusive ways.

Opportunity barriers may include:

- land/water-use liability issues
- land/habitat availability
- opening land-locked areas
- working with private landowners to increase access through the SHARE program
- mobility limitations at facilities
- capacity building for programs
- coordinating agency and organizations collaboration efforts
- developing new special hunting and fishing programs
- addressing socio-economic needs of potential participants
- non-user education
- facility upgrades
- technology upgrades
- funding limitations of organizations and agencies, etc.

Action 2:

Address inclusivity barriers to make hunting and fishing more accessible

PRIORITY TASKS:

Learn:
Learn about inclusivity barriers, what they are, how they affect communities and why they should be addressed.

Identify:
Identify how stakeholders can work together to create educational opportunities to address inclusivity barriers.

Educate:
Develop resources for stakeholders on addressing inclusivity barriers.

Call-to-Action:
Create and implement changes to make a more inclusive culture in social spaces for fishing and hunting.

Inclusivity barriers may include:

- unintentional oversights like lack of signage or information in multiple languages
- historic or cultural bias (e.g. racism, sexism, ageism)
- hunting and fishing intra-community divisions
- communication
- support systems
- phobias (e.g. homophobia, Islamophobia, xenophobia, etc.)
- cultural and historical trauma
- other intolerances and prejudices

Action 3:

Address relevancy barriers to make fishing and hunting accessible and relevant in 2019 and beyond

PRIORITY TASKS:

Learn:
Learn about relevancy barriers, what they are, how they affect communities, why they should be addressed and how to predict trends for the future.

Identify:
Identify how stakeholders can work together to create educational opportunities to address relevancy barriers.

Educate:
Develop resources for stakeholders on how to address and predict relevancy barriers.

Call-to-Action:
Create and implement changes to lessen relevancy barriers and participate in emerging relevancy trends.

Relevancy barriers may include:

- cultural practices
- lifestyle choices
- societal pressures
- religious beliefs
- gendered spaces
- technological gaps
- competition for time

TOPIC 2: ADULT ONSET PARTICIPATION

There has been much discussion in California and on a national level about how to connect with, encourage, and support potential and new adult participants. Adult onset participation already makes up a large percentage of the fishing and hunting community. Over the last four years in California, 90 percent of first time hunting license purchasers were over the age of 18 and only 10 percent were youth. Similarly, 97 percent of all first-time fishing license purchasers were 18 or older (CDFW, 2018). However, while the fishing statistic is not a true reflection of youth participants because only those 16 and older require a license, based on the 3 percent youth purchase rate it is likely that the majority of first-time anglers are adults. Focusing on adults is particularly important in the R3 landscape because adults have the means to make decisions with purchasing power and they make up the largest segment of the California population at 77.1 percent. (Census, 2017). Furthermore, promoting adult onset hunting and fishing participation can indirectly increase youth participation in activities. Many adults have children who will organically engage if their parents are participating. Many fishing and hunting activities require adult supervision and provide critical opportunity to span across generations—if adults aren't engaged, it is less likely that youth will be supported to become engaged.

Action 1:

Provide opportunity for the adult onset (AO) group to connect with the hunting and fishing community

PRIORITY TASKS:

Learn:
Learn about the social and community-based needs, interests, fears, challenges and motivations of the AO group.

Identify:
Identify how stakeholders are providing community experiences, programming and resources to the AO group, and what gaps exist in these services.

Educate:
Develop tools for stakeholders on how to develop community experiences that increase and maintain AO participation.

Call-to-Action:
Create and implement new spaces (online and physical) to promote the collaboration and participation of adults in hunting and fishing activities.

Topics may include:

- perceived investment of time and money,
- community acceptance,
- lack of information
- identity and political hesitations,
- generational gaps
- lack of age or topic appropriate programming/ events
- safety
- field-skills and etiquette,
- laws and regulations
- access and opportunity barriers
- social media utilization, etc.

Action 2:

Modernize educational tools to increase relevancy, appeal and accessibility

PRIORITY TASKS:

Learn:
Learn about the educational needs, interests and barriers of the AO group.

Identify:
Identify how stakeholders can collaborate to address the educational needs and interests that exist for the AO group.

Educate:
Develop an "educate the educator" series and continued educational support to help R3 educators make their classes, workshops and events relevant and interesting.

Call-to-Action:
Create and implement appealing and relevant AO curriculums and tools for hunting and fishing educators that are both easy to navigate (online and physical) and address the educational needs of this group with the help of industry partnerships.

Topics may include:

- appealing to millennials
- resources outside the classroom
- field-skills
- technology and fishing/ hunting
- advanced hunter education topics
- alternative topics in fishing
- foraging and wild food
- regulations
- community participation, etc.

Action 3:

Create tools and resources to increase adult onset participation

PRIORITY TASKS:

Learn:
Learn about the strengths, weaknesses, opportunities and threats (SWOT Analysis) for the AO group

Identify:
Identify how stakeholders can work together to analyze existing tools and resources and compare them to outcomes of the AO SWOT analysis.

Educate:
Develop a toolkit for stakeholders to effectively create AO participation tools and resources.

Call-to-Action:
Create and implement tools and resources that are useful and relevant to AO groups to increase participation.

Topics might include:

- DIY guides
- mentorship
- incentivized opportunities
- how-to videos
- developing a hunting passport program
- increasing cellular service ranges
- content database
- app development that includes fish stocking schedules and public access areas with location-specific information, etc.

TOPIC 3: MENTORSHIP

In fishing and hunting, mentors are those people who act as advisers, guides or teachers formally, informally or both. Formal mentorship includes those who lead or volunteer through educational and outreach programming or technical workshops, and often require certification or formal training to serve. Informal mentorship includes those who offer to take new participants into the field through social or family connections.

The International Hunters Education Association (2000) found that the three motivations for becoming involved and staying involved include achievement, affiliation and appreciation. Mentorships provide new participants with the technical knowledge and skill that makes participation safe, fun, and often provides achievement or merit-based motivation opportunities (achievement motivation). Information is often passed down through the oral traditions in the fishing and hunting community through community and organizational connection, story-telling, comradery and social knowledge (affiliation motivation). During this process, sporting ethics, appreciation for wildlife and conservation knowledge is often passed down from mentor to mentee (appreciation motivation). Along with establishing the three motivations to participation, mentorship is important in assisting participants through the stages of the ORAM that require social support (see, page 7).

The National Shooting Sports Foundation (2017) states that, "[The] most avid participants are those who were brought into the sports though mentors." While much of the literature on the topic stresses the importance of mentorship, it is also commonly noted that there is a general difficulty in potential participant's ability to find and connect with a mentor. It is even harder to find a formal mentorship program that is not youth-oriented, leaving a gap in mentorship services. Current youth programing generally does not yield high recruitment or retention rates. The cause of this is multifaceted, but youth often do not control how resources, time and money is invested in their household. Therefore, mentorship efforts should be amended to include groups who control how their resources, time and money is spent, and youth will get involved as a secondary outcome of involving their parents or family members. Specifically, efforts should be focused on potential participants, adult onset, and retention and reactivation groups. The recruitment and mentoring of potential and new youth participants is still a vital component of California's R3 efforts but further evaluation is needed to determine the most effective approach.

Action 1:

Conduct a program evaluation process for current mentorship programs, analyze data, make and implement recommendations

PRIORITY TASKS:

Learn:
Learn about mentorship programs both inside and outside of hunting, fishing and shooting programs, the standards, modalities, models and techniques used and how they are evaluated to ensure sustainability and efficacy.

Identify:
Identify how stakeholders can work together to identify the types of program evaluations that are needed and develop a continued evaluation plan to be effective, efficient, relevant, inclusive and forecast trends for the future.

Educate:
Develop and provide stakeholders with guidance on how to create and participate in a program evaluation and analysis process.

Call-to-Action:
Implement a statewide effort to conduct program evaluations of mentorship programming, pool data, identify gaps, successes, failures, forecast future evaluation needs and identify how future programs can be shaped from this information.

Examples may include:

- creating a program evaluation plan template
- standardized measurable metrics
- hire a program evaluation analyst
- statewide data pooling efforts
- statewide mentorship program standards
- producing an annual report on the status of hunting and fishing mentorship programming, etc.

Action 2:

Improve mentorship programs to include methodologies that address the three motivations for fishing and hunting participation (achievement, affiliation and appreciation) and that develop social competence in addition to technical aptitude

PRIORITY TASKS:

Learn:
Learn about social competence, how to integrate it into programs and how the three motivations inform participation for both mentees and mentors.

Identify:
Identify how stakeholders can work together to modernize mentorship programs to include social competence and the three motivations for participation.

Educate:
Develop and provide stakeholders with guidance on how to implement social competence techniques and new teaching modalities under the three motivations into their mentorship programs.

Call-to-Action:
Implement new mentorship experiences that address opportunities for currently excluded groups and expand existing programs to include components of social competence and all three participation motivations for both mentees and mentors.

Examples may include:

- online profile-match mentorship matching through the ALDS license sale platform
- ambassador programs
- achievement awards
- ongoing programs with skill/species/motivation/ideology-specific mentor tracks
- mentorship pledge program
- annual statewide awards banquet
- certification programs
- creating specific mentorship tracks
- adjust outreach and recruitment efforts for both mentors and mentees, etc.

Action 3:

Provide greater access to and support for mentorship programming through increased time investment, tools and options that are effective, relevant and inclusive

PRIORITY TASKS:

Learn:
Learn about what types of mentorship tools are effective, relevant and inclusive. This means they might take into consideration things like: access, skills, needs, limitations, expectations, value, generational and ideological appeal, learning styles, time, etc. for both mentors and mentees.

Identify:
Identify how stakeholders are currently prioritizing time spent on mentoring and mentoring programs, utilizing tools, and if they are effective/ineffective, relevant/irrelevant, and inclusive/exclusive and how to address the discrepancies

Educate:
Provide stakeholders with guidance on how to develop effective, relevant and inclusive mentorship opportunities and effective time investment strategies.

Call-to-Action:
Implement tools that are effective, relevant and inclusive to increase access to and support for mentorship programming.

Examples may include:

- different options to take hunter's education, mentorship matching tools
- hire a mentor specialist
- digital mentorship options
- defined and measurable goal setting techniques
- systems of mentorship evaluation and feedback
- reasonable time and resource commitments
- recruitment plans
- monthly newsletter, etc.

TOPIC 4: YOUTH AND FAMILIES

Currently, there are a myriad of hunting and fishing programs and events surrounding youth and families through CDFW, NGO partners,Tribes clubs/organizations and the outdoor industry, but due to increasing options and demands on time, youth and families have become a challenging audience. Many kids are growing up in areas with limited access to nature and as society moves toward more structured group activities, higher expectations and increased safety concerns for youth, participation in fishing and hunting has become obsolete in many places. Even in areas with access and opportunities, there is less time for children to freely wander the parks, fields, streams, woods and lakes in their neighborhoods. Families have become burdened with mounting responsibilities that limit the amount of free time available to be spent traveling to nature-rich destinations.

The decline in youth and family hunting and fishing is partially attributed to the fact that hunters and anglers are most often the children of other hunters and anglers or have relatives who hunt and fish. As overall participation has declined, hunters and anglers have not been able to reproduce historical participation rates themselves. Only one in 20 millennials (born 1981-1996) is a hunter, according to the 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (USFWS, 2018). Larger participation numbers from millennials and their children could prevent the current decline trends in lack of participation from generational trickle-down. Programs and education specifically geared toward millennials and Gen Z or the "iGen" (1997 to mid-2000s) group that can evolve relationships with nature and wildlife-based recreation in a safe and appealing way may also have positive long-term participation benefits to hunting and fishing. Likewise, as other generations retire and age, hunting and fishing can provide opportunities to spend positive entire-family time together spanning many generations. Awareness of various generational interests and the accessibility needs of youth and family programs as well as evaluating their efficacy will be imperative in increasing and maintaining interest across many generations.

Action 1:

Conduct a program evaluation process for current youth and family (YF) programs, analyze data, make and implement recommendations

PRIORITY TASKS:

Learn:
Learn about both internal and external YF programs, the standards, delivery methods, models and techniques used and how they are evaluated to ensure sustainability and efficacy.

Identify:
Identify how stakeholders can work together to identify the types of program evaluations that are needed and develop a continued evaluation plan to be effective, efficient, relevant, inclusive and forecast trends for the future.

Educate:
Develop and provide stakeholders guidance on how to create and participate in a revolving program evaluation and analysis process.

Call-to-Action:
Implement a statewide effort to conduct program evaluations of YF programming, pool data, identify gaps, successes, failures, forecast future evaluation needs and identify how future programs can be shaped from this information.

Examples may include:

- creating a skeleton program evaluation plan
- standardized measurable metrics
- creating a tracking system for participation
- statewide data pooling efforts
- statewide youth and family program standards
- producing an annual report on the status of hunting and fishing youth and family programming, etc.

Action 2:

Create partnerships with youth and family programs outside of traditional fishing and hunting spaces

PRIORITY TASKS:

Learn:
Learn about how external YF programs already collaborate with hunting, fishing and shooting sports programs, what other external YF programs may be interested in collaborating and what stigmas exist around hunting and fishing with each group.

Identify:
Identify stakeholders who are willing to collaborate with external YF programs to create new or alter their existing YF programming to break down stigmas and meet the needs of new partnerships.

Educate:
Develop tools for stakeholders on creating, maintaining and evaluating external partnerships.

Call-to-Action:
Implement a system to create and foster partnerships with external YF programs, especially with programs who serve populations with access barriers to hunting and fishing.

Strategies might include:

- researching mutual benefits
- hiring organizational liaisons
- developing needs assessments
- developing a programs profile matching system
- co-marketing strategies
- co-funding opportunities, etc.

Action 3:

Create statewide best practices for youth and family programming to help ensure programs are effective, relevant and inclusive

PRIORITY TASKS:

Learn:
Learn about best practices and guidelines currently used in external YF programs, how they maintain relevancy and inclusivity and if intended outcomes have been achieved.

Identify:
Identify how stakeholders can work together to establish a set of effective, relevant and inclusive statewide YF programming best practices that are mutually beneficial to those who will institute them and those who will be served by them.

Educate:
Develop and provide stakeholders resources on adopting best practices into YF programs.

Call-to-Action:
Implement effective, relevant and inclusive statewide best practices at the YF program-level.

Strategies might include:

- developing tracking and idea worksheets
- templates
- best practices toolkit
- individualized guideline planning
- hiring a program guideline specialist, etc.

TOPIC 5: REACTIVATION

Reactivation efforts are perhaps the most challenging of the "3 Rs". There hasn't been much in-depth research done on why people abandon participation in hunting and fishing. There are three categories of people who have ceased participation: (1) permanent non-participants, those people who no longer participate, no longer wish to participate, and no longer consider themselves part of the lifestyle or community, (2) situational lapsers, those who no longer participate due to situational events like disability, relocation, lack of social network, time or economic constraints, reduced success rates, negative experience with the activity or with people they know, etc. and (3) reactivators, those who were situational lapsers and now participate again but who don't yet consider themselves fully transitioned into the fishing and hunting lifestyle or community. It's important to note that those who no longer participate may still contribute to the social landscape and overall support of hunting and fishing.

Action 1:

Determine how situational lapsers can become reactivators

PRIORITY TASKS:

Learn:
Learn about situational lapsers, why they cease participation, what could initiate renewed interest and what barriers exist to reactivate them.

Identify:
Identify how stakeholders can work together to address lapsed participants, renew interest, and overcome barriers through existing and new tools and programing.

Educate:
Develop and provide stakeholders with guidance on helping lapsers overcome barriers to reactivation.

Call-to-Action:
Implement a statewide marketing and outreach plan to address the identified barriers for situational lapsers.

Tactics may include:

- workshops
- reactivation tool kit development
- adding program extensions
- cross-promotions and program integrations
- program evaluations
- targeted audience recruitment and outreach training, etc.

Action 2:

Create programs to address the needs of reactivators and assist them in making a return to full participation

PRIORITY TASKS:

Learn:
Learn about the needs, desires, interests and barriers for reactivators.

Identify:
Identify how a stakeholder can work together to develop or enhance resources and programs to address the needs, desires, interests and barriers for reactivators.

Educate:
Develop and provide stakeholders with guidance on how to develop effective reactivation resources, programs and outreach plans to assist reactivators in their return to full integration and participation.

Call-to-Action:
Implement new spaces (online and physical) and modify existing programming to address the integration needs of reactivators.

Tactics might include:

- hosting social events
- user-matching program
- organizing trips
- re-learning technical skills
- learning to hunt or fish for different species
- implementing a guided-trip/mentorship reactivation program
- maintaining better contact
- hiring a reactivation coordinator
- region-specific location access-guides
- CDFW experts at NGO events, etc.

Action 3:

Create alternative participation options for situational lapsers who no longer can or want to be active hunters or anglers

PRIORITY TASKS:

Learn:
Learn about participation opportunities and roles in the fishing and hunting community beyond the act of hunting and fishing, why these roles are important, what the incentives and positive benefits are, and how they can be used to re-integrate situational lapsers.

Identify:
Identify the needs of stakeholders and compare them to the needs of situational lapsers to determine how collaboration between stakeholders and situational lapsers can occur.

Educate:
Develop resources for stakeholders on integrating situational lapsers into alterative roles.

Call-to-Action:
Implement alternative participation options for situational lapsers.

Tactics may include:

- mentorship opportunities
- alternative hunting and fishing opportunities with adaptive technology
- becoming a hunter education instructor
- writing and story-telling opportunities
- volunteering with conservation projects
- developing programming or resources for other hunters and anglers, etc.

TOPIC 6: MARKETING AND PUBLIC PERCEPTION

In recent years, R3 experts and researchers have begun to identify the complexity of the challenge facing stakeholders working to stabilize and increase the population of fishing and hunting participants in the U.S. There is a growing recognition that R3 efforts must expand beyond simply providing hands-on learning opportunities. Generating more supporters and participants from an expansive target audience will require multi-pronged marketing campaigns, outreach efforts and business practices that provide customer-centric resources such as easy-to-access and understandable information. By honing marketing strategies through stakeholder collaboration and expertise, resources can be combined to connect potential participants to multiple opportunities. Furthermore, this type of approach will concurrently provide a larger public presence to educate and introduce hunting and fishing into spaces where conversation on these topics have been void.

Public opinion polls show that the public is generally in favor of fishing and hunting as a means of sustenance, invasive species/population control and habitat conservation. However, there is also strong indication that while the public is generally in support of fishing and hunting, support declines dramatically when asked about issue-specific topics. To garner stronger public support for hunting and fishing activities, a social and cultural ideology shift around these activities is required. However, there are many limitations in this work because such a shift is contingent on large and seemingly impenetrable bodies of power, like the media and formal educational spaces. The largest challenge of addressing and changing public perception is developing rapport and funding to shift media and educational content delivery on a large-scale. This challenge will be best addressed through concerted and organized efforts of many stakeholders presenting as a unified body with a clear and deliverable action plan and pooled resources.

Action 1:

Improve public perception of hunting and fishing activities

PRIORITY TASKS:

Learn:
Learn about public perception, how it is formed, why opinion formation is dependent on individual experiences and group influence, and how framing methodologies can help change and influence perceptions and opinions.

Identify:
Identify how stakeholders can work together to determine who their target audience is and who it could be, what the assumptions, biases, factors of influence and heuristics are for each target audience, and how resources can be pooled to address improving public perception.

Educate:
Develop tools and guidelines for stakeholders to improve public perception.

Call-to-Action:
Create and implement a diversified and relevant marketing and media strategy that targets both internal and external media outlets and audiences.

Approaches may include:

- how to appropriately and effectively engage with the public
- a set of community standards
- collaborating with mainstream media and public affairs groups
- working with first point of contact staff and law enforcement
- understanding trigger words/ actions/ideologies, PSA's
- relevant messaging campaigns
- community outreach in non-traditional spaces
- using problem solving techniques and factors of influence
- impact trends of historically used marketing/messaging
- the use of media influencers, etc.

Action 2:

Update broad-scale content marketing and media strategies

PRIORITY TASKS:

Learn:
Learn about marketing and media strategies from companies and organizations that have maintained a relevant image, far-reaching platform and consumable lifestyle outside of the outdoors industry, what the marketing needs of the whole-industry are, what R3 target audiences' media and marketing preferences are and compile a cost-benefit analysis of the various marketing strategies for each.

Identify:
Identify how stakeholders can work together to develop new strategies and address the marketing and media needs of the future based on the cost-benefit analysis.

Educate:
Develop resources for stakeholders about marketing and media strategies appropriate to R3 target audiences.

Call-to-Action:
Implement an updated approach to marketing and media strategies with a focus on the whole industry.

Approaches may include:

- creating a media and messaging toolkit for various platforms
- branding new markets, rebranding existing marketing
- utilizing young adult and millennial-aged writers outside of the hunting and fishing community
- publishing in non-traditional spaces
- internet-driven media campaigns
- diversifying images/content
- collaborative advertising and marketing
- cross-marketing techniques
- 4P's: product, placement, price and promotion
- consumable lifestyle and emotional lifestyle marketing
- crisis marketing
- Hollywood influence and education

Action 3:

Create marketing and outreach strategies that can be applied to the programming and resources developed through the Call-to-Action tasks in this plan

PRIORITY TASKS:

Learn:
Learn about marketing and promoting the outcomes of each Call-to-Action through appropriate, relevant and socially aware methods how to identify future market trends, what considerations should be made in developing marketing plans, and what limitations, barriers and negative implications may exist for each.

Identify:
Identify how stakeholders can work together to develop and implement needed marketing plans and outreach strategies.

Educate:
Develop resources for stakeholders on creating marketing plans and how to plan to evaluate efficacy and future market trends.

Call-to-Action:
Implement a creative, relevant and inclusive marketing and promotions plan for any programming and resources developed through the Call-to-Action tasks.

Approaches may include:

- workshops
- toolkits
- professional development training
- hiring a marketing/ promotions specialist
- utilizing human dimensions research
- using trend and analytic tools
- branding strategies, etc.

TOPIC 7: LICENSE STRUCTURE

It is difficult to over emphasize the importance of funds provided to CDFW from the sales of hunting and fishing licenses, tags, validations and report cards. These funds provide over 20 percent of CDFW's overall budget and make fish and wildlife conservation projects, Fish and Game Code enforcement, and hunting and fishing access possible. The number of annual hunting licenses sold in the state has plummeted from a high of 850,000 in the 1970s to a low of 270,000 in recent years. The number of resident annual fishing license sales have dropped from a high of over 2 million to roughly 1 million over the same timeframe. This has happened when the state's population has increased from 20 million to 40 million.

Over the past several years, there has been much debate in California about the current hunting and fishing licenses structure and pricing. Sales of hunting or fishing licenses, like any consumer product, can be significantly affected by pricing and packaging. California currently has the second most expensive fishing license in the country. Fees for annual hunting license, tags and validations are also among the highest in the country. These products should provide as much value, consumer choice and convenience to CDFW customers as possible. Currently, annual fishing licenses are valid from January 1 to December 31 and annual hunting licenses are valid from July 1 to June 30. There has been much discussion about offering a fishing license valid for 365 days from date of purchase, offering a combination hunting and fishing license, modifying certain hunting and fishing privileges, auto-renewal options, etc. Several bills sponsored by CDFW stakeholders have been introduced over the past few years aimed at addressing the issue. Many economic studies have been conducted in other states and nationally but there has not been a modern economic analysis of fishing and hunting license structure and pricing in California. Likewise, the online Automated License Data System (ALDS) is not fully utilized in a way that meets today's technological purchasing culture.

More convenient purchasing and display options for hunting and fishing licenses are long overdue. Californians are more and more frequently using smartphones for commerce. As the state at the forefront of technological innovation, California needs to modernize the way we sell and display hunting and fishing licenses. Several states have implemented smartphone applications that make purchasing and displaying licenses much more convenient for hunters and anglers, while improving customer service and compliance with regulations. Customer expectations are changing and there is increased reliance on mobile apps with more convenient, relevant and connected user experiences.

Action 1:

Reassess License Pricing

PRIORITY TASKS:

Learn:
Learn about the optimum pricing for license, tags and report cards by utilizing an outside contractor who will work with CDFW License and Revenue Branch and ALDS staff to conduct a California-specific economic impact and viability study.

Identify:
Identify the impacts of license, tag and report card pricing along with alternative pricing authority options and carefully analyze the data using statistical processes that consider the various factors that are pertinent to both California residents and out-of-state users.

Educate:
Provide the outcome of the economic study along with the various possibilities to adjust the license, tag and report card pricing and alternative pricing authority options to the Legislature, Fish and Game Commission, CDFW and stakeholders.

Call-to-Action:
Implement changes to the CDFW license pricing structure and potentially shift pricing authority based on results of a California-specific economic impact and viability study.

Options may include:

- changing the pricing on certain items to accommodate current consumer trends
- providing more flexibility to change pricing annually based on wildlife management plans
- offering savings programs through bundling options
- shifting the who has authority to determine pricing options, etc.

Action 2:

Reassess License Configuration

PRIORITY TASKS:

Learn:
Learn about optimum configuration and structure for license, tags and report cards by utilizing an outside contractor to work with CDFW License and Revenue Branch and ALDS staff to conduct a California-specific evaluation.

Identify:
Identify the impacts of license, tag and report card configuration and carefully analyze the data using statistical processes that consider the various factors and trends that are pertinent to both California and out-of-state users.

Educate:
Provide the outcome of the evaluation along with the various possibilities to adjust the license, tag and report card configuration to the Fish and Game Commission, CDFW and stakeholders.

Call-to-Action:
Implement changes to the CDFW license configuration based on results of a California-specific evaluation.

Options may include:

- combination packages for both hunting and fishing
- salt or fresh water angler only packages
- small game packages
- learners permit
- total sports package with all hunting and angling options
- draw packages
- mentorship and new participant packages in conjunction with hunter's education and NGO programming, etc.

Action 3:

Modernize License Technology

PRIORITY TASKS:

Learn:
Learn about the technology needs of both resident and non-resident users in California.

Identify:
Identify how the technology needs of users can be met through stakeholder collaboration and outside vendors to determine the best option to address user needs.

Educate:
Develop tools/training for stakeholders, outside vendors and users to acclimate to new technologies before they've been integrated.

Call-to-Action:
Implement new license technologies to increase engagement and ease of access to make purchases, renewals and streamline the user experience.

Options may include:

- smart phone applications for draws
- dowloadable license and tags for smart phone wallets
- individual QR codes for GO-IDs
- linked zone maps to each tag
- linked species identification guides
- hunting and fishing regulations
- photo and video upload with liability release capability
- ability to sign up for educational events
- links to outside resources
- location amenities list

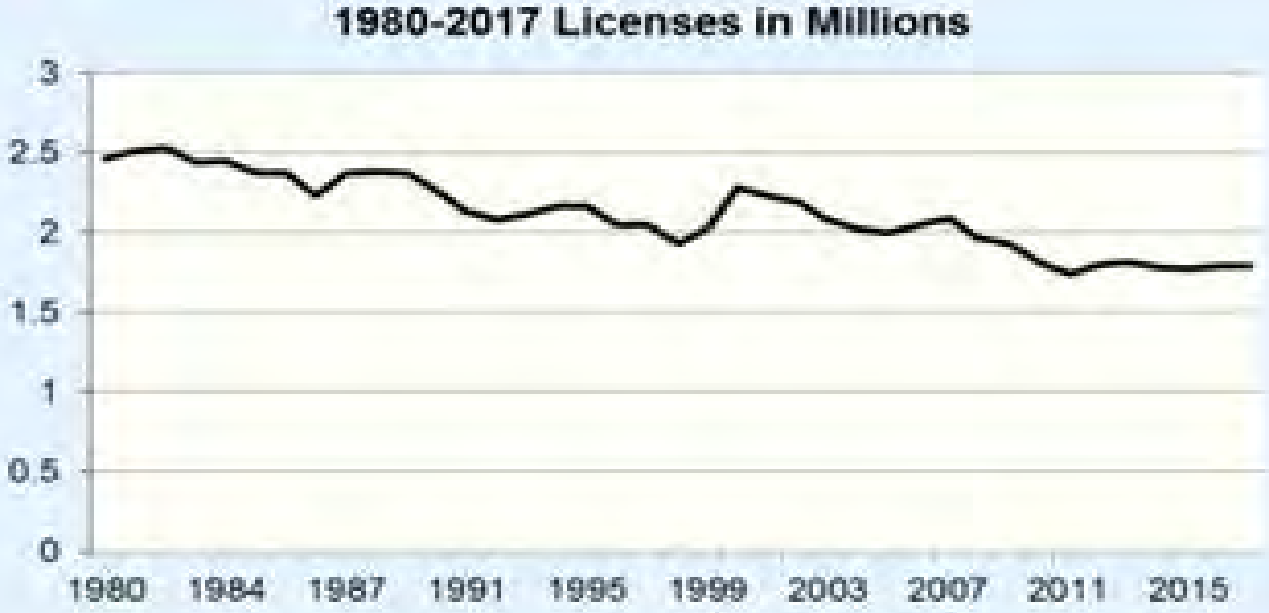
TOPIC 8: FUNDING AND GRANTS

One of the most visited, but ultimately unresolved issues is how to provide CDFW with sustainable financing. It is not a new problem. Since at least the 1950s, countless reports identify funding as the most important problem to solve. This issue certainly carries over to how CDFW and stakeholders might fund R3 activities.

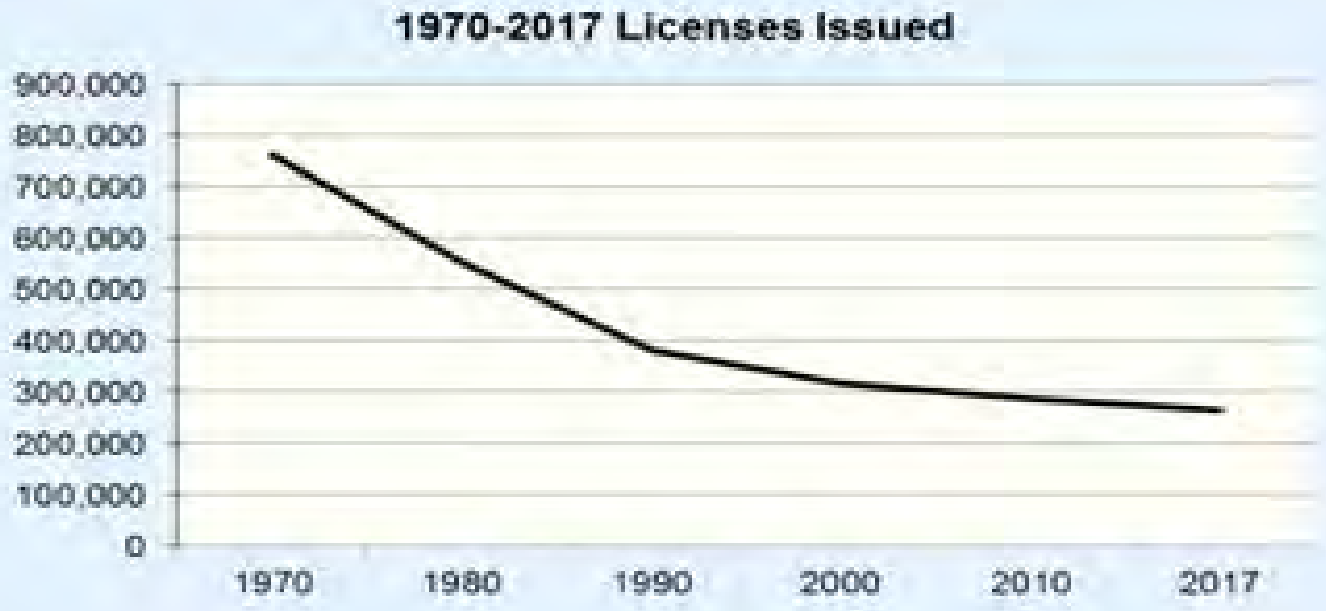
There are several existing grant programs that can provide funds for R3 activities. The U.S. Fish and Wildlife Service, Wildlife and Sport Fish Restoration Program (WSFR) works with states to conserve, protect and enhance fish, wildlife, their habitats, and the hunting, sport fishing and recreational boating opportunities they provide. RBFF currently offers two R3 grant programs, the State R3 Program Grants that help fund state programs that are sustainable and replicable, and the George H.W. Bush Vamos a Pescar™ Education Fund grants awarded to organizations bringing conservation, education and fishing and boating experiences to Hispanic families.

A CDFW R3-specific grant program could award funding to projects aimed at helping further CDFW R3 goals. The grant program would be focused on increasing participation in hunting and fishing by funding projects that specifically address barriers as they pertain to recruitment, retention and/or reactivation throughout the state. Similarly, funding that has not been fully utilized is currently available through the CDFW Hunter Education Program to modernize, enhance and build new archery and gun ranges and training facilities. Gun and archery ranges are key to developing the skills of current and future hunters as well as providing recreational opportunities. Ranges funded through this program should be available to hunter education classes at low or no cost.

All Sport Fishing Licenses



Total Hunting Licenses Sold



Action 1:

Establish a California Department of Fish and Wildlife R3 grant program

PRIORITY TASKS:

Learn:
Learn about available R3 funding, how it can be utilized, and what the benefits and limitations are for each option.

Identify:
Identify a set of standards and/or project criteria that grant applicants must meet, an appropriate RFP process, and a program evaluation model for grant-funded projects.

Educate:
Develop resources for stakeholders to help navigate the grant application process and developing programs for unmet R3 needs.

Call-to-Action:
Create and implement a CDFW R3 grant program to address R3 barriers in California, under advisement of a grant advisory committee.

Methods may include:

- RFP guide
- grant calendar
- hiring a grant coordinator
- programmatic ideas
- increasing access to and building more shooting and archery ranges
- outreach to underserved communities
- marketing/ communications, etc.

Action 2:

Utilize existing grant opportunities to increase R3 activities

PRIORITY TASKS:

Learn:
Learn about existing R3 grant opportunities, how R3 activities may meet criteria for applying to non-R3 specific grants, what the RFP or application requirements are, and what the annual funding calendar looks like.

Identify:
Identify how stakeholders can collaborate to create competitive R3 programs and apply for funding.

Educate:
Develop resources and tools for stakeholder collaboration on developing R3 programing and navigating grant processes.

Call-to-Action:
Implement a collaborative grant identification and application process where partner organizations can leverage staffing, expertise and resources to apply for existing grant opportunities to increase R3 activities.

Methods may include:

- grant think tanks
- shared grant RFP and funding calendar
- hiring a grant writer
- collaboration toolkits, etc.

Action 3:

Integration of resources to leverage additional R3 funding

PRIORITY TASKS:

Learn:
Learn about other resources available for R3 funding, how partnerships can help leverage resources, and discover benefits, opportunities, limitations and barriers.

Identify:
Identify stakeholders interested in collaborating to leverage resources and in what capacity.

Educate:
Develop resources for stakeholders on opportunities to collaborate and the positive benefits of joint R3 efforts.

Call-to-Action:
Implement a process to leverage available funding through integration of resources and partnerships.

Methods may include:

- create R3 funding campaigns through ALDS license sales and organizational membership fees
- partnerships with the federal government and NGOs to helping fund R3 events
- increase funding for outdoor K-12 education
- leveraging NGO money and volunteer hours to provide match
- toolkit securing collaborative funds for R3 projects
- utilizing non-hunting and non-fishing outdoor recreation industry partners, etc

Conclusion

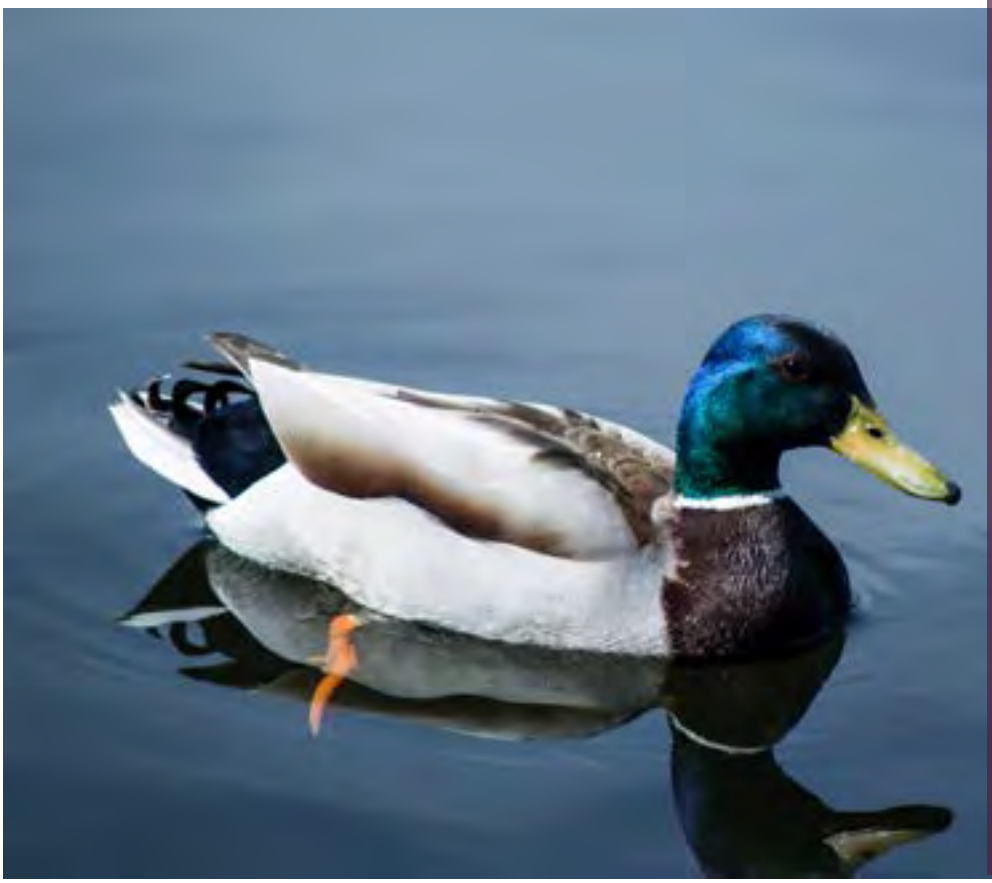
This macro-level action plan is a representation of diversified interests and community collaboration and is only the beginning of the statewide California R3 effort. It is meant as a guide to develop and deliver implementation strategies with thoughtfulness and consideration to the gaps identified from previous R3 efforts without making assumptions about how to best solve R3 issues. It is not exhaustive and cannot possibly predict every barrier to participation in hunting and fishing. But, for the first time in California history, this plan allows for place to learn, identify, educate and call into action sustainable and well formulated solutions to address fishing and hunting recruitment, retention and reactivation barriers.

Next Steps

Phase 2 of the CDFW statewide California R3 program will begin in early 2019. The CDFW R3 Team will create the necessary strategy and planning tools for stakeholders to start Phase 2. Concurrently, invitations to participate in statewide R3 efforts will be extended to potential stakeholders who were unintentionally excluded or who are not yet involved. The goal to embrace Tribes and more diverse stakeholders, including industry, volunteers, educators and media, in Phase 2 is to expand R3 equity, resources, reach and reputation. CDFW will use Tribal Notifications to extend participation invitations to Tribes. Additionally, engaging more diverse stakeholders can create a mutually-beneficial collaborative approach that considers varied interests and perspectives to ensure long-term viability and success of the statewide California R3 Program.

CDFW will then begin to reconvene stakeholders to start completing the priority tasks listed under each action in February 2019. Once the first three priority tasks (learn, identify and educate) have been completed, the creation of in-depth micro-level implementation strategies will occur to fulfill the call-to-action tasks over the next several years. The micro-implementations will include SMART (specific, measurable, achievable, realistic, and time specific) R3 goals. These goals will be based on what was learned collaboratively during the first three priority tasks and will fulfill the call-to-action statement listed. In addition to overseeing these efforts, CDFW will continue to provide resources, develop various tools for success and act as a liaison on all national R3 initiative findings and R3 science during this time.

CDFW is committed to reversing the declining fishing and hunting participation trends by executing this R3 Action Plan into implementation strategies that will create a sustainable environment for community-driven processes. CDFW is hopeful that mutually-beneficial successes with stakeholders will be fostered through this Action Plan. To protect the future of hunting, fishing and conservation, identifying recruitment, retention and reactivation barriers and turning those barriers into opportunities is imperative. In conclusion, the CDFW is confident that with the full engagement and support of stakeholders, the California R3 program will pave the way to address the decline in hunting and fishing across the state.



SMART Goals

Specific
Measurable
Achievable
Realistic
Time specific

References

CDFW. 2018. Department of Fish and Wildlife Budget Fact Book, FY 2018-2019
https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=154895&

Census. 2017. Quick Facts.
https://www.census.gov/quickfacts/fact/table/ca/PST045217

Council to Advance Hunting and the Shooting Sports. 2017. The Outdoor Recreation Adoption Model
http://www.cahss.org/oram/

International Hunters Education Association (2000) Meeting the Challenge to Increase Participation in Hunting and Shooting.
http://www.ihea-usa.org/_assets/documents/ttankfinal.pdf

Southwick Associates. 2018. America's Sporting Heritage 2018.
http://www.southwickassociates.com/americas-sporting-heritage-2016-new

U.S. Fish and Wildlife. 2016. National Survey of Fishing, Hunting and Wildlife-Associated Recreation.
https://wsfrprograms.fws.gov/subpages/nationalsurvey/nat_survey2016.pdf

U.S. Fish and Wildlife. 2016. PR and DJ Tax Monies to States in 2016.
https://www.fws.gov/home/feature/2016/pdfs/PRDJ-TotalsFY2016.pdf

U.S. Fish and Wildlife. 2018. National Survey Overview
https://wsfrprograms.fws.gov/subpages/nationalsurvey/national_survey.htm

Appendix I: Key Terms

R3 the 3 "Rs" stand for: Recruitment, retention and reactivation. They are the three most influential factors determining participation in hunting and fishing activities in the Outdoor Recreation Adoption Model (ORAM). They were established to create a shared nationwide vocabulary and unified effort for R3 work.

Factors of Influence are aspects of life that include past-experience, cognitive bias, age and individual difference, belief in personal relevancy, and an escalation of commitment.

First Point of Contact is any person who the public has direct contact with as a first line of communication. Examples include wildlife officers, interpreters, front desk representatives, those who answer telephone and email inquiries, hunter education instructors, program or event coordinators and volunteers, etc.

Framing Methodology In the social sciences, framing comprises a set of concepts and theoretical perspectives on how individuals, groups and societies, organize, perceive and communicate about reality, situations and activities. Framing methodology involves intentional social construction of a social phenomenon – by mass media sources, political or social movements, political leaders, or other actors and organizations.

Group Influence is when two or more people share a set of norms, values, ideologies, social or cultural beliefs, or sentiments and convey them to others who can be persuaded to join their thinking, practice and behavior. Typically group influence produces an interdependent set of social norms that inform everyday decision making from purchasing power, social activities and sometimes political or religious beliefs and practices. This term should be utilized with the understanding of social influence.

Heuristics is an approach to problem solving, discovery, inquiry and learning that utilizes practical self-educating methods often through experimentation or trial-and-error, not guaranteed to be optimal, perfect, logical or rational, but instead reasonable and actionable to reach immediate goals that can satisfy multiple interests. Heuristics can help lead groups to quicker decision making without the limitations of other models of problem solving but participants of heuristics should be aware that unconscious and cognitive bias is sometimes a limitation.

Institutional Knowledge is the ability for organizations to utilize preserved memory or historical data to determine usable information and knowledge to improve the organization's effectiveness.

Permanent Non-Participant are people who no longer participate in hunting and/or fishing, no longer with to participate and no longer consider themselves part of the community.

Reactivators people who stopped participating in hunting and/or fishing and now participate once again but who don't yet consider themselves fully transitioned into the fishing and hunting community.

RFP is an initialism for "Request for Proposal", a document that is used to solicit proposals for funding opportunities.

Three Participation Motivations consists of achievement, affiliation and appreciation. **Achievement** defines those who participate based on merit opportunities like awards, size/weight/species records, becoming an instructor/guide/coach, or otherwise meeting performance-based markers. **Affiliation** defines those who participate because of others they know, like family or friends, or because of organizational or group membership. **Appreciation** defines those who participate based on the appreciation of sport, nature, wildlife, food acquisition, and other mental, emotional or spiritual connections to participation. People who participate because of multiple motivations are more likely to stay engaged in an activity and participate in multiple activities.

Shooting Sports refers to the recreational shooting of various types of targets with firearms and/or archery.

Situational Lapser is a person who no longer participates in hunting and/or fishing activities due to situational events like disability, relocation, lack of social network, time or economic constraints, reduced success rates, negative experience with the activity or with people they know, etc.

Social competence consists of social, emotional, cognitive and behavioral skills needed for successful social adaptation. Social competence also reflects having an ability to take another's perspective concerning a situation, learn from past experiences, and apply that learning to the changes in social interactions.

Social Influence is when a person's opinions, emotions, beliefs, ideologies and behaviors are influenced and changed by others.

Social Landscape is the context, situation and understanding that an event, activity or lifestyle takes place in.

Stakeholder include government agencies, non-governmental organizations, Tribes, industry, media, educators, local clubs, politicians and volunteers with an interest in increasing fishing and hunting participation who are also willing to invest in time and resources into the R3 effort.

SWOT Analysis (alternatively SWOT matrix) is an initialism for strengths, weaknesses, opportunities, and threats—and is a structured planning method that evaluates those four elements of a project, program or business.

APPENDIX II: Acknowledgements

CDFW R3 Task Force

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Chief David Bess, Deputy Director, Law Enforcement Division

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CDFW News

DELTA, ECOSYSTEM RESTORATION, ENVIRONMENTAL SCIENCE, GRANTS, HABITAT CONSERVATION, INVASIVE SPECIES

CDFW Marks One-Year Anniversary of Nutria Eradication Effort: Biologists Report More Than 400 Invasive Rodents Captured to Date

MARCH 25, 2019 | PTIRAWILDLIFE

One year after launching an Incident Command System and a formal effort to eradicate invasive nutria from the state, the California Department of Fish and Wildlife (CDFW) reports significant progress in combatting the destructive, South American rodents, though much work remains.

In the early 1900s, nutria were imported and farmed in California for the fur trade. Following the market collapse, escaped and released nutria established small populations that were eventually eradicated by the late 1970s. In 2017, nutria were again discovered within the San Joaquin Valley.

Nutria pose a "triple threat" to California's future as a top-rated agricultural pest, a destroyer of critical wetlands needed by native wildlife, and a public safety risk as their destructive burrowing jeopardizes the state's water delivery and flood control infrastructure. CDFW has formed partnerships with both the U.S. Department of Agriculture and the California Department of Food and Agriculture to survey and eradicate nutria from the state.

To date:

- CDFW and USDA have taken or confirmed the take of 410 nutria in five counties – 330 from Merced County, 65 from San Joaquin County, 12 from Stanislaus County, two from Mariposa County and one from Fresno County. Nutria have also been confirmed in Tuolumne County.

- The eradication efforts have prioritized the one known nutria population in the Sacramento-San Joaquin Delta in order to limit their spread and impact on California's most important water resource and the heart of the state's water delivery and infrastructure. Of the 65 nutria taken from San Joaquin County, 64 were captured within Walthall Slough near Manteca. Survey crews have not detected nutria elsewhere in the Sacramento-San Joaquin Delta.

- Nutria are a semi-aquatic species never far from water. CDFW has identified approximately 1.8 million acres of habitat suitable for nutria in California, mostly in the state's central regions. CDFW so far has assessed more than 300,000 acres in three counties: Merced, Stanislaus and San Joaquin.

- In suitable nutria habitat, CDFW and its partners set up trail cameras to monitor for nutria presence and deploy traps to catch the nutria once their presence has been confirmed. Over the past year, the project has set up 487 camera stations, conducted more than 1,600 camera checks and deployed 995 trap sets for a total of 12,930 trap nights.

- CDFW's eradication efforts have the broad support of the state's agricultural community. As a top-rated agricultural pest, nutria threaten California's nearly $50 billion agricultural industry. San Joaquin Valley farmers have donated five tons of sweet potatoes to use as bait to trap nutria.

- Nutria have been documented on federal, state and private property. Gaining access to private property is key to eradication efforts and to prevent isolated populations from re-infesting the state. More than 2,400 private property owners have granted CDFW written permission to survey and trap nutria on their land, which CDFW does at no cost to property owners.

- CDFW has received widespread public support for its eradication efforts. CDFW's Invasive Species "hotline" and corresponding e-mail account has received 357 nutria reports from the public over the past year. While most of these have turned out to be false reports – either sightings of other wildlife mistaken for nutria or reports that lack enough information to confirm – public reporting will continue to be important to determine the full extent of the infestation. When possible, reports should be accompanied by photos and videos. CDFW's toll-free reporting hotline is (866) 440-9530. The e-mail address to report nutria sightings is invasives@wildlife.ca.gov (mailto:invasives@wildlife.ca.gov). CDFW's nutria eradication webpage at wildlife.ca.gov/nutria (http://www.wildlife.ca.gov/nutria) offers references for distinguishing nutria from other similar aquatic animals.

- Public education and outreach are key components of CDFW's eradication efforts. In addition to numerous nutria presentations in front of scientific, agricultural and community organizations, CDFW has partnered with the Delta Stewardship Council to produce a nutria identification pocket

guide. The guide is available at http://deltacouncil.ca.gov/nutria-pocket-guide (http://deltacouncil.ca.gov/nutria-pocket-guide).

- CDFW has secured more than $3 million in state and federal grants to support nutria eradication. The Sacramento-San Joaquin Delta Conservancy has awarded CDFW $1.2 million over three years; California's Wildlife Conservation Board has awarded CDFW $600,000 over three years; and the U.S. Fish and Wildlife Service's State Wildlife Grant Program has awarded CDFW $1.25 million over three years.

- Future CDFW nutria efforts include using detection dogs to help locate remnant nutria or confirm their absence. CDFW also is in the early stages of developing a "Judas nutria" project where surgically sterilized nutria, which are social animals, are outfitted with radio telemetry collars and released back into the environment to lead biologists to other nutria.

- CDFW's eradication efforts are modeled after those in the Chesapeake Bay in the 2000s. That ongoing effort is led by the federal government and has removed more than 14,000 nutria from 250,000 acres in the Delmarva Peninsula. Though nutria are established in more than a dozen U.S. states, including Washington, Oregon, and, most notably, Louisiana, the Chesapeake Bay effort remains the only successful, large-scale nutria eradication in U.S. history.

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NEWS

CDFW News

CONSERVATION EDUCATION, **HABITAT CONSERVATION**, **INVASIVE SPECIES**, **PUBLIC PARTICIPATION**, **YOUTH**

Youth Art Contest Encourages Kids to Learn about Invasive Nutria

APRIL 2, 2019 | KMACINTY

The California Department of Fish and Wildlife (CDFW) is pleased to announce the sixth annual California Invasive Species Youth Art Contest, which this year challenges students to creatively present messages about nutria (*Myocastor coypus*), a relatively recent – and destructive – invasive species in California.

The contest is offered by CDFW's Invasive Species Program as part of California Invasive Species Action Week, June 1-9.

There are three age divisions, for youths in grades 2-4, 5-8 and 9-12. All types of media are welcome and encouraged, including (but not limited to) drawings, paintings, animations, comic strips, videos and public service announcements. Entries should be in keeping with the 2019 theme, "Say No to Nutria."

Nutria are large, semi-aquatic rodents from South America that have been found in California's Central Valley and southern Delta. Nutria cause extensive damage to wetland habitats, agricultural crops, streambanks and levees. More information about nutria can be found on CDFW's Nutria Incident page (https://www.wildlife.ca.gov/nutria).

The top three winners in each division will receive awards and have their entries displayed on CDFW's Invasive Species Action Week webpage.

The deadline for art contest entries is May 3. Completed entries and entry forms should be sent to:

CDFW Invasive Species Program
P.O. Box 944209
Sacramento, CA 94244-2090

The entry form and entries may also be emailed to invasives@wildlife.ca.gov (mailto:invasives@wildlife.ca.gov).

The goal of California Invasive Species Action Week is to increase public awareness of invasive species issues and encourage public participation in the fight against California's invasive species and their impacts on our natural resources.

Action Week activities will include presentations on aquatic and terrestrial invasives, guided outings to observe and assess infested areas, invasive species removal efforts, habitat restoration projects and the announcement of the winners of the youth poster contest. Opportunities for youths and adults to participate or volunteer will be available across the state through participating agencies, organizations and volunteer groups, with information and details to be provided on the Action Week webpage.

Please visit www.wildlife.ca.gov/conservation/invasives/action-week/poster-contest (http://www.wildlife.ca.gov/conservation/invasives/action-week/poster-contest) for details about the 2019 contest, to view past winning entries and find more information on how to participate in Action Week.

The mission of CDFW's Invasive Species Program is to reduce the impacts of invasive species on the wildlands and waterways of California. The program is involved in efforts to prevent the introduction of these species into the state, detect and respond to introductions when they occur and prevent the spread of those species that have established.

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ART CONTEST **CALIFORNIA INVASIVE SPECIES ACTION WEEK** **INVASIVE SPECIES** **NUTRIA** **YOUTH**

Department Informational Items – Marine Region

Fish and Game Commission Meeting
Santa Monica, CA
April 17, 2019

Presented by:

Craig Shuman, D. Env.
Regional Manager
Marine Region

Marine Region 2018 Year in Review

California Sheephead

California Sheephead

Staff collaborated with the Sportfishing Association of California to develop sampling protocols and collect California Sheephead for a potential fillet length regulation. A total of 180 California Sheephead collected via live trapping were measured and filleted on three sampling trips at Long Beach, Dana Point and Point Loma. The relationship between total length and average fillet length was used to inform a proposed minimum fillet length. The information was presented to the California Fish and Game Commission as a proposed California Sheephead fillet length regulation.

California spiny lobster

California Spiny Lobster

New regulations to implement the Spiny Lobster Fishery Management Plan went into effect during the 2017-2018 commercial and recreational lobster seasons. Regulation changes included a commercial lobster trap limit of 300 traps, a trap tag program, a new recreational season opening time of 6:00 a.m. (previously midnight), and hoop net marking requirements. Staff produced outreach materials and answered a variety of questions from the public regarding the new regulations.

The 2017-2018 lobster fishing season saw just over 688,000 pounds of lobster landed fishery, a 5 percent increase from (~656,000 pounds were landed in season). The 2017-2018 recreation saw a lobster report card return r a rate that has held steady for the The estimated catch for the recre approximately 275,000 pounds, c total (commercial plus recreation

In 2018, the first annual review Fishery Management Plan harves completed, evaluating the 2016-2 indicators (catch, catch per unit e potential ratio) fell above the thre management actions were trigge to monitor and adaptively manag scribed by the fishery manageme changes in fishery and ocean con

The 2017-2018 commercial lobs first season in which lobster oper were required to complete and su Season Spiny Lobster Trap Loss R (affidavit, CDFW Form 1020). This part of a suite of changes to commercial lobster fishing regulations associated with the fishery management plan. The data collected from the affidavit will help CDFW estimate the number of traps lost during a season as well as inform gear recovery programs and studies aimed at minimizing the impacts of fishing gear interactions in the marine environment.

Upon the conclusion of the 2017-2018 commercial lobster season, CDFW saw an affidavit submittal rate of about 90 percent. The estimated average trap loss per active permit holder was approximately 12 percent of the maximum allowed number of traps (300 traps per lobster operator permit). An updated estimate of trap loss based on the reported number of deployed traps will be provided once commercial lobster fishing logbook data become available.

Due to human health concerns caused by high levels of domoic acid in lobster, waters around Anacapa Island, Ventura County and the east end of Santa Cruz Island, Santa Barbara County were closed to the commercial take of spiny lobster on October 16, 2018, as recommended by state health agencies. Staff coordinated with the California Department of Public Health and the Office of Environmental Health Hazard Assessment to inform the public and commercial fishery participants of the area closures via press releases and updates on the CDFW website. The commercial spiny

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E-Tix is a notable accomplishment for CDFW and a significant step forward in modernizing the state's fisheries landing reporting system.

www.wildlife.ca.gov/Fishing/Ocean/Year-In-Review

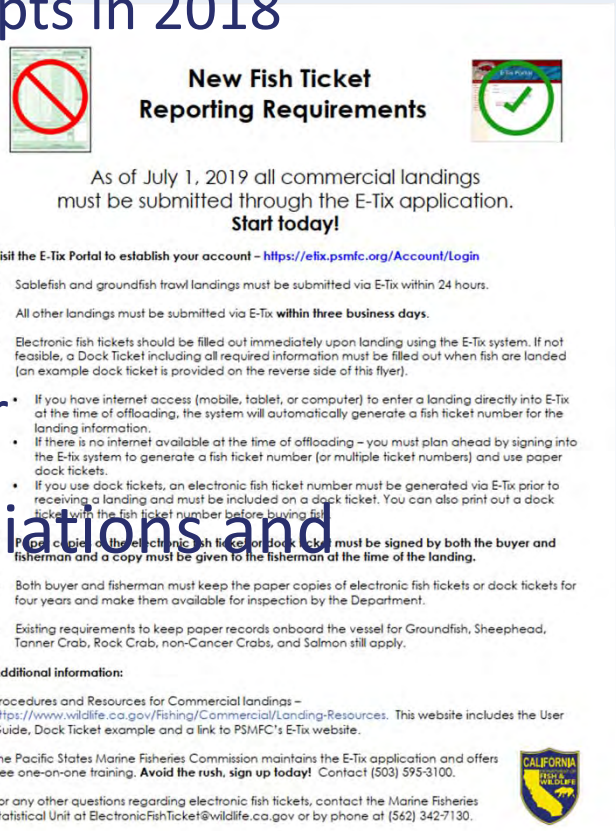
- Update on annual recreational ocean salmon and Pacific halibut
- Update on federal fishery disaster declaration requests

E- Tix Timeline and Status Update

- October 12, 2017
  - Adopted Electronic Landings Reporting
- July 1, 2018
  - Voluntary e-Reporting
- July 1, 2019
  - Mandatory e-Reporting
- As of March 22, 2019
  - 238 Fish Businesses Registered with E-Tix
  - 115 Currently Using E-Tix

E-Tix Outreach Efforts

- Phone Calls to 45 Fish Businesses
  - Submitted high volume Landing Receipts in 2018
- Email to 590 Fish Businesses
  - Reminder with E-Tix Flyer
- MR Field Staff Site Visits
  - Continue the Conversation, E-Tix Flyer
- Communication with Industry Associations and Networks
  - Continue spreading the word



New Fish Ticket Reporting Requirements

As of July 1, 2019 all commercial landings must be submitted through the E-Tix application.
Start today!

Visit the E-Tix Portal to establish your account – https://elix.psmfc.org/Account/Login

- Sablefish and groundfish trawl landings must be submitted via E-Tix within 24 hours.
- All other landings must be submitted via E-Tix **within three business days.**
- Electronic fish tickets should be filled out immediately upon landing using the E-Tix system. If not feasible, a Dock Ticket including all required information must be filled out when fish are landed (an example dock ticket is provided on the reverse side of this flyer).
  - If you have internet access (mobile, tablet, or computer) to enter a landing directly into E-Tix at the time of offloading, the system will automatically generate a fish ticket number for the landing information.
  - If there is no internet available at the time of offloading – you must plan ahead by signing into the E-tix system to generate a fish ticket number (or multiple ticket numbers) and use paper dock tickets.
  - If you use dock tickets, an electronic fish ticket number must be generated via E-Tix prior to receiving a landing and must be included on a dock ticket. You can also print out a dock ticket with the fish ticket number before buying fish.
- **Paper copies of the electronic fish ticket or dock ticket must be signed by both the buyer and fisherman and a copy must be given to the fisherman at the time of the landing.**
- Both buyer and fisherman must keep the paper copies of electronic fish tickets or dock tickets for four years and make them available for inspection by the Department.
- Existing requirements to keep paper records onboard the vessel for Groundfish, Sheephead, Tanner Crab, Rock Crab, non-Cancer Crabs, and Salmon still apply.

Additional information:

Procedures and Resources for Commercial landings – https://www.wildlife.ca.gov/Fishing/Commercial/Landing-Resources. This website includes the User Guide, Dock Ticket example and a link to PSMFC's E-Tix website.

The Pacific States Marine Fisheries Commission maintains the E-Tix application and offers free one-on-one training. **Avoid the rush, sign up today!** Contact (503) 595-3100.

For any other questions regarding electronic fish tickets, contact the Marine Fisheries Statistical Unit at ElectronicFishTicket@wildlife.ca.gov or by phone at (562) 342-7130.

E-Tix Outreach Efforts (cont.)

- Traveling Roadshow

  Informal Q&A, E-Tix Live Demo, E-Tix Registration

  4 Locations:

  - April 30, 2019, **Sausalito**, USACE Bay Model Visitor's Center
  - May 7, 2019, **Santa Barbara**, Waterfront Dept. Marine Center Classroom
  - May 8, 2019, **San Pedro**, Cabrillo Marine Aquarium
  - May 9, 219, **San Diego**, Hubbs-Sea World Research Institute

Thank You

- Commercial Landings Resources

  https://www.wildlife.ca.gov/Fishing/Commercial/Landing-Resources

- Marine Fisheries Statistical Unit

  (562) 342-7130

  ElectronicFishTicket@wildlife.ca.gov

- PSMFC E-Tix Portal

  https://etix.psmfc.org/Account/Login

CALIFORNIA DEPARTMENT OF FISH & WILDLIFE

MARINE REGION

2018 YEAR IN REVIEW

Message from the Regional Manager

We are fortunate to live in an era where we have massive amounts of data at our fingertips. With a few clicks of the mouse, we can pull up almost any fact from recorded or geologic history. When I come across something extraordinary, I often find it comforting to look back across the historical record to see that this is not the first time that society or, in some cases, the planet has experienced that event.

It is with this in mind that I find the numerous climatic records broken in 2018 troubling. Many of you may recall that it was really hot throughout much of California last summer. The Van Nuys airport broke the all-time record at a blistering 117° F on July 6, 2018, with downtown Los Angeles and UCLA recording 108° F and 111° F, respectively. This was part of a global heat event that saw what is possibly an all-time high for Africa of 124° F and numerous heat records around the globe. These heat records correlate with the global trend of rising carbon dioxide. As measured in ice cores, over the past 400,000 years global carbon dioxide levels never rose above 300 parts per million. The planet reached that level in 1950 and is currently over 400 parts per million. These records are consistent with the unprecedented rates of change in our climate that are manifested in more pronounced periods of drought, heat waves, floods, and fire. Fire "season" in California continues to grow longer and more widespread. Tragically, 2018 saw both the largest (Mendocino Complex fire in July) and deadliest (Camp Fire in November) wildfires in California history.

The ocean is also experiencing a wave of new records. 2017 was proclaimed the warmest year on record for the global ocean in a peer-reviewed article published in the journal *Advances in Atmospheric Sciences* and on August 1, sea surface temperature at the Scripps Pier hit 78.6° F, the warmest sea surface temperature recorded there since measurements began in 1916. Arctic sea ice and ice sheets are continuing to decrease and sea level continues its rising trend.

While many of us enjoyed basking in the warm ocean waters this past summer, and some took advantage of the great fishing opportunities, I can't help but wonder what price we might pay for these record-setting conditions. Will periodic closures of our iconic Dungeness crab and lobster fisheries due to harmful algal blooms become the norm rather than the exception? Are the warm waters in Southern California related to the conditions in Central and Northern California that have led to widespread loss of kelp, urchin barrens and the closure of our beloved recreational abalone fishery?

The Fourth National Climate Assessment released in late November 2018 found that coastal communities and the ecosystems that support them are increasingly threatened by the impacts of climate change. We must be prepared to manage the impacts of warmer water temperatures, ocean acidification, sea level rise, and coastal erosion that are projected to change coastal ecosystems, threatening historic fisheries, ecosystem services, and our coastal communities.

The ocean is unpredictable and dynamic, but we have been able to use our observational records to tease out recurring trends such as the El Niño Southern Oscillation and the Pacific Decadal Oscillation to inform our approaches to management. We must now learn to adapt to possible new and unforeseen ocean events such as the warm water blob of 2015 that may not follow a predictable cycle, or recur in a cycle we do not yet understand.

While all this possible doom and gloom may seem overwhelming, we must remember that we have overcome huge environmental problems before. Over the last 50 years our air and water have gotten considerably cleaner and we have brought back several species from the brink of extinction, including California's iconic brown pelican. As the group of individuals responsible for the sustainable management of California's marine resources, staff in the California Department of Fish and Wildlife's Marine Region will remain vigilant. Working with our partners, we will continue to enact data collection and management measures that account for both the anticipated and unanticipated changes we see on the horizon. This will enable us to meet daunting challenges head-on and fulfill our mission to *protect, maintain, enhance, and restore California's marine ecosystems for their ecological value and their use and enjoyment by the public through good science and effective communication.*

- Dr. Craig Shuman, Marine Region Manager

Contents

On The Cover: Kelp Bass and a school of Salema over a surfgrass bed at Laguna Beach State Marine Reserve. photo by S. Wertz

2018 Marine Region-Wide Updates

Administration

The accomplishments of the Marine Region would not be possible without the work of our administrative staff. Administrative staff work tirelessly behind the scenes to support Region staff, ensuring that they have the tools they need to get the job done. Marine Region administrative staff manage storage and office facilities for staff and vessels, procure supplies for field work, laboratories, and offices while managing and staying within the Region's budget. Administrative staff also help staff conform to state laws and California Department of Fish and Wildlife (CDFW) policies as they work to help the Marine Region achieve its goals.

California Cooperative Fisheries Investigations (CalCOFI)

The Marine Region hosted the 2018 CalCOFI meeting in December that included a symposium titled "Spatial Dynamics and Organization of Populations in Response to Environmental Parameters." The symposium highlighted current efforts to better understand the spatial dynamics of marine resources in response to environmental factors and the ability to predict or forecast them. Topics included population shifts, egg production, modeling, applications for stock assessments, and other areas with management implications. In addition, the Marine Region joined UC Davis to host a special mini-symposium that included a panel session moderated by Marine Region staff. The mini-symposium focused on "Emerging Tools in Adaptive Management of California's Marine Protected Areas." Staff presented several informational posters about coastal pelagic and highly migratory fisheries, and marine protected area management. Staff also gave a presentation on the MPA Monitoring Action Plan.

Electronic Reporting for Commercial Fisheries Landings

CDFW, in collaboration with Pacific States Marine Fisheries Commission, launched a web-based fish ticket application called "E-Tix" that will be used for all California commercial fisheries landings. E-Tix went live for California state fisheries on July 1, 2018 for a transitional one-year period. The use of E-Tix is a notable accomplishment for CDFW and a significant step forward in modernizing California's fisheries landing reporting system. In addition, CDFW's Data and Technology Division replaced the outdated Commercial Fisheries Information System with a new, modern Marine Landings Data System (MLDS) to house and manage landings data. All data submitted using E-Tix will be automatically transferred to MLDS twice a day to produce near real-time landing records.

Staff from across the Marine Region played instrumental roles in the Region's transition from paper landing receipts to electronic records, as well as replacing the Commercial Fisheries Information System with the new MLDS. Staff identified data management concerns with the new system and developed changes to field data collection methods to ensure that management needs are met during the transition.

Staff also developed new ways to conduct the needed QA/QC to ensure the maintenance of accurate data when paper receipts are no longer available to compare with the electronic data. Prior to its rollout, project staff spent significant time testing MLDS functionality to identify technical issues and ensure data accuracy and accessibility. In addition to these internal support needs, staff assisted with preparation of outreach materials for fish buyers to inform them of the new processes for submitting and recording landings information.

Marine Life Management Master Plan

At its June 2018 meeting in Sacramento, the California Fish and Game Commission voted unanimously to adopt the *2018 Master Plan for Fisheries: A Guide for Implementation of the Marine Life Management Act*. Adoption of the 2018 Master Plan was the culmination of over two years of collaborative efforts, and sets the stage for implementation of the plan.

Initial implementation included work throughout the Marine Region on the development of Enhanced Status Reports for various state-managed species, which will be released in 2019. In addition, Marine Region staff worked with partners to develop a socioeconomic guidance document that would inform implementation of the 2018 Master Plan. This document will help staff to build socioeconomic narratives that can be incorporated into management documents (for example Enhanced Status Reports, Fishery Management Plans, and California Fish and Game Commission rulemakings) to better describe socioeconomic conditions and impacts related

to how fisheries are managed. The final guidance document can be accessed at www.opc.ca.gov/socioeconomic-guidance-for-fisheries-management/

New Resources for the Marine Region

The 2018-2019 State Budget allocated new funding and positions to CDFW to (1) continue the current level of service for core fish and wildlife program; (2) augment high-priority programs that are consistent with the priorities identified in the most recent update to the Strategic Vision report; and (3) initiate an independent, service-based budget review and develop a tracking system to support an analysis of CDFW's existing revenue structure and program activities.

The augmentation of high-priority programs included eleven new positions to focus on marine fisheries management and data streamlining. Working in conjunction with CDFW's Data Technology Division, Marine Region staff spent the second half of 2018 filling the new positions and working on the focal areas that include state-managed sustainable fisheries under the 2018 Master Plan for Fisheries, climate change and fisheries, fisheries innovation, whale-safe fisheries, and centralized electronic data collection, monitoring, and reporting.

Whale and Turtle Safe Fisheries

Maintaining whale and turtle safe fisheries continues to be a high priority for the Marine Region. Leveraging existing resources with new positions established in the 2018-2019 budget, we expanded our efforts and prepared for new authority from the State Legislature in an effort to reduce whale and turtle interactions with state-managed fisheries.

The Dungeness Crab Fishing Gear Working Group met throughout the year to continue to develop the Risk Assessment and Mitigation Program (RAMP). The 2017-2018 Dungeness crab pre-season assessment identified a moderate entanglement risk due to the potential overlap of whale distributions and gear deployment. Aerial surveys conducted shortly after the season opened in both the northern and southern fishery management areas suggested that risk was low because whales were largely offshore, away from the majority of trap gear. In early June, an evaluation team was convened in response to an increase in reported entanglements. Since the season was nearly over and scheduled to close in the area of concern on June 30th, the Working Group recommended a low level of management intervention by encouraging the fleet to follow the Best Practices Guide. During 2018 and 2019 the RAMP will assess entanglement risks for both blue and humpback whales in relation to forage, fishing activity, and ocean conditions. New legislation (SB 1309) gives the CDFW Director interim authority to close the Dungeness crab fishery based on increased marine life entanglement risk while the RAMP is developed. The RAMP will be formalized in regulation on or before November 1, 2020.

The Working Group distributed an updated Best Practices Guide prior to the 2018-2019 Dungeness crab fishing season, and obtained funding from the California Ocean Protection Council to install solar data loggers on 40 commercial fishing and 20 whale watching vessels. Solar data loggers are expected to improve data streams and allow for real-time analyses of fishing activity and whale distributions.

On November 26, 2018, CDFW formally notified NOAA National Marine Fisheries Service of its intent to pursue an Incidental Take Permit under Section 10 of the Endangered Species Act, which would consider whale and turtle interactions with gear from the Dungeness crab fishery. Additional updates will be available at www.wildlife.ca.gov/Crabs.

New regulations were enacted to reduce the risk of marine life entanglements in commercial Dungeness crab fishing gear. These new regulations establish limits on the number of additional buoys that can be attached at the surface after the main buoy and the maximum length of line.

E-Tix is a notable accomplishment for CDFW and a significant step forward in modernizing the state's fisheries landing reporting system.

State-Managed Marine Programs

These programs are responsible for fisheries managed by the State alone.

Abalone dive survey briefing photo by K. Joe

Abalone

Recreational Red Abalone Fishery – The red abalone stock continued to decline due to sustained poor environmental conditions along the North Coast. At its December meeting, the California Fish and Game Commission approved keeping the red abalone fishery closed for two more years. During the closure, CDFW will complete work on a fishery management plan which will specify conditions for reopening the red abalone fishery along with other management parameters.

Over the past five years, ocean warming and a massive purple sea urchin population explosion have taken their toll on red abalone. Normal ocean temperatures in recent years have not offset the detrimental effects from the expanded purple sea urchin population, and abalone populations continued to decline.

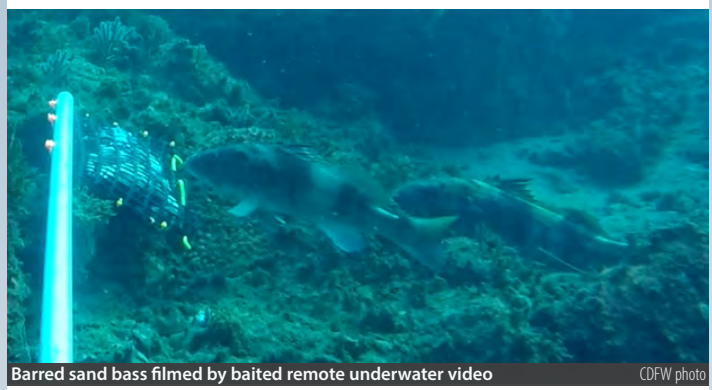
Dive survey efforts in 2018 covered more than the equivalent of 2.7 football fields across seven fished sites with more than 250 hours spent executing underwater surveys. Reproduction was poor in the fishery with few larvae or newly settled red abalone found during the summer of 2018. Surveys revealed that extremely low kelp and algal abundances, likely reduced by large numbers of herbivorous purple sea urchin, continued from previous years and resulted in significant mortality of red abalone in 2018. Red abalone densities continued to decline, with an overall average density of 0.11 abalone per square meter for seven fished sites (closure trigger is 0.3 abalone per square meter).

Red Abalone Fishery Management Plan Progress – The Red Abalone Fishery Management Plan's proposed management strategies and frameworks were peer reviewed in 2018, which is a major milestone in the development process. The year started with several public meetings with the Recreational Abalone Advisory Committee and interested stakeholders to present two proposed fishery management strategies, one put forward by CDFW and the other by a Nature Conservancy-led collaborative stakeholder group. Shortly after the public meetings, CDFW worked with the California Ocean Science Trust to develop and conduct the scientific peer review process to critically review the science supporting the two management proposals. The peer review ran from late spring through early fall and the final report was presented to the California Fish and Game Commission in October. The review found that over all, both management proposals were sound, but each had strengths and weaknesses that resulted in a high level of uncertainty in managing the fishery moving forward. The overarching recommendation was to integrate both management strategies to help reduce the uncertainty and capitalize on the best available science. Further recommendations and advice were provided on how to reduce the management uncertainty of all fishery management indicators. CDFW and the California Fish and Game Commission will work with all interested partners in 2019 to continue development of an all-encompassing management strategy that addresses the peer review recommendations and completes the draft fishery management plan.

Abalone Restoration: Captive Breeding Program for Endangered White Abalone – The White Abalone Restoration Consortium (consisting of CDFW, university, federal, and aquarium scientists), which focuses on restoration of this critically endangered species, continued their work in 2018. The growing production of the Captive White Abalone Breeding Program is progressing towards the first ocean stocking of captive-bred animals. To prepare for that next milestone, staff led efforts to scout potential sites for the outplant of captive-reared white abalone. The first outplant is planned for the fall of 2019. Additionally, staff worked with program partners to generate and submit the next grant project proposal to NOAA Fisheries' Section

6 grant program. If successful, the project grant will continue the restoration program for the next three fiscal years starting July 1, 2019.

For more information about abalone, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/Invertebrates/Abalone.



Barred sand bass filmed by baited remote underwater video CDFW photo

Barred Sand Bass and Kelp Bass

To help evaluate the 2013 regulation changes for the basses, staff completed 48 sampling trips aboard commercial passenger fishing vessels to collect information on numbers, sizes, and mortality of released fish. Staff collected data on more than 2,093 Kelp Bass and 462 Barred Sand Bass. Most discards were between 13 and 14 inches long. In 2018, three percent of Kelp Bass and 20 percent of Barred Sand Bass released suffered barotrauma. All Barred Sand Bass were released alive, while half of one percent of Kelp Bass suffered release mortality.

Staff submitted a research article about using Kelp Bass to assess trophic indicators of ecosystem health in MPAs (Davis, J.P., Valle, C.F., Haggerty, M.B., Walker, K., Gliniak, H.L., Van Diggelen, A.D., Win, R.E. and S.P. Wertz. 2019. *Testing trophic indicators of fishery health in California's marine protected areas for a generalist carnivore.* Ecological Indicators. 97: 419-428. doi.org/10.1016/j.ecolind.2018.10.027). The study was a collaboration between Marine Region scientists on the Southern California Fisheries Research and Management Project and the Statewide Marine Protected Area Management Project. The results showed that non-lethal sampling of fin tissue from Kelp Bass will be effective for future stable isotope studies assessing their feeding level. The study also found that impacts of no-take marine protected areas on kelp forest food webs were variable across locations, and that opportunistic feeding by generalist predators on pelagic sources may mask the effects of management.

Staff completed fishery-independent surveys of Barred Sand Bass for the second consecutive year during fall 2018. Preliminary results from a pilot study in 2017 indicated that Barred Sand Bass were more common during the fall at artificial reefs off Los Angeles County. Results from the pilot study are currently being analyzed and prepared for publication in 2019. Between September and November 2018, CDFW divers and staff completed fall fish surveys aboard the R/V *Garibaldi* at two natural and four artificial reefs near Los Angeles Harbor and the Palos Verdes Peninsula. Standardized counts of Barred Sand Bass were recorded on scuba and baited remote underwater video. An additional survey site was investigated at the Hermosa Beach artificial reef, which appeared promising and will be incorporated into the 2019 survey design. Surveys using both methodologies will continue to provide a long-term dataset of Barred Sand Bass abundance annually.

Staff continued to test the use of length-at-age-based models and management strategy evaluation for managing the bass fisheries. The Data Limited Methods Toolkit is being explored as an option for using management strategy evaluation, with Kelp Bass as one of the new test case species. Staff worked on gathering and analyzing data to be used in the toolkit. A completed manuscript of the Barred Sand Bass age and growth study was submitted for publication.

For more information about bass research and management, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/SCFRMP.

Fish sampling on the Eel River Estuary CDFW photo by A. Frimodig

Bay and Estuary Management

Humboldt Bay – Staff completed the final year of field sampling and associated reporting for a project evaluating the spawning and larval distribution of Longfin Smelt in Humboldt Bay and its tributaries, which was funded by a state wildlife grant program.

In collaboration with California Sea Grant, Humboldt State University, Hog Island Oyster Company and the Wiyot Tribe, staff assisted with the design and implementation of a multi-year project to 1) understand

how physical and biological factors in Humboldt Bay may alter ocean acidification conditions compared to open coastal waters; 2) investigate the extent to which eelgrass reduces the impact of ocean acidification on the growth of commercially grown oysters in Humboldt Bay, and 3) expand eelgrass monitoring within Humboldt Bay as the foundation for a collaborative bay-wide eelgrass management plan.

Eel River Estuary – In collaboration with CDFW's Northern Region, staff participated on the management team for the Ocean Ranch Estuary Restoration Project to restore 473 acres of tidal wetlands in the Eel River estuary. As part of the baseline data collection effort, staff designed and implemented a monitoring plan to characterize the seasonal fish assemblage within CDFW's Ocean Ranch Unit.

Russian River Estuary – Staff completed an accuracy assessment of the 2010 Ocean Imaging marine protected area eelgrass spatial data on the Russian River Estuary, which misclassified 11.36 acres of widgeon grass (*Ruppia maritima*) as eelgrass in that estuary; the determination was made that there is no eelgrass habitat in the Russian River estuary.

Estero Americano and Estero de San Antonio Estuaries – In collaboration with the Environmental Review Project, staff surveyed and mapped eelgrass habitat in these two estuaries located in Sonoma and Marin counties, respectively.

Tomales Bay – Staff received the 2017 Greater Farallones National Marine Sanctuary Tomales Bay eelgrass spatial dataset. These data were incorporated into the Northern California eelgrass spatial dataset, replacing the previous 2013 CDFW Tomales Bay Eelgrass spatial dataset. The dataset is a valuable resource for managing aquaculture leases.

Staff began developing methodology for using unmanned aerial vehicles to map eelgrass habitat and gauge potential associated sport clamming impacts, in collaboration with CDFW (non-Marine Region), GIS, and Invertebrate Management Project staff.

San Francisco Bay – Staff received 2,500 new Bay Shrimp Logs (= 50 logbooks) from the Office of State Publishing. In 2018, staff distributed 900 logs to four of the six active trawlers in the bay shrimp fishery and worked with CDFW's Law Enforcement Division to address bay shrimp fleet compliance issues. Staff also provided boat support to the National Parks Service Golden Gate National Recreation Area for a federal sea cave mapping study.

For more information about bay and estuary management, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/ABMP/Research.

Box crab CDFW photo by J. Coates

Box Crab

Commercial landings of non-*Cancer* crab species caught incidentally in other targeted trap fisheries increased dramatically in 2017. The interest in (and increased landings of) brown box crab was particularly large. In response, the CDFW Director declared non-*Cancer* crabs to be an emerging fishery in April 2018. CDFW staff developed a regulatory proposal to limit incidental take of these species, which was adopted by the California Fish and Game Commission in October. Concurrent with the regulatory proposal, staff developed a proposal for a collaborative research program with fishermen to investigate the feasibility of creating a target fishery for box crab under experimental gear permits. Recommendations for the program were shaped by constituent feedback through regular communication with CDFW staff, public constituent meetings, and the California Fish and Game Commission's Marine Resources Committee meetings. With support from the California Ocean Protection Council, the research program will use electronic fishery monitoring tools both in studying box crabs and to provide guidance to the State on potential future use of this technique. Experimental permits were approved at the December California Fish and Game Commission meeting and will allow for program initiation in 2019.

For more information about box crab, download the CDFW presentation available at nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=160457.

Researchers confirmed that there is no eelgrass habitat in the Russian River estuary.

Juvenile California Halibut CDFW photo by B. Mattioli

Fishery-independent trawl surveys began in 2018 to help determine juvenile California Halibut abundance.

California Halibut

The California Halibut (halibut) fisheries in Central California continued to be monitored and sampled by staff in the Monterey Bay, San Francisco, and Eureka areas. In all areas, recreational catch and commercial landings increased, primarily due to strong recruitment of legal-sized fish. Commercial trawl and hook-and-line landings and recreational catch were sampled dockside, trawl bycatch samples were collected, and observations were made onboard commercial passenger fishing vessels. Juvenile halibut were collected from a research trawler in San Francisco Bay. Observations of new fishery recruits declined, and most juveniles appeared to be from past recruitment events. Due to previous episodes of good recruitment likely associated with prolonged warm water events three to four years ago, significant amounts of under-sized halibut were encountered in the recreational hook-and-line fisheries for the second year in a row.

Staff have now determined ages for 4,000 halibut otoliths (ear bones) from Northern and southern California by examining thin sections, and an age validation study is under way using captive juvenile halibut injected with oxytetracycline, which marks the otolith.

Staff collaborated with the National Marine Fisheries Service to conduct oral interviews with halibut trawl fishermen about the history of the industry. This project was funded through a grant with Preserve America. Fisherman summary profiles accompanied by selected clips and photos will be made available to the public on CDFW's Finfish Management Project web page, with a link to the full interview and transcript, which will be housed in the NOAA Fisheries "Voices from the Fisheries" database.

The first year of fishery-independent trawl surveys were conducted to begin quantifying an index of juvenile halibut abundance across multiple embayments and nearshore locations in Southern California. Eleven locations from Oceanside Beach in San Diego County to Santa Monica Bay in Los Angeles County were surveyed in spring and fall 2018. During the spring surveys, 247 halibut ranging in size from 3½ in. to 25 in. (89 to 643 mm) were caught in 85 ten-minute trawls. In the fall, 415 individuals ranging in size from 1.2 in. to 16 in. (32 to 409 mm) were caught in 97 ten-minute trawls. One halibut tagged during the spring surveys was recaptured in the same location in the fall; it was caught in the Dana Point Harbor and grew .66 in. (17 mm) in the five months between surveys. These index-focused trawl surveys and collaboration with the Southern California Bight 2018 Regional Monitoring Program contributed 38 halibut to the Northern/Central California Finfish Research and Management Project's aging study.

Staff developed separate stock assessments for northern and southern California populations of halibut. The process involved analyzing more than 47 years of fisheries, survey, and biological data obtained from a variety of sources, including CDFW, NOAA Fisheries, and the Pacific States Marine Fisheries Commission. Staff applied sex-structured statistical catch-at-age models to those data using the NOAA Fisheries program Stock Synthesis, and critically evaluated the model output. An external peer review panel will be convened to review the results in 2019 after an internal review of the results is completed.

Staff continued to develop a management strategy evaluation for halibut in conjunction with the Data Limited Methods Toolkit project. Staff built an operating model that simulates halibut population dynamics and continues to test this 'virtual fishery' under a wide range of management scenarios. The goal is to determine the likelihood of achieving certain sustainability and performance metrics into the future, given different management approaches.

For more information about California Halibut, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/NCCFRMP/Halibut-Studies and wildlife.ca.gov/Conservation/Marine/SCFRMP/Halibut.

California Sheephead CDFW photo by M. Elyash

California Sheephead

Staff collaborated with the Sportfishing Association of California to develop sampling protocols and collect California Sheephead for a potential fillet length regulation. A total of 180 California Sheephead collected via live trapping were measured and filleted on three sampling trips at Long Beach, Dana Point and Point Loma. The relationship between total length and average fillet length was used to inform a proposed minimum fillet length. The information was presented to the California Fish and Game Commission as a proposed California Sheephead fillet length regulation.

California spiny lobster CDFW photo by B. Mattioli

California Spiny Lobster

New regulations to implement the Spiny Lobster Fishery Management Plan went into effect during the 2017-2018 commercial and recreational lobster seasons. Regulation changes included a commercial lobster trap limit of 300 traps, a trap tag program, a new recreational season opening time of 6:00 a.m. (previously midnight), and hoop net marking requirements. Staff produced outreach materials and answered a variety of questions from the public regarding the new regulations.

The 2017-2018 lobster fishing season saw just over 688,000 pounds of lobster landed by the commercial fishery, a 5 percent increase from the previous season (~656,000 pounds were landed in the 2016-2017 season). The 2017-2018 recreational lobster season saw a lobster report card return rate of 50 percent, a rate that has held steady for the last few years. The estimated catch for the recreational fishery was approximately 275,000 pounds, or 29 percent of the total (commercial plus recreational) catch.

In 2018, the first annual review of the Spiny Lobster Fishery Management Plan harvest control rules was completed, evaluating the 2016-2017 season. All three indicators (catch, catch per unit effort, and spawning potential ratio) fell above the threshold value and no management actions were triggered. Staff will continue to monitor and adaptively manage the fishery as prescribed by the fishery management plan, in response to changes in fishery and ocean conditions.

The 2017-2018 commercial lobster season was the first season in which lobster operator permit holders were required to complete and submit an End of Season Spiny Lobster Trap Loss Reporting Affidavit (affidavit, CDFW Form 1020). This new requirement is part of a suite of changes to commercial lobster fishing regulations associated with the fishery management plan. The data collected from the affidavit will help CDFW estimate the number of traps lost during a season as well as inform gear recovery programs and studies aimed at minimizing the impacts of fishing gear interactions in the marine environment.

Upon the conclusion of the 2017-2018 commercial lobster season, CDFW saw an affidavit submittal rate of about 90 percent. The estimated average trap loss per active permit holder was approximately 12 percent of the maximum allowed number of traps (300 traps per lobster operator permit). An updated estimate of trap loss based on the reported number of deployed traps will be provided once commercial lobster fishing logbook data become available.

Due to human health concerns caused by high levels of domoic acid in lobster, waters around Anacapa Island, Ventura County and the east end of Santa Cruz Island, Santa Barbara County were closed to the commercial take of spiny lobster on October 16, 2018, as recommended by state health agencies. Staff coordinated with the California Department of Public Health and the Office of Environmental Health Hazard Assessment to inform the public and commercial fishery participants of the area closures via press releases and updates on the CDFW website. The commercial spiny

lobster fishery closure was lifted on November 16, 2018.

For more information about California spiny lobster, visit the Marine Region website at wildlife.ca.gov/Conservation/Marine/Invertebrates/Lobster. The Spiny Lobster Fishery Management Plan and the first harvest control rule report can be found at wildlife.ca.gov/Conservation/Marine/Lobster-FMP.

CDFW divers practice rescue techniques CDFW photo by D. Osorio

Diving Safety Program

The Diving Safety Program maintained an enviable safety record in 2018 while supporting an unprecedented level of collaborative dive activity. CDFW divers completed 2,100 dives (amounting to 48½ days under water) while conducting research and monitoring for fisheries and conservation work, and enforcement and light maintenance tasks. In addition to re-qualifying 70 active divers, six new candidates were qualified as CDFW Scientific Divers at the 100-hour training course in the spring.

CDFW's underwater efforts were achieved with the assistance of divers from 18 scientific diving organizations (universities, agencies, and others) that provided 92 visiting divers to work on collaborative projects.

The acquisition of two new breathing air compressor systems funded through the California Ocean Protection Council was a significant infrastructure improvement that will support ongoing fishery management and MPA monitoring efforts throughout California.

For more information about the Diving Safety Program, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/Diving-Safety.

CDFW divers completed 2,100 dives, equal to 48½ days under water.

Dungeness crab in recreational crab trap photo by K. Joe

Dungeness Crab

The 2017-2018 commercial Dungeness crab season opened on schedule in the central management area, but the northern management area opening was delayed due to poor meat recovery results. Although the northern area opened on January 15, 2018, the fleet voluntarily remained tied to the docks until early February given concerns of persistent low crab meat recovery in Northern California. Statewide commercial landings for the season totaled 20.2 million pounds, 75 percent of which was landed in the northern ports. Low meat recovery-associated delays in the northern management area have historically correlated with high crab yields for the region.

In June, CDFW was notified of the allocation of $25.6 million in federal disaster relief for the 2015-2016 Dungeness and rock crab fishery disasters. CDFW staff held two informational webinars to discuss and receive feedback from the public on disbursement options. A spending plan was developed that allocated the majority of disaster funds to direct payments to industry ($22.8 million) to build resiliency within the fisheries. The remaining amount will be used for mitigation ($2.6 million) to help plan and prepare for future domoic acid events. The disaster funding is expected to be received in early 2019.

For the first time, a contract to facilitate the Dungeness Crab Task Force was managed by staff using funds from the Dungeness crab trap limit account. The contract allowed for continued administration of the task force, participation in a task force meeting, and a tour of Northern California ports in October. During the port tour, staff were able to meet with the Dungeness crab fleet to discuss recent changes to the fishery with the passage of the Dungeness crab urgency bill (SB1310) and the fisheries omnibus bill (SB1309). Based on feedback received during the port

tour, staff prepared several "frequently asked questions" documents that include the information on disaster relief, vessel length restrictions, and changes to fair start rules due to domoic acid-related season delays.

New legislation (SB 1309) authorized CDFW to implement a program for the retrieval of lost or abandoned commercial Dungeness crab trap gear left in the water once the fishing season has ended. Staff worked with individuals participating in a pilot retrieval program, the Dungeness Crab Task Force, and the Dungeness Crab Fishing Gear Working Group to develop the regulations governing this program, which will be available for public comment in early 2019.

The start of the 2018-2019 Dungeness crab season was subject to closures and delays due to both domoic acid and poor results from meat recovery testing. Domoic acid was responsible for a recreational fishery closure in northern Humboldt and Del Norte counties and a commercial fishery delay from Bodega Head to the Sonoma-Mendocino county line from November 15 until December 8. The CDFW Director announced several meat recovery delays for the northern management area with a final date set for January 15, 2019, the latest the area can be delayed due to poor meat recovery test results. At the time of this report, it is unclear when the two remaining areas in Northern California, which continue to test high for domoic acid, will open to fishing.

For more information about Dungeness crab, visit the CDFW website at wildlife.ca.gov/Crabs.

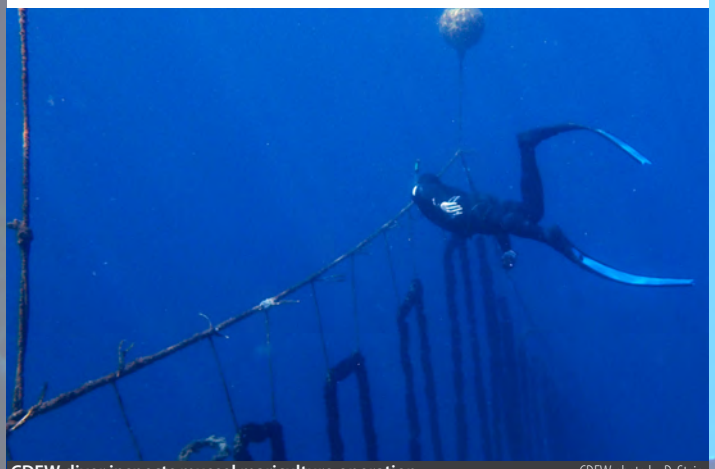
Bull kelp CDFW photo by R. Flores-Miller

Kelp and Other Marine Algae Management

Staff continued work on the commercial kelp and other marine algae rulemaking, including identifying areas for potential changes, presenting updates to the California Fish and Game Commission's Marine Resources Committee, and meeting with the InterTribal Sinkyone Wilderness Council to discuss input and concerns.

Staff provided review and feedback on various permits and projects involving kelp and marine algae, including Letters of Authorization, Wild Broodstock Collection Permits, Scientific Collecting Permits, and commercial kelp harvest plans and kelp bed lease renewal applications. Staff also participated in several working groups and broader collaborative efforts focusing on kelp during 2018. For example, the Greater Farallones National Marine Sanctuary and CDFW Kelp Recovery Working Group developed recommendations that were approved by the Sanctuary Advisory Council in November. Staff also participated in a Monterey Bay National Marine Sanctuary Advisory Council panel discussion on purple sea urchins and kelp restoration activities, and collaborated with The Nature Conservancy on advancing kelp conservation and science in California.

For more information about kelp and other marine algae, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/Kelp.



CDFW diver inspects mussel mariculture operation CDFW photo by D. Stein

Marine Aquaculture

Staff processed, reviewed, and approved 59 Live Importation Permits, 60 Aquaculture Registrations and nine Restricted Species Permits. Staff also prepared four Budget Change Proposals, three Private Stocking Permits, and four Letters of Authorization.

In collaboration with the State Shellfish Pathologist, State Aquaculture Coordinator, and Director's Aquaculture Disease Committee, staff worked to develop a management response to a newly discovered micro-variant of the oyster herpes virus in San Diego Bay.

Staff completed a survey and summary analysis of 110 acres of aquaculture gear on the 12 state-administered waterbottom leases in Tomales Bay. The results of this study informed the financial surety requirements for

those leases and were distributed to the California Coastal Commission and NOAA Fisheries. Staff worked with the California Coastal Commission to address issues related to gear and infrastructure on a subset of the Tomales Bay leases.

Staff assisted Humboldt Bay shellfish growers maintain compliance with permitting requirements regarding the avoidance of disturbing spawning Pacific Herring.

Staff updated the state waterbottom lease spatial dataset (available on CDFW's MarineBIOS spatial data viewer at wildlife.ca.gov/Conservation/Marine/GIS/MarineBIOS).

Staff performed spatial analysis to determine interactions between lease infrastructure and eelgrass habitat in Tomales Bay, and worked with the Environmental Review Project to provide comments on a State Water Board 401 Certification for Tomales Bay Oyster Company.

Staff coordinated with the State Aquaculture Coordinator and California Fish and Game Commission staff on several administrative and oversight activities related to the state's shellfish aquaculture leases, including: 1) discussion of shellfish aquaculture best management practices and regulations; 2) evaluation of shellfish aquaculture methods through reconciliation of regulatory language; 3) renewal of Santa Barbara Mariculture's state water-bottom lease; and 4) receipt and consideration of Santa Barbara Sea Ranch's new lease application off the coast of Santa Barbara.

For more information about marine aquaculture, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/ABMP/Aquaculture and wildlife.ca.gov/Aquaculture.

White Seabass release in Dana Point Harbor CDFW photo by K. Johnson

Ocean Resources Enhancement and Hatchery Program (OREHP)

CDFW, in collaboration with California Sea Grant, released the OREHP Evaluation Report. The report was the result of an extensive multi-year evaluation by an independent Scientific Advisory Committee and included a suite of recommendations for better meeting the OREHP's objectives and goals. To help inform CDFW and the Ocean Resources Enhancement Advisory Panel in their discussions of the evaluation, CDFW partnered with California Sea Grant to gather public opinion on the social values and potential direction of the OREHP from public stakeholder groups in Southern California.

CDFW and California Sea Grant facilitated three town hall meetings to provide an opportunity for stakeholders to comment on the evaluation report's results and recommendations, as well as the future direction of the OREHP. CDFW also accepted written comments from those who were unable to attend the town hall meetings. Preferences for the future of the OREHP varied among stakeholder groups. Most participants expressed interest in continuing the OREHP in some form, whether with White Seabass or another species, particularly California Halibut. Discontinuation of the OREHP was also mentioned by some, with a preference for using collected funds for other efforts that may benefit fisheries and ocean health rather than hatchery operations. CDFW and the OREHP will use the results of the evaluation along with public input to guide the OREHP's next steps and to decide on the future direction of the program.

For more information about the OREHP, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/ABMP/OREHP.

Offloading Pacific Hagfish from a commercial vessel CDFW photo by T. Tanaka

Pacific Hagfish

In 2018, program staff sampled Pacific Hagfish (hagfish) fishery from Port San Luis, Morro Bay, Moss Landing, and Eureka. Since 2007, despite market demand fluctuations, commercial landings for hagfish have remained relatively stable and have ranged from one to two million pounds annually. Market orders from

Korean importers improved over last year, with hagfish dealers taking all the fish provided by fishermen. However, with the increased demand, ex-vessel price did not increase. While California-caught hagfish are normally exported live to Korea, exporters are experimenting with packaging frozen hagfish. Effort and demand are driven by external market conditions such as the South Korean economy and the fishing activities of Oregon and Washington. Local factors such as bait supply and fuel costs also influence fishing effort.

For more information on Pacific Hagfish, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/NCCFRMP/Hagfish-Studies.

Pacific Herring research on foggy San Francisco Bay CDFW photo

Pacific Herring

Fishery management plan (FMP) development continued for California's Pacific Herring (herring) fishery in 2018. Through the year, staff worked closely with the FMP Project Management Team on drafting and editing the FMP. Staff also coordinated with California Ocean Science Trust for an external, independent peer review of the scientific and technical merits of the proposed management strategy, including the harvest control rule framework and essential fishery information. Progress continued on developing ecosystem indicators that will be used to inform the harvest control rule for inclusion in the final FMP, which will likely be presented to the California Fish and Game Commission in 2019.

Staff completed their annual population estimates for herring in San Francisco Bay. Sampling efforts included trawl and egg deposition surveys, as well as coordination with the San Francisco Bay Herring Research Association to continue collaborative research. The 2017-2018 herring season in San Francisco Bay ended with a below average spawning biomass estimate of 15,300 tons. The historical average is 48,500 tons (1979-present), and this was the fourth consecutive year of below average herring returns. There were 14 spawn events through the season starting in mid-December 2017 and ending in mid-March 2018. The largest spawn event occurred along the San Francisco waterfront in January, which involved an estimated 5,783 tons of herring. Staff also monitored the herring spawning population in Humboldt Bay and Crescent City Harbor, documenting and mapping five and two spawn events, respectively.

The total fishery quota for San Francisco Bay was set at 834 short tons for the 2017-2018 season. Nine commercial fishing vessels participated and landed 611 short tons of herring in San Francisco Bay. The herring fisheries in the northern management areas, Tomales Bay, Humboldt Bay and Crescent City Harbor, remained inactive with quotas set at 350, 60, and 30 short tons, respectively.

For more information about Pacific Herring, visit the CDFW website at wildlife.ca.gov/Fishing/Commercial/Herring and the CDFW Pacific Herring Management News blogsite at cdfwherring.wordpress.com.

Razor Clams CDFW photo

Razor Clams

2018 marked a second year that the recreational razor clam fishery was closed in both Humboldt and Del Norte counties due to high levels of domoic acid. In Humboldt County, staff collected clams on nine different days between January and November while volunteers in Del Norte County conducted six clam collections between January and August. At least one clam from all sampled areas consistently tested at or above the alert level for domoic acid at 20 parts per million. All 11 razor clams sampled in mid-November were found to exceed the action level and ranged in concentration from 130 to 300 parts per million. For

more information about clams, visit the Marine Region website at wildlife.ca.gov/Conservation/Marine/Invertebrates/Bivalves. For more information about finfish and shellfish health advisories, visit the Marine Region website at wildlife.ca.gov/fishing/ocean/health-advisories.

R/V *Mystinus* CDFW photo by D. Osorio

Research Vessel Operations

The number of vessels in the Marine Region's research fleet remained unchanged at 15 in 2018, but fleet capabilities were greatly improved. Last year's initiative to enhance capacity culminated in the delivery of one repowered vessel and two new replacement vessels to the fleet. The upgrades and acquisitions were made with support from the California Ocean Protection Council. The new workboats are efficient, reliable, and will make significant contributions to research and monitoring.

R/V *Irish Lord* – This 32-ft. fiberglass workboat originally built in 1987 was repowered with clean, efficient, and reliable outboard engines. The fuel tanks were replaced, and the work deck was reconfigured to improve capacity and workflow. The R/V *Irish Lord*'s home port is Ventura.

R/V *Megathura* – The 21-ft. fiberglass workboat was constructed by Parker Marine in 2018. This day-boat can support four divers and conduct trap surveys and light oceanographic work. Since delivery in June, it has supported dive surveys to monitor warty sea cucumber abundance around the northern Channel Islands. The R/V *Megathura*'s home port is San Diego.

R/V *Mystinus* – The 29-ft. R/V *Mystinus,* constructed in 2018 by Don Radon Boat Building in Goleta, was purchased with funding from the California Ocean Protection Council in May 2018. Designed as a short-range dive platform with a capacity of six divers, it can also support hook-and-line and trap surveys, light oceanographic work, and remote sensing. The R/V *Mystinus* deployed for 20 field days and more than 200 dives during its inaugural first season from July through October.

R/V *Garibaldi* – The 45-ft. flagship of the Marine Region, based in San Pedro, assisted in a variety of CDFW research studies as well as collaborative studies from San Diego to Point Conception, including the Channel Islands. The vessel was at sea for 118 days on 33 cruises, traveled 3,748 nautical miles, and used 5,539 gallons of fuel. The R/V *Garibaldi* was out of service for four weeks during the year to reinstall an A-frame, trawling winch, and to replace the auto pilot. During this time, other additions and modifications were made to enable the vessel to trawl.

State record Calico Surfperch CDFW file photo

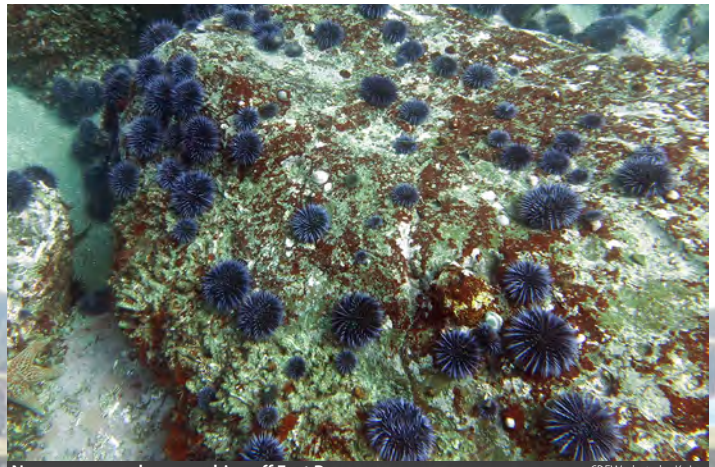
Saltwater Angling and Diving Records

Five new saltwater angling and diving records were accepted in 2018 (previous records in parenthesis):

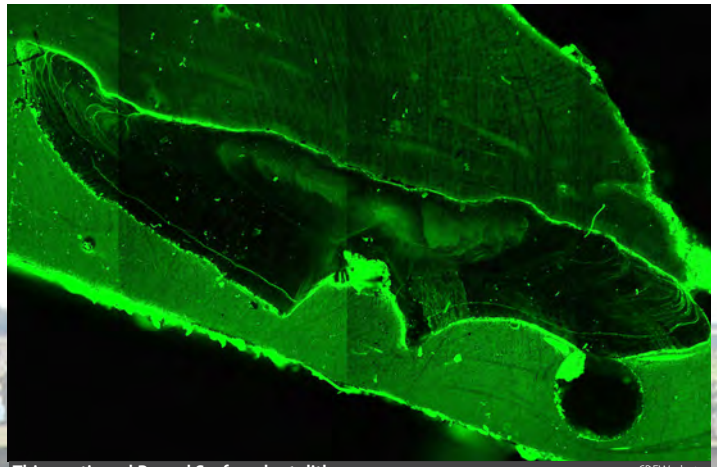
Calico Surfperch angling record: 1 lb. 15 oz. (1 lb. 14 oz.)
Grass Rockfish diving record: 6 lb. 7 oz. (6 lb. 3 oz.)
Vermilion Rockfish diving record: 10 lb. 10 oz. (10 lb. 6 oz.)
Canary Rockfish diving record: 3 lb. 4 oz. (this is a new species for the diving record category)
Dolphinfish (dorado, or mahi mahi) diving record: 28 lb. 0 oz. (24 lb. 4 oz.)

For more information about record saltwater fish and invertebrates, visit the CDFW website at wildlife.ca.gov/Fishing/Ocean/Records.

Marine Region research vessel capabilities were greatly improved in 2018.



Numerous purple sea urchins off Fort Bragg CDFW photo by K. Joe



Thin-sectioned Barred Surfperch otolith CDFW photo

Sea Urchin

In recent years, purple sea urchins have become so numerous throughout Mendocino and Sonoma counties that food resources for abalone have become greatly reduced, causing starvation conditions for abalone. With increased public interest in reducing purple sea urchin numbers, CDFW staff recommended, and the California Fish and Game Commission adopted, an increase in the recreational daily bag limit from 35 urchins (the general invertebrate bag limit) to 20 gallons for Mendocino and Sonoma counties. This higher bag limit was quickly utilized at several purple sea urchin harvest events at Ocean Cove, Albion Cove and Caspar Cove, coordinated by the Watermen's Alliance and sampled by CDFW. Data from these efforts supported a request by stakeholders that the California Fish and Game Commission increase the bag limit for purple urchins from 20 gallons to 40 gallons in 2019.

Staff have also been key in the formation of the Kelp Ecosystem and Landscape Partnership for Research and Resiliency program (or *KELPRR*) which has drawn more than a dozen partners from agencies, academia, sport diver organizations, environmental groups, and the fishing industry. The organization is addressing the problems caused by the recent explosion in purple sea urchin numbers and how to restore Northern California kelp forests. KELPRR partners are developing ecosystem monitoring programs, educational materials, and options for use of harvested urchin materials. For more information about sea urchin, visit the Marine Region website at wildlife.ca.gov/Conservation/Marine/Invertebrates/Sea-Urchin.

Public interest spurred efforts to reduce purple sea urchin numbers in 2018.

Surfperch and Other Surf Fishes

Staff continued to monitor surfperch commercial and recreational hook-and-line fisheries in Central and Northern California. Barred Surfperch and Redtail Surfperch continued to dominate commercial landings and the recreational catch. The Morro Bay port complex is the hub of the Barred Surfperch commercial fishery while Redtail Surfperch are landed primarily in Eureka. Preliminary 2018 statewide Barred Surfperch and Redtail Surfperch annual commercial landings indicate catches were slightly above 10-year averages. Neutral to favorable oceanographic conditions following the 2014 to 2016 El Niño event continued in 2018.

Staff continued collecting essential fishery information using fishery-independent surveys with hook-and-line gear from San Luis Obispo County to Mendocino County, and completed progressive angler surveys to document angler effort along Monterey County sandy beaches. Since 2007 approximately 1,300 fishery-independent surveys have been completed by staff and more than 16,900 anglers have been documented during approximately 500 progressive angler surveys.

In collaboration with San Francisco State University, the lab analysis portion of an age validation study was completed for Barred Surfperch treated with oxytetracycline, an otolith marker. A fluorescence laser microscope was used to observe and photograph the otoliths after they were thin-sectioned and mounted on slides. The photos are being examined and measured digitally using Fiji ImageJ software to validate the whole-otolith ageing method.

Staff began developing a management strategy evaluation for Redtail Surfperch in conjunction with the Data Limited Methods Toolkit project. Staff built an operating model for both the recreational and commercial beach fisheries for this species and began evaluating the effects of applying a wide range of management

scenarios to this virtual fishery into the future.

Staff continued to analyze data from the surf fish beach seine study. Preliminary results showed no strong relationships between most environmental factors including temperature, tide height, and tidal flux (incoming vs. outgoing) and fish abundance for each of the project species (Barred Surfperch, Walleye Surfperch, California Corbina, Spotfin Croaker, Yellowfin Croaker).

For more information about surfperch and surf fish studies, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/NCCFRMP/Surfperch-Studies and wildlife.ca.gov/Conservation/Marine/SCFRMP/SurfFish.

Preliminary commercial landing totals for Night Smelt show a 24 percent increase over 2017.

True Smelt

Preliminary commercial Night Smelt landings totaled 219,494 pounds in 2018, increasing 24 percent from 2017. Surf Smelt or "day fish" landings increased slightly from an all-time low of 688 pounds in 2017 to 1,654 pounds in 2018. Historically, both species were targeted in California from Monterey County to the Oregon border; however, the majority of the landings originate in Northern California. These fisheries, commercial and recreational, are shore-based and fishermen use A-frame dip nets for taking Night Smelt and Surf Smelt, while cast nets are also used for Surf Smelt.

For more information about true smelts, visit the CDFW website at www.wildlife.ca.gov/Conservation/Marine/NCCFRMP/True-Smelts

Catching Surf Smelt with an A-frame dip net CDFW photo by K. Lesyna

Warty sea cucumber amid feather stars CDFW/MARE photo

Warty Sea Cucumber

Staff implemented the first commercial seasonal closure to protect spawning groups of warty sea cucumber. The closure, which spans 3½ months from March 1 -June 14 was adopted by the California Fish and Game Commission in 2017 and went into effect for the 2018 season. Staff completed the fifth consecutive year of dive and laboratory research to collect essential fishery information for warty sea cucumber populations at the northern Channel Islands. Staff performed seasonal dive surveys at six different locations (inside and outside of marine protected areas) to measure seasonal changes in densities and to characterize size distributions. This is the first fishery in California where essential fishery information from within MPAs is being actively used for management. To date, more than 4,000 warty sea cucumber have been enumerated and measured, with an additional 2,201 individuals collected and dissected. Data collected by CDFW during this year's first seasonal closure suggest that spawning aggregations were largely protected by the closure period. A collaborative investigation using a remotely operated vehicle was also performed in spring and fall of 2018 with Marine Applied Research and Exploration to examine the seasonal depth distribution of warty sea cucumber during spawning and non-spawning periods. The information collected by this remotely operated vehicle research will assist in evaluating the degree to which populations use shallow depths for reproductive purposes and the role that deeper depths may play in providing refuge to warty sea cucumber, which are primarily targeted by divers. In addition, this information will assist in assessing the effectiveness of current CDFW surveys in monitoring populations of warty sea cucumber. For more information about the collaborative warty sea cucumber remotely operated vehicle density study, read the MPA Management Project newsletter.

White Seabass school near Anacapa Island CDFW/MARE photo

White Seabass

Staff continued to collect samples for a study updating the age at maturity for White Seabass. Collaborating with sport fishermen, staff collected an additional 11 samples and 42 individual fish. Collecting fish within the size range needed has been very challenging, but staff anticipate a stronger sampling season in 2019 with the help of additional staff members targeting fishing trips in the Santa Barbara area.

Staff collected and analyzed commercial and recreational data as part of the annual review of the White Seabass Fishery Management Plan for the 2017-2018 season. Staff evaluated the numbers and sizes of White Seabass landed, information on forage fish availability, and socioeconomic data to determine if points of concern had been met. None of the five main points of concern were met for the season and no further action was needed.

For more information about White Seabass, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/NCCFRMP/White-Seabass and wildlife.ca.gov/Conservation/Marine/SCFRMP/White-Seabass.

State/Federal Marine Programs

These programs are responsible for fisheries jointly managed by state and federal entities.

Bin of rockfish offloaded from a commercial vessel CDFW photo by J.B. Batten

Groundfish

Management and Research – California's sport and commercial groundfish fisheries (which include more than 90 species of rockfish, roundfish, ratfish, skates and sharks) remained within prescribed annual catch limits and accountability measures in 2018 due to active monitoring and management by state and partner agencies and stakeholders.

The regulatory activities for the 2019-2020 groundfish fisheries were finalized in 2018. These resulted in several increased opportunities for California's sport and commercial fisheries, due in part to nearly all overfished stocks being declared rebuilt, and more optimistic stock assessments for Yelloweye Rockfish and Cowcod — two overfished species that continue to limit access to healthy stocks. For Yelloweye Rockfish, less restrictive annual catch limits were implemented for 2019 due to a more positive stock status outlook in the most recent assessment, and the continuing need for stability in groundfish fishing opportunities for California's coastal fishing communities. For Cowcod, due to the stock being projected to be rebuilt by 2019, staff was able to document that there would be low risk to the stock if the annual catch target and allowable fishing depths were increased.

However, not all the new stock assessment information was optimistic, as the Lingcod stock assessment off California was found to be in the precautionary zone. Consequently, recreational anglers in much of California will face a reduced bag limit from two fish to one fish in 2019, while commercial fishermen will experience a reduction in their vessel-based trip limits. Staff answered questions and responded to numerous comments about the new science and management actions during the 2018 state and federal regulatory processes which implement these reductions, and conducted a number of outreach efforts.

Staff also completed a California Fish and Game Commission regulation change package that will apply the new federal recreational groundfish fishing regulations for 2019 and 2020 in state waters.

In collaboration with federal agency partners and nongovernmental organizations, staff participated in developing recommendations for essential fish habitat for groundfish, and adjustments to the trawl rockfish conservation areas, which are depth-based closures to protect overfished species. The goals were to minimize adverse effects on sensitive habitat that can occur when fishing with trawl gear, to allow increased access to productive fishing grounds, and to increase resource-use efficiency.

Staff provided analyses to inform two Endangered Species Act biological opinions related to take of listed salmon in the Pacific Coast groundfish fishery and the Pacific Halibut fishery. Staff also developed management measures to implement the federal Incidental Take Statements for California fisheries. Staff also participated in reviews of Eulachon and seabirds, other Endangered Species Act-listed species that are taken in the groundfish fishery.

Staff reviewed, supported, and recommended terms and conditions for several new federal Experimental Fishery Permits that will commence in 2019. One will authorize new commercial midwater trawl fishery activities off California, while others have the goal of developing a midwater hook-and-line commercial fishery targeting underutilized midwater rockfish species.

Staff completed a regulation change package for state logbook requirements that the California Fish and Game Commission adopted on December 12, 2018. Starting April 1, 2019, commercial fishermen participating in the federally-managed groundish trawl fishery will no longer be required to fill out state logbooks.

Staff continue to lead efforts to evaluate visual survey data collected from nearshore waters during remotely operated vehicle studies. Developing a fishery-independent method for determining groundfish abundance in nearshore waters has the potential to

enhance future stock assessments.

Education and Outreach – Staff participated in the biennial Western Groundfish Conference held in February in Santa Cruz by contributing to the planning committee and presenting information about barotrauma in rockfish and the benefits of using various types of descending devices in the recreational groundfish fishery.

With help from CDFW's California Recreational Fisheries Survey project, staff completed 23 outreach assignments during season-opening weekends in the Northern, Mendocino, San Francisco and Central recreational groundfish management areas. Staff provided anglers with more than 400 packets containing the 2018 recreational groundfish regulations, species identification flyers, and information on the CalTIP program. Staff also distributed more than 160 descending devices.

Staff prepared a number of groundfish-related press releases and blog posts in 2018 and maintained and updated several CDFW web pages and our recreational groundfish phone hotline throughout the year.

Visit the CDFW website at wildlife.ca.gov/conservation/marine/groundfish for more information about groundfish.

Offloading commercially-caught Pacific Halibut CDFW photo by J.B. Batten

Pacific Halibut

CDFW continues to actively manage the recreational Pacific Halibut fishery in California waters. Based on projected early attainment of the 2018 California quota, an in-season fishery closure was implemented on September 21, 2018, following discussions with the International Pacific Halibut Commission, Pacific Fishery Management Council and National Marine Fisheries Service. Final 2018 recreational catch estimates totaled 31,156 net pounds – or 101 percent of the quota. The average net weight per kept fish in 2018 was approximately 24 pounds, the highest in the last ten years.

In 2018, four commercial vessels participated across three of the opening days in the directed fishery; the preliminary landings were 2,457 net pounds. The landings were made into the port of Eureka and sale of the fish produced an estimated $17,800 in ex-vessel revenue for Northern California coastal communities. CDFW staff were present at the offloads to conduct biological sampling in coordination with the International Pacific Halibut Commission's commercial fishery sampling program. Visit the CDFW website at wildlife.ca.gov/Conservation/Marine/Pacific-Halibut for more information about Pacific Halibut.

Collecting data on commercially-caught tuna CDFW photo by M. Horeczko

Pelagic Fisheries and Ecosystems

Highly Migratory Species – Involvement in the Pacific Fishery Management Council (Council) process required substantial contributions this year from Marine Region Highly Migratory Species (HMS) Management Project staff representing CDFW in high-priority issues on the HMS Management Team. Team members participated in numerous meetings and contributed reports to support decisions regarding deep set buoy gear, a new commercial gear type to sustainably target swordfish off the West Coast, and adoption of a new methodology for determining bycatch performance metrics in the large-mesh drift gillnet fishery. Staff also contributed to the dynamic management needs for international stocks important to commercial and recreational fisheries such as Pacific Bluefin Tuna and North Pacific Albacore Tuna.

HMS Project staff completed another year of in-season catch monitoring for Pacific Bluefin Tuna and other tunas and expanded commercial dockside Pacific Bluefin Tuna sampling to include smaller volume landings in the hook-and-line and gillnet fisheries. Hundreds of Pacific Bluefin Tuna genetic samples were collected, contributing to a Pacific-wide population study.

Staff continued to improve HMS data quality, revising and enhancing automated error checking through the Commercial Landings Data Improvement Process database management system. The HMS team also coordinated with CDFW's Law Enforcement Division to improve data tools that review permitting and license compliance, and participated in a multi-agency collaborative team to improve and coordinate federal and state HMS data quality, product development and standardization for the Eastern and Tropical Pacific.

Federal Ecosystem Planning – The Marine Region supported the Council's Ecosystem Work Group, participating in climate change scenario planning for the West Coast and initiating a five-year review of the Pacific Coast Fishery Ecosystem Plan for the U.S. portion of the California Current Large Marine Ecosystem. The review consists of revising and updating the goals and objectives of the Council's Fishery Ecosystem Plan to be more specific and measurable, as well as developing an outline of revisions to the plan that reflect updated science and the results of Fishery Ecosystem Plan initiatives.

Coastal Pelagic Species – The Coastal Pelagic Species (CPS) Management Project continued to engage in federal fishery management as members of the Council's CPS Management Team. The team held meetings throughout the year and prepared various reports. Importantly, this work supported the CPS Fishery Management Plan amendment processes for the live bait fishery, setting harvest specifications for Pacific Sardine, evaluating Northern Anchovy management status, and approving exempted fishing permits to provide CPS stock assessment information.

CDFW was a partner in the California Pelagic Species Aerial Survey, which started in 2012 as a collaborative effort with the California Wetfish Producers Association. In addition to regular surveys, staff participated in the California Wetfish Producers Association summer nearshore collaborative survey with NOAA Fisheries, conducting sampling aboard purse seine vessels.

Staff continued dockside commercial CPS fisheries sampling, collecting 97 samples and ageing 575 otoliths for use in stock assessments.

The CPS Management Project participated in various outreach activities, including meetings with the commercial live bait industry and attending the annual California Wetfish Producers Association meeting.

Visit the CDFW website at wildlife.ca.gov/Conservation/Marine/Pelagic for more information about the pelagic fisheries and ecosystem management.

Sport-caught Chinook Salmon at Noyo Harbor, Fort Bragg CDFW photo

Salmon

At the beginning of the 2018 ocean salmon management cycle, project staff conducted the annual California Ocean Salmon Information Meeting, which attracted about 120 interested stakeholders. Staff provided information on 2017 ocean salmon fisheries, spawning escapement, stock-specific abundance forecasts, and the outlook for 2018 sport and commercial ocean salmon fisheries. Members of the public provided input to a panel of California salmon scientists, managers, and representatives for consideration in the development of 2018 ocean salmon regulations.

Project staff involved on the Klamath River Technical Team coordinated with federal, tribal, and other state agencies to consolidate and summarize catch and other survey information on Klamath River fall Chinook for use in the 2018 management cycle.

Staff participated in the process of drafting 2018 ocean salmon seasons with the Pacific Fishery Management Council and worked together with the

Genetic samples were collected from hundreds of Pacific Bluefin Tuna as part of a Pacific-wide population study.

California Fish and Game Commission and CDFW staff to implement a process to automatically conform sport ocean salmon regulations to federal regulations. Staff produced the *Review of 2017 Ocean Salmon Fisheries* report and several other pre-season reports in collaboration with federal, tribal, and other state agencies. These documents included information on ocean harvest, inland escapement, abundance forecasts, regulatory season alternatives, and final ocean salmon fisheries regulations.

In 2018, a new harvest control rule was implemented to regulate the impact of fisheries on endangered Sacramento River winter Chinook. Project staff participated on an ad-hoc winter run work group in a two-year effort to update the harvest control rule. The updated harvest control rule is expected to be more responsive to changes in abundance because it uses forecast escapement rather than past year averages.

Also new in 2018, after three years of poor spawner returns, both Sacramento and Klamath River fall Chinook met overfished criteria, as established in the Pacific Coast Salmon Fishery Management Plan. Project staff, in collaboration with other agencies, began drafting rebuilding plans for these two stocks. The plans review potential causal factors leading to the overfished status, and specifically assess the roles that freshwater conditions, marine conditions, harvest, and fishery management may have played. Findings from these plans will be used to identify habitat issues hindering salmon survival, and may also be used to guide fishery management until rebuilt status is achieved. The public will have an opportunity to review these rebuilding plans in early 2019.

Due to the overfished status of Sacramento River fall Chinook and uncertainty around its abundance, the Pacific Fishery Management Council took extra precautions to minimize impacts to this essential stock during the 2018 season. As a result of cooperation between industry representatives and regulatory bodies, fishing seasons were curtailed in many months and in most areas, to reduce fishery impact rates on this depressed stock and ensure higher future escapement levels.

During the ocean salmon fishing season, recreational and commercial fisheries were monitored at approximately 20 ports along the California coast. In the commercial fishery, staff sampled approximately 25,800 salmon and collected snouts from more than 7,000 adipose fin-clipped salmon for subsequent coded-wire tag processing. In the recreational fishery, field staff coordinated with CRFS staff in contacting nearly 24,700 anglers to sample more than 24,200 Chinook Salmon and collect approximately 5,600 heads from adipose fin-clipped salmon. Staff utilized these sample data to produce annual ocean catch and effort estimates by fishery, management area, and half-month period. In conjunction with normal dockside sampling, nearly 3,500 tissue samples were collected in 2018 for a pilot project aimed at investigating the feasibility and utility of conducting genetic analyses to supplement stock composition data from coded-wire tags.

Staff processed approximately 13,100 coded-wire tags from fish caught in the ocean salmon fisheries and uploaded these data, along with their respective catch-sample data, to a publicly accessible data warehouse called the Regional Mark Processing Center. These data are used to determine stock contributions and fishery impacts— information needed to sustainably manage West Coast fisheries and protect California salmon stocks.

Project staff continued work on Constant Fractional Marking analyses, and the results have been published to the Ocean Salmon Project website. Staff completed the 2013 Constant Fractional Marking report this year, and the 2014 report will be available shortly. These reports detail hatchery contributions to inland harvest, escapement, and ocean fisheries, and describe the effects of various hatchery release types, most notably recovery and stray rates. Constant Fractional Marking results will be used widely to evaluate and modify hatchery programs, bay and coastal net pen programs, barge studies, restoration activities, recovery goals, and salmon life cycle model calibrations.

Staff responded to 127 public inquiries received through the Ocean Salmon Courtesy Request Program. Recreational anglers and commercial trollers may request information about their adipose fin-clipped salmon that are sampled by project staff in the field.

Visit the CDFW website at wildlife.ca.gov/OceanSalmon for more information about ocean salmon management and seasons.

Resource Assessment Programs

These programs are responsible for collecting and disseminating recreational and commercial fishery-dependent data.

Scientific aid collects information from a recreational fisherman CDFW photo

CRFS data and estimates are essential for managing California's diverse marine fisheries.

California Recreational Fisheries Survey (CRFS)
CRFS field operations are supported by 15 permanent staff and, on average, 65 temporary Fish and Wildlife scientific aids. Annually, CRFS collects data on the catch of more than 100,000 anglers and examines more than 190,000 of the retained fish and invertebrates. In 2018, CRFS conducted several thousand private and rental boat surveys at launch ramps, piers, jetties and breakwaters, and party/charter boat dockside surveys. During these assignments, CRFS samplers collected data on angler effort, demographics, and catch, and collected biological measurements on recreationally caught finfish. CRFS also conducted party and charter boat onboard assignments to collect additional data on fishing location and discarded finfish.

In 2018 CRFS, in collaboration with the Recreational Fisheries Data Project, designed and implemented two beach and bank pilot studies to estimate effort and catch. The new catch rate survey was designed based on recommendations from a national review of CRFS methods in 2011. The survey implemented weighted probability sampling to increase the precision of the estimates and to lower survey costs. Preliminary results show a 20 percent increase in the number of angler interviews with anglers who had completed a fishing trip, using the same level of staffing as the legacy survey. CRFS conducted hundreds of beach and bank catch rate surveys along California's 1,100 miles of coastline. CRFS staff entered the data collected during the field surveys and the pilot studies into the CRFS data system (*see* Recreational Fisheries Data Project, *pg. 21*).

California Recreational Fisheries Survey Outreach – CRFS field staff provide outreach to the recreational fishing community by sharing informational materials on sportfishing regulations, species identification, marine protected areas, barotrauma and the use of descending devices, whale entanglement, and domoic acid.

For more information about the California Recreational Fisheries Survey, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/CRFS.

Commercial fishing vessel at sea CDFW photo

Marine Fisheries Statistical Unit
Staff collects, processes, and audits commercial fishery landings data, including landing receipts, commercial passenger fishing vessel logbooks, spiny lobster logbooks, and transportation receipts. Staff design, order, and distribute all paper landing receipts and commercial passenger fishing vessel logs for constituents. Marine Fisheries Statistical Unit staff also process all commercial fishery data requests received from commercial fishing license holders and other authorized requestors.

Recreational saltwater fisherman CDFW photo by E.W. Roberts III

Pacific Recreational Fisheries Information Network (RecFIN)

Marine Region submits California Recreational Fishery Survey (CRFS) estimates to RecFIN on a monthly basis. RecFIN provides a centralized data system to house recreational fisheries information from California, Oregon, and Washington. CRFS and the Recreational Fisheries Data Project staff represent California on the RecFIN Technical Committee, Data and Technology Subcommittee and the Statistical Subcommittee. Through these committees, staff support RecFIN efforts to coordinate the coastwide collection of marine recreational finfish data and procedures for estimating catch, effort and participation. CRFS and the Recreational Fisheries Data Project also collaborated with RecFIN programmers on validating estimates and routines in the new RecFIN database, which was launched in spring 2017. RecFIN enhancements for CRFS data and estimates continued through 2018 and are expected to continue into 2019. For more information about RecFIN, visit the website at www.recfin.org.

CRFS data is used to monitor Yelloweye Rockfish catches CDFW/MARE photo

Recreational Fisheries Data Project

The Recreational Fisheries Data Project and CDFW's Data and Technology Division staff continued to develop and maintain a data system for CRFS catch, effort, biological, and spatial data and estimates.

The system includes a centralized relational database to store information, a data entry system with built-in error checks, validation routines to improve data accuracy, and automated reports. The data system increases CDFW efficiency, improves data accuracy and provides the flexibility to align data capture with changing management needs.

CRFS data and estimates are essential for managing California's diverse marine fisheries. CDFW, the California Fish and Game Commission, the Pacific Fishery Management Council, the International Pacific Halibut Commission and the National Marine Fisheries Service used CRFS data and estimates for fishery management in 2018. These uses included: in-season monitoring for species of concern such as Cowcod, Yelloweye Rockfish and Pacific Halibut; developing harvest guidelines; conducting regulatory analyses, and making other critical management decisions. CRFS data were also used in the Marine Protected Area Monitoring Action Plan to examine historical recreational fishing effort across the State as well as local fishing mortality.

Statistical and Technical Support – Recreational Fisheries Data Project staff provided statistical and technical assistance to various projects in support of the management and restoration of fish stocks. These included:

- Providing CRFS data, estimates, and data summaries to various CDFW projects, stock assessors, university researchers, graduate students, the Pacific Recreational Fisheries Information Network (RecFIN), and other State and federal agencies
- Providing advice on use of CRFS data and estimates
- Providing statistical advice on survey design and developing estimation procedures for CRFS pilot studies. These studies are testing use of an online survey to collect recreational fishing effort data, and use of field surveys for collecting recreational catch rate and effort data on beaches and banks
- Providing statistical advice on data analyses for several CDFW research projects including a comparison of the total length of California Sheephead with corresponding fillet lengths
- Reviewing publications that used CRFS data and estimates

For more information about the Recreational Fisheries Data Project, visit the CDFW website at wildlife.ca.gov/Conservation/Marine/Recreational-Fisheries-Data

Habitat Conservation Programs

Agreements for Sharing Confidential Data

Staff from CDFW's Marine Region, Office of the General Counsel, and Data and Technology Division worked together to incorporate State data security requirements into new data sharing agreements. Eight data-sharing agreements were approved to allow federal and academic fishery and socioeconomics scientists to incorporate confidential state fisheries data into their project analyses.

Intertidal monitoring site, Point Sur — CDFW photo by S. Worden

Climate Change Activities

Staff participated on the Advisory Group for the Coast and Ocean Summary Report that was published as part of California's Fourth Climate Change Assessment. Staff also provided updates to the Natural Resources Agency on CDFW's current status for actions included within the 2018 and 2014 Safeguarding California documents and the 2009 Climate Adaptation Strategy. Staff participated in several workshops that focused on climate-related topics: monitoring harmful algal blooms to inform seafood safety and fisheries management, integration of ocean acidification hotspots into management of California fisheries, and potential direct and indirect effects of climate change on fisheries and communities. Starting in August, staff also met monthly with individuals from the California Ocean Science Trust and the California Fish and Game Commission, and more recently the California Ocean Protection Council, to discuss the coordination of climate-related efforts. This group noted several federal and state efforts that focus on climate and fishing communities that would benefit from this synergism, and identified several associated objectives and tasks including a workshop to be hosted by the California Ocean Science Trust in 2019.

Staff participated on the Coastal Ocean Working Group of the State's Climate Action Team. Staff also represented West Coast fishery managers on the California Current Acidification Network steering committee.

Taking samples of mud shrimp in Humboldt Bay — CDFW photo by R. Garwood

Environmental Review and Water Quality Project

During 2018, staff in the Environmental Review and Water Quality Project continued to work on a wide variety of projects, permits, and statewide plans. Staff participated in more than 60 pre-project review meetings and reviewed over 600 environmental documents (plans, surveys, reports, permits, public notices, California Environmental Quality Act, California Endangered Species Act, etc.). The review effort included more than 120 California Environmental Quality Act documents, 90 U.S. Army Corps of Engineers Public Notices, 150 monitoring plans and reports, 40 invasive species survey reports, 85 permits from various agencies and over 50 scientific collection permits. Topics reviewed included: wave energy, desalination plant impacts, power plant impacts, dredging impacts, beach nourishment projects, contaminant site remediation, mitigation projects, California Endangered Species Act impacts, tribal concerns, State Water Resources Control Board policy review, artificial reefs, mitigation proposals, eelgrass restoration, invasive species control projects, Scientific Collecting Permits, aquaculture projects, alternative energy projects, and dock and pier construction impacts. In addition, staff participated

in the review and development of several U.S. Navy, U.S. Marine Corps and U.S. Air Force Integrated Natural Resource Management Plans.

Environmental Review and Water Quality Project Coordination and Collaboration – Staff worked closely with other agencies, applicants, and CDFW regions to coordinate environmental review activities. 2018 activities included:

- Participating on the Humboldt Bay Eelgrass Management Plan Team
- Participating on the CDFW Mitigation Banking Team
- Addressing sand mining, dredging and oyster shell harvesting impacts in San Francisco Bay as part of the San Francisco Bay Conservation and Development Commission
- Participating on the Statewide and Regional Coastal Sediment Management teams
- Participating on the Los Angeles Dredge Material Management Team
- Participating in the development of a monitoring plan to determine impacts to Longfin Smelt from hydraulic dredging operations in San Francisco Bay
- Participating as part of an internal working group to develop a mitigation plan for impacts associated with the Poseidon Desalination Facility in Carlsbad
- Completing Amendment No. 7 for Caltrans San Francisco-Oakland Bay Bridge Seismic Retrofit Project Incidental Take Permit
- Representing CDFW on the newly formed California Ocean Renewable Energy Taskforce
- Participating in several Department of Defense Integrated Natural Resource Management Plan reviews and meetings
- Participating at Beach Ecology Coalition meetings
- Helping to develop and implement structural changes to the CDFW-wide Scientific Collecting Permit program through both a rulemaking change and a new online application and reporting system.
- Developing an online survey for anglers and divers to better understand how artificial reefs are utilized by California's recreationalists.
- Coordinating eelgrass restoration and monitoring efforts with the Morro Bay National Estuary Program
- Completing the 2016-2017 Grunion Spawning Habitat Field Report
- Completing the Mission Bay Ferry Terminal and Water Taxi Project Incidental Take Permit

Marine protected area outreach CDFW photo by A. Van Diggelen

Statewide Marine Protected Area (MPA) Management Project

California is home to the largest ecologically connected network of MPAs in North America, including 124 MPAs and 14 special closures encompassing 16 percent of state waters. CDFW manages the MPA Network using a partnership-based approach through the MPA Management Program, which includes four core components: 1) outreach and education, 2) research and monitoring, 3) enforcement and compliance, and 4) policy and permitting. This approach ensures that the MPA Network is adaptively managed with active engagement across the ocean community to meet the goals of the Marine Life Protection Act.

Outreach and Education — Staff continue to focus on increasing public awareness to enhance compliance with MPA regulations. More than 14,600 guidebooks; 36,300 brochures; 7,500 posters; 1,300 logo stickers, and 400 information cards were distributed. These publications were shipped to 235 locations such as sporting goods stores, scuba and ecotourism groups, aquariums, schools, parks, campgrounds, harbors, non-profit businesses, commercial fishing enterprises, and various individuals. The guidebooks and brochures were also available online, through CDFW offices, and at special events.

To spotlight individual MPAs, staff continued writing articles for the Marine Management News blogsite series, *Exploring California's Marine Protected Areas*. Staff wrote an article that was published in the March-April issue of *Outdoor California*, *Crystal Cove: Exploring California's Undersea Wilderness off Orange County's Protected Wild Coast*, which featured a state marine conservation area. In addition, two new products were released in 2018, including an MPA educational video

Safeguarding an Underwater Wilderness and the MPA Management Project e-newsletter.

Through a cooperative partnership with the California Ocean Protection Council (OPC) and California Marine Sanctuary Foundation, interpretive and regulatory signs were developed and installed at key marinas, harbors, and other ocean access points throughout the state. To date, there are 450 signs installed statewide, with 33 "Interpretive Signs" that highlight individual MPAs, 11 "You Are Here" signs, 11 "No Fishing" signs, and four "Harbor" signs installed in 2018.

More than 15,600 students participated in the MPA Parks Online Resources for Teachers and Students program in 2018. More than 60,000 students have participated since this CDFW and California Department of Parks and Recreation partnership began in 2014. The program connects resource experts in the field with students in their classrooms, and core curriculum teaches students about the MPA Network. Modules have been created for Año Nuevo State Marine Reserve, Point Lobos State Marine Reserve, Crystal Cove State Marine Conservation Area, and Pyramid Point State Marine Conservation Area, that teach students about elephant seals, kelp forests, tide pool ecology, and the salmon lifecycle, respectively.

Research and Monitoring – The Marine Life Protection Act requires the MPA Network be monitored to evaluate progress toward meeting its goals, and that the results of monitoring inform adaptive management decisions. The vehicle for guiding research and monitoring activities across California's MPA Network is the MPA Monitoring Program. CDFW, OPC, and the California Fish and Game Commission collaboratively lead the MPA Monitoring Program, which includes two phases: 1) regional baseline monitoring and 2) statewide long-term monitoring.

Phase 1 concluded in February 2018, with data and results for the North Coast MPAs described in technical reports for eleven funded research projects and summarized in a "State of the Region" report. This information was used to develop an initial 5-year management review regarding regional MPA implementation. Phase 1 was completed in the Central Coast in 2013, the North Central Coast in 2016, and the South Coast in early 2017; all Phase 1 products are available on the CDFW website.

With the completion of Phase 1 for all four coastal planning regions, CDFW, OPC, and the California Fish and Game Commission began to develop Phase 2: long-term, statewide monitoring. To guide long-term monitoring, CDFW and OPC developed a MPA Monitoring Action Plan which was adopted by the California Fish and Game Commission and OPC in October 2018. Staff worked with partners to develop quantitative and expert approaches to inform the Action Plan, including co-mentoring three post-doctoral researchers from UC Davis. OPC approved $9.5 million for long-term monitoring projects, and released a solicitation for proposals and statement of qualifications on November 1, 2018. Projects will be selected based on their alignment with the Action Plan and will begin data collection in 2019 upon OPC's approval at their May 2019 meeting.

Staff continue to build cooperative working relationships with many of our partners by participating in more than 40 days in the field on research projects in 2018. Collaborators included The Partnership for Interdisciplanary Studies of Coastal Oceans, Reef Check California, the Multi-Agency Rocky Intertidal Network, Redwood National and State Parks – Redwood Creek Estuary, Monterey Bay National Marine Sanctuary, National Oceanic and Atmospheric Administration, National Parks Service, Channel Islands National Marine Sanctuary, Scripps Institution of Oceanography, and Vantuna Research Group. Staff also represented CDFW at more than ten MPA research and monitoring meetings and workshops, and made 19 presentations related to the management of the MPA Network.

Enforcement and Compliance – From January through June 2018, more than 11,000 MPA-related contacts were made by CDFW's Law Enforcement Division (LED) staff, resulting in 396 warnings and 222 citations.

Assembly Bill 2369 was signed by Governor Brown on August 24, 2018 and will go into effect January 1, 2019. This bill increases the fine amount for a commercial fishing violation (which includes commercial passenger fishing vessels/party boats) in an MPA to be consistent with other illegal-take-for-profit penalties.

Management program staff coordinated with LED to compile, analyze, and interpret LED citation data for the first five years of MPA implementation in the North Coast

MPA research staff and partners spent more than 40 days in the field in 2018.

MPA planning region (California-Oregon border to Alder Creek, near Point Arena). Coordination efforts continue for various MPA implementation activities to improve the enforcement and compliance of the MPA network, such as developing a records management system and clarifying MPA regulations to improve compliance.

Policy and Permitting – The MPA Statewide Leadership Team is an advisory body convened by OPC to ensure effective communication and collaboration among partner entities that have significant authority, mandates, or interests that relate to the MPA Network. A new Leadership Team Work Plan was approved in October by OPC, which defines priority actions in the four focal areas of the MPA Management Program over the next three fiscal years. The Work Plan outlines shared strategic priorities among the members of the Leadership Team and identifies key actions and outcomes related to the management of the MPA Network.

In August 2018, 17 California ocean stakeholders were selected by the International Union for the Conservation of Nature to hold evaluation meetings and site visits to assess how the MPA Network aligns with the International Union for the Conservation of Nature Green List program. If advanced to candidacy, California's MPA Network could be the first in the world added to the Green List as a collection of areas designed to function as a network.

CDFW and OPC's Science Advisory Team developed an ecologically based decision framework to estimate impacts of scientific collecting in MPAs. All scientific collecting permit applications requesting access to MPAs are now reviewed using this framework, which is also available online as a scientific journal publication. Using this framework, 70 individual Scientific Collecting Permits were issued for research within MPAs between January and November 2018.

As part of the adaptive management framework, the California Fish and Game Commission adopted two CDFW-recommended MPA regulatory packages in August 2018: 1) Repeal Rockport Rocks Special Closure, and 2) Permit tribal take in four MPAs (Kashtayit, Naples, Point Dume and Anacapa Island state marine conservation areas) and modify the boundaries of Stewarts Point State Marine Conservation Area and Stewarts Point State Marine Reserve.

For more information about California's MPAs, please visit the CDFW website at wildlife.ca.gov/MPAs.

OFFICE OF THE GOVERNOR

February 28, 2019

The Honorable Wilbur Ross
Secretary, U.S. Department of Commerce
1401 Constitution Ave NW
Washington, District of Columbia 20230

Dear Secretary Ross:

California is experiencing an economic disaster to our Red Sea Urchin fishing industry and communities due to oceanic conditions that have affected the kelp forest ecosystems.

Persistent warm ocean conditions that began in 2014 and the resulting trophic cascade of ecological impacts has affected the fishery in the Northern Management Zone. The warm water event devastated kelp production (93% loss of surface kelp canopies compared to 2008 levels), a primary food source for urchins that created persistent starvation conditions. Starvation has led to reductions in the food value of the urchins targeted by the fishery in northern California. In addition, a population explosion of the less marketable purple sea urchin continues to overgraze the recovering kelp beds, adding further stress to the fishery.

The California Red Sea Urchin Fishery is managed under two distinct Management Zones. Take in the Northern Zone (north of Monterey/San Luis Obispo County Line) largely occurs north of San Francisco Bay. Take in the Southern Zone (south of Monterey/San Luis Obispo County Line) largely occurs at the Channel Islands and along the mainland coast south of Point Conception. Commercial take in the two zones is differentiated by a distinct size limit and season structure. In addition, a stock assessment completed in 2009, analyzed northern and southern fisheries separately due to differences in catch histories and life history parameters.

In 2016 and 2017, ex-vessel revenue in the Northern Management Zone fell by 76% and 78%, respectively compared to the previous 5-year average (2011-2015) of $2,577,105 (Table 1).

Table 1. Comparison of ex-vessel revenue in 2016 and 2017 to average ex-vessel revenue from 2011 to 2015 in the Northern Management Zone.

Average Revenue 2011-2015	$2,577,105
2016 Revenue	$607,611
% Difference from Average	**-76%**
2017 Revenue	$577,254
% Difference from Average	**-78%**

These estimated impacts are based on ex-vessel value of commercial landings and do not account for additional impacts to fish processors or to other businesses that rely on the fishery.

Given the significant impacts, I request you declare a fishery resource disaster for the fishery in the Northern Management Zone under section 308(d) of the Interjurisdictional Fisheries Act of 1986 (16 U.S.C. § 4107(d)), and a commercial fishery failure under section 312(a) of the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (16 U.S.C. § 1861a(a)).

As you know, declaring a commercial failure will enable the affected fishing communities to receive essential economic assistance, which will be critical for the well-being of our fishing industry and our state. Red sea urchin is a vital component of California's natural resources and provides significant commercial, cultural, and economic benefits to our state. I also ask National Oceanic and Atmospheric Administration Fisheries to work directly with the California Department of Fish and Wildlife (CDFW) to expeditiously complete the required review process.

The CDFW contact is Dr. Craig Shuman (Craig.Shuman@wildlife.ca.gov), and the designated alternate is Sonke Mastrup (Sonke.Mastrup@wildlife.ca.gov).

Thank you for your consideration of this critical issue.

Sincerely,

Governor Gavin Newsom

cc: The Honorable Diane Feinstein
The Honorable Kamala Harris
The Honorable Jared Huffman
The Honorable Jackie Speier
The Honorable Jimmy Panetta
The Honorable Salud Carbajal
The Honorable Anna G. Eshoo
The Honorable Mike Thompson
The Honorable Mike McGuire, Chair
Joint Committee on Fisheries and Aquaculture
California State Senate

The Honorable Jim Wood, Vice Chair
Joint Committee on Fisheries and Aquaculture
California State Assembly
Charlton H. Bonham, Director
California Department of Fish and Wildlife
Melissa Miller-Henson, Acting Executive Director
California Fish and Game Commission

Marine Resources Committee (MRC) 2018-2019 Work Plan
Scheduled Topics and Timeline for
Items Referred to MRC from California Fish and Game Commission
Updated April, 2019

Topic	Category	2019		
		MAR	JUL	NOV
		Sacramento	San Clemente	Sacramento
Planning Documents				
MLMA Master Plan for Fisheries - Implementation Updates	Master Plan Implementation	X	X	X
Abalone FMP / ARMP Update	FMP	X	X	X
Herring Fishery and FMP Update	FMP	X		
Aquaculture Programmatic Environmental Impact Report (PEIR)	Programmatic Plan	X	X	
Regulations				
Aquaculture Lease Best Management Practices (BMP) Plan Requirements	DFW-FGC Project/ Rulemaking	X/R	X	
Kelp & Algae Commercial Harvest	DFW Project/ Rulemaking		X	
Emerging/Developing Management Issues				
Aquaculture State Water Bottom Leases: Existing and future lease considerations	Lease Management Review			
Special Projects				
California's Coastal Fishing Communities	MRC project	X/R	X	
Informational / External Topics of Interest				
Discussion on legislative authority of sport fisheries (PROPOSED NEW)	Informational		X	
Marine Debris and Plastic Pollution (updates upon request)	Informational			
BOEM Offshore Wind Energy Project (updates upon request)	Informational			
Lobster Advisory Committee lessons learned report - presentation by Heal the Bay	Informational			
Commercial trap fishing gear innovations to reduce risk of entanglements	Informational	X		

KEY: X Discussion scheduled X/R Recommendation developed and moved to FGC

STATE OF CALIFORNIA
Gavin Newsom, Governor

Fish and Game Commission

Wildlife Heritage and Conservation
Since 1870

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Acting Executive Director
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MARINE RESOURCES COMMITTEE

Committee Co-chairs: Commissioner Sklar and Commissioner Silva

March 20, 2019 Meeting Summary

Following is a summary of the Marine Resources Committee (MRC) meeting as prepared by staff. An audio recording of the full meeting may be accessed online at www.fgc.ca.gov/meetings.

Call to order

The meeting was called to order at 9:03 a.m. by Commissioner Silva at the Natural Resources Building, Redwood Room, 1416 Ninth Street, Sacramento, CA. Elizabeth Pope, Acting Marine Advisor, gave welcoming remarks. Commissioner Sklar announced that a new commissioner, Samantha Murray, had been sworn in the previous day and would likely be appointed to MRC at the next Commission meeting, while he would likely move to the Wildlife Resources Committee.

Elizabeth Pope introduced California Fish and Game Commission (Commission) staff and California Department of Fish and Wildlife (Department) staff, and outlined the meeting procedures and guidelines. She noted that MRC is a non-decision-making body that provides recommendations to the Commission and indicated that the meeting may be audio-recorded and the recording posted to the Commission website. The following individuals were in attendance:

Committee Co-Chairs

Eric Sklar	Present
Peter Silva	Present

Commission Staff

Melissa Miller-Henson	Acting Executive Director
Susan Ashcraft	Acting Deputy Executive Director
Elizabeth Pope	Acting Marine Advisor
Sergey Kinchak	Staff Services Analyst
Leslie Hart	Sea Grant State Fellow
Maggie McCann	Sea Grant State Fellow

Department Staff

Craig Shuman	Regional Manager, Marine Region
Mike Stefanak	Assistant Chief, Law Enforcement Division

Bob Puccinelli	Captain, Law Enforcement Division
Randy Lovell	Statewide Aquaculture Coordinator
Sonke Mastrup	Invertebrate Fisheries Program Manager, Marine Region
Debbie Aseltine-Neilson	Senior Environmental Scientist (Specialist), Marine Region
Ryan Bartling	Senior Environmental Scientist (Specialist), Marine Region

Guest Speakers

Jenn Eckerle	Deputy Director, California Ocean Protection Council
Sarah Valencia	Project Manager, Pacific Herring Fishery Management Plan
Geoff Shester	Senior Scientist, Oceana, and member of the Dungeness Crab Fishing Gear Working Group
Alexis Jackson	Fisheries Project Director, The Nature Conservancy

1. Approve agenda and order of items

MRC approved the agenda but changed the order of items. Items 5 and 10 were discussed immediately following a partial completion of item 3. For purposes of the meeting summary, items are listed in the order of the published agenda.

2. General public comment for items not on the agenda

George Osborn, representing California Sportfishing League, expressed appreciation for the Department's newly-released "R3" report and thanked the Department for the support.

A commenter expressed the desire for committee meetings to be mandatorily recorded. He also requested a precise report on the illegal take of abalone statewide since the black abalone fishery was closed and expressed concern over foodborne illness risks associated with abalone aquaculture.

A representative of an environmental non-governmental organization (NGO) thanked MRC and the Commission for supporting Senate Bill 1017 (related to commercial fishing and drift gillnet fisheries). He also commented on the National Marine Fisheries Service's (NMFS) initial scoping process to re-establish a pelagic longline fishery and expressed concern that replacing gillnets with pelagic longlines could result in excessive bycatch; he asked that California take a strong stance against this move and President Sklar expressed his support for that position.

Commenters from two additional environmental NGOs expressed that their organizations also strongly oppose new pelagic longline fishing gear off the west coast. One highlighted a concern about substantial impacts of gear type on black-footed albatross and asked the state to take a stronger stand against this potential authorization.

A representative from Commercial Fishermen of Santa Barbara expressed that the views of a previous commenter on abalone did not represent his community and that the community is working collaboratively with state agencies and conservation groups to address issues facing commercial fisheries.

A representative from Coastal Conservation Association of California commented that 1) he is supportive of the R3 process and its potential outcomes; 2) supports looking at upgrades to the sport fish licensing program; and 3) requests that the Commission focus further attention on

plastics, specifically banning balloon releases. Commissioner Sklar noted that Senator Ben Allen is introducing a comprehensive plastics bill to address the broader plastic question, and the Commission would consider supporting that bill.

A representative from the Port of San Diego highlighted the port's Aquaculture and Blue Tech Program and Blue Economy Incubator, as well as the role of ports and harbors to create pathways for pilot projects. She announced a comprehensive Port Master Plan update, which will be released in April for a 90-day public review.

3. Staff and agency updates

(A) Ocean Protection Council (OPC)

Jenn Eckerle provided updates on current OPC activities of interest and new OPC members. The draft OPC strategic plan, which now includes a new goal of advancing sustainable blue economies, will be released and open for a 30-day public review on March 25. She also identified that the Marine Protected Area (MPA) Statewide Leadership Team is reissuing its call for tribal representatives through May 30, and that the funding solicitation for projects for Proposition 1 funds has closed.

The next OPC meeting is May 15 and will include: approving approximately $17 million to support MPA long-term monitoring, restoration, and outreach/education; approving nominees to OPC's Science Advisory Team; a proposed north coast fishery study looking at conflicts between off-shore wind and commercial fishing; and approving guidelines to disperse $56 million in Proposition 68 funds.

Discussion

A commenter asked about how purple urchin removal was addressed in the OPC strategic plan and when Proposition 1 finalists would be updated on review status. Jenn clarified that the strategic plan has an objective focused on kelp forest recovery, and that the funding review panel is in the process of being finalized, with a meeting to start the review process likely after the May OPC meeting.

President Sklar expressed his support of OPC's work and willingness to help get funding from the California State Legislature, especially for fishery management plans.

(B) Department

Marine Region: Craig Shuman highlighted that *Marine Region 2018 Year in Review* has been posted on the Department's website. He also indicated that staff is working on a rulemaking package to implement AB1573 (Statutes of 2018, Chapter 477), related to experimental fishing permits. Per MRC request in Nov 2018, Craig discussed lobster advisory committee stakeholder perceptions, and that through the committee mutually beneficial outcomes were developed for the fishery. He emphasized the importance of integrating stakeholders from an early stage and welcomes feedback on the process. He shared that the online fisheries portal is under development and the region is seeking feedback. In closing, Craig reiterated that he, personally, and other Department staff have an open-door policy.

A commenter requested WRC to consider a workgroup for exploring how permits would be issued for a future box crab fishery. Craig responded that a future fishery is still uncertain, and while changes to the current approach for permit issuance haven't been developed, there will be opportunities to look at other ways to allocate the permits.

Law Enforcement Division: Bob Puccinelli provided an update on recent enforcement actions in the marine environment. Responding to a prior MRC request, he provided an update on compliance with the red abalone recreational fishery closure. Compliance has been very good and there have been no reported cases of red abalone poaching.

A commenter requested that complete data for all abalone poaching for the entire state be presented. Commissioner Sklar responded that the need for better monitoring for poaching made a case for having more enforcement on the water.

(C) *Commission staff*

Melissa Miller-Henson provided an update on recent Commission staff changes.

4. Pacific Herring Fishery Management Plan (FMP)

Sarah Valencia presented the history of the Pacific Herring FMP development process, including proposed methods for setting quotas based on harvest control rules and ecosystem indicators. She provided an update on the outcomes of the FMP peer-review process that occurred after the last MRC meeting, including how specific concerns were identified and addressed. Specifically, additional ecosystem indicators were integrated into the harvest control rule. The Commission is scheduled to receive the draft Pacific Herring FMP and proposed implementing regulations in June.

Discussion

Following discussion and clarifying questions from the public, Commissioner Sklar thanked Sarah for her work and commented that the approach might be used as a model in future FMP developments.

5. Red Abalone FMP

Alexis Jackson gave a presentation on the collaborative process developed to assist in integrating management strategies for the Red Abalone FMP. She described the background of the project and introduced a collaborative structure developed in response to the MRC recommendation adopted by the Commission, which includes three teams: an administrative team, project team, and modeling team. Alexis reviewed the roles, scope of work, and composition of each team, and accomplishments to date. She emphasized areas in which the public can engage with the process and its iterative nature. An update should be available in April or May, with the modelling expected to begin by the end of the year.

Commissioner Silva noted that the project team was open to the public and asked how feedback would be addressed. Sonke Mastrup clarified that the intent is to address public comments similar to a rulemaking, where a comment summary and DFW response would be drafted and posted; Commissioner Silva supported that approach.

Discussion

Comments were provided for general support on the level of stakeholder participation and the collaborative process between DFW and TNC. A former commercial abalone fisherman commented that he would like to see the *de minimis* fishery concept also be applied to commercial green and red abalone harvest, and expressed doubt in the usefulness of modeling and frustration at the pace and expense of progress.

President Sklar expressed thanks to staff and stakeholders for participating and supporting the collaborative work, especially with regard to considering a *de minimis* recreational fishery.

6. Marine Life Management Act (MLMA) master plan implementation

Debbie Aseltine-Neilson gave a presentation on a draft implementation work plan. Designed to be comprehensive and adaptable, the draft work plan includes seven elements with individual tasks and timeframes from the master plan and MLMA. The Department's intent is to have a prioritized list for the Commission in October and an update on high priority fishery management recommendations in February 2020. Any public comments on the draft work plan will be incorporated into a final version for the June 2020 Commission meeting.

Discussion

Comments were made on the considerations of and incorporation of issues such as climate change, prioritizing enhanced status reports, and considering bycatch. Debbie responded with specific details and opportunities for focused review and comment that would help inform the final draft.

The commissioners expressed appreciation for the momentum and work toward implementation, and offered any ways in which MRC could assist in the upcoming efforts.

7. Coastal Fishing Communities Project

Leslie Hart gave an update on the project's progress, organized into four focal areas: outreach, collaborations, identifying partner efforts, and staff report. Specifically, she highlighted that staff are integrating feedback from the public comments into a revised staff report and developing more comprehensive information. Staff responses to each comment, that were summarized for MRC in November, will be added to the comment table and included with the final staff report. She highlighted key collaborations and partner efforts that will support the Commission's work, and shared that a specific fishing communities webpage linked to the Commission website will be released once the current website template conversion is completed in April.

Discussion

Commenters expressed general support for the project, including next steps as outlined.

Susan Ashcraft clarified that Commission staff will continue to analyze options identified in the staff report—such as exploring what the scope of a review of the Commission's restricted access policy might include—and will bring the updated information to MRC at future meetings.

8. Offshore marine aquaculture programmatic environmental impact report (PEIR)

Randy Lovell provided a presentation on developing a PEIR that will evaluate a proposed regulatory framework governing future offshore marine aquaculture in California. He discussed the scope and scale of the program, and objectives to encourage offshore aquaculture development while protecting the environment and existing local commercial fishing activities. Alternative programs were also included. It is expected that the draft PEIR will be released for public comment at the end of May.

Discussion

The Committee co-chairs asked clarifying questions about program alternatives and scope. Randy clarified that program alternatives that limit different variables, such as the number of leases issued or size of leases, are discussed in the PEIR.

A commenter expressed concern about the amount of expansion if there was no holistic view and emphasized the importance of spatial considerations for aquaculture siting in the CEQA analysis. Randy responded that individual projects would need additional environmental review, which would include addressing cumulative impacts. MRC urged that the process look at how/where other farms have been placed as a reference and noted that the PEIR will provide a framework, but that individual projects would still be looked at by the Commission, which will also take cumulative impacts into consideration.

A commenter identified a series of environmental concerns related to finfish aquaculture and asked why the project was being done. Commissioner Sklar responded that all the identified problems would be addressed, and that it was a necessary food source in the face of climate change reducing future food sources. Randy added that aquaculture would potentially reduce environmental impacts of water use in food supply, and Commissioner Sklar mentioned that technology was being developed for finfish aquaculture feed without relying on the wild forage base.

A consultant commented that an aquaculture workshop (Pathways Towards Sustainable Aquaculture), hosted by Sea Grant, was held in Moss Landing in 2018, and offered assistance in gathering the subject matter experts who had participated should the MRC like to have a similar event. President Sklar suggested that if the November MRC is moved to Monterey, it might be possible to take advantage of this potential assistance. Staff agreed to explore the possibility of a meeting location change and to explore feasibility and potential value of a workshop. Randy added that videos from the workshop presentations are available at www.aquaculturematters.ca.gov.

9. Shellfish aquaculture best management practices (BMPs)

Randy Lovell provided a verbal update on developing a proposed regulation to require BMP plans for state water bottom leases issued by the Commission for purposes of aquaculture. He identified that while a BMP document was not complete, a web portal developed by collaborators at UC Santa Barbara can serve as a potential interim resource for aquaculture growers.

No formal recommendation was made by MRC, though staff acknowledged that work efforts are on hold until staffing challenges can be addressed.

10. Commercial trap fishing gear design

Ryan Bartling provided a presentation on efforts by the California Dungeness Crab Fishing Gear Working Group to explore gear design innovations to reduce the risk of whale entanglement, and provided a one-page set of criteria for effective ropeless gear design. He described emerging topics identified during a Department-hosted public discussion.

Geoff Shester, as a working group member, supplemented the Department information with a presentation related to development and testing of ropeless trap gear, including specific gear variations and technological solutions, enforcement concerns, and long-term goals.

Discussion

Commissioner Silva asked a clarifying question regarding tracking and enforcement. Ryan stated that the intent is to partner with enforcement in software development to address the concerns. Bob Puccinelli clarified that while enforcement does have concerns, many manufacturers have been very receptive.

Meeting participants discussed the use of existing pop-up gear and its associated benefits and enforcement concerns. A commercial fisherman suggested exploring reducing the number of traps in the water as a method to reduce entanglement without hurting fishers—if it was well planned and if there is too much effort in the fishery already. It was also noted that putting more traps on each line might be more economical while reducing lines in the water, and that work on developing ropeless fishing gear by Dr. Terry Moss could be helpful for further discussion.

President Sklar thanked the presenters for their work. He mentioned his perspective that if the commercial Dungeness crab fishery is moved under the Commission's authority, fishermen can better take on these issues.

11. Future agenda items

(A) Review work plan agenda topics and timeline

Elizabeth Pope reviewed the updated work plan and highlighted potential agenda topics for the July 2019 MRC meeting.

(B) Potential new agenda topics for Commission consideration

Elizabeth asked whether the discussion during Agenda Item 8 (aquaculture PEIR) about possibly moving the November MRC meeting to Monterey, and exploring the feasibility of scheduling a corresponding workshop on aquaculture in Moss Landing, was a formal MRC recommendation or an inquiry for staff to explore. Commissioner Sklar clarified that it was a request for staff to look into the feasibility of these options.

Discussion

George Osborn, representing California Sportfishing League, requested that MRC recommend to the Commission that MRC initiate a discussion about potentially moving more authority for sport fisheries to the Commission.

Craig Shuman asked for clarification about the scope of such a discussion, as most recreational fisheries are already under Commission authority. Mr. Osborn clarified that the request primarily pertains to fees and licensing.

Commissioner Sklar expressed interest in holding the discussion and expanding it to include commercial fisheries as well; he specifically highlighted the commercial Dungeness crab fishery.

Staff expressed concern about workload associated with the request given the other projects currently underway; in response, MRC requested that George develop a presentation, identify commercial fishing representatives who could present their perspective on those commercial fisheries that are under the authority of the California State Legislature or Department, and develop an informational presentation with guidance from Commission staff.

MRC Recommendation

Refer a new topic to MRC based on a request from George Osborn, representing California Sportfishing League, to provide an informational presentation on options to shift more authority for sport fisheries to the Commission, and expand the topic to include state commercial fisheries currently under legislative authority. To avoid increased workload for Commission staff, MRC requested that George solicit commercial representative participation in the presentation and conversation, and to develop the informational presentation with guidance from staff, for discussion at the July 2019 MRC meeting.

Adjourn

The Committee adjourned at approximately 3:00 p.m.

Date: March 6, 2019
RE: Abalone Management
Dear Commissioners:

I want to take this opportunity to thank the Commission for their involvement and guidance regarding northern California's recreational red abalone fishery and the proposed FMP. California's abalone fishery, even among stakeholders and scientists, has historically been contentious. To the Commission's credit, you have taken the unusual step of allowing an independent peer review of an outside collaborative proposal between TNC and fishermen, along with the CDFW's proposal. You have also asked the CDFW, TNC and fishermen to work together to integrate the two proposals. In addition, you've directed that the FMP goals be revised to allow for a *de minimis* fishery. If our current efforts are successful to accomplishing these goals, the process could be a blueprint for other fisheries, including the southern abalone fishery. Additionally, we should not only end up with the best possible fishery management plan for a recovering, sustainable fishery, but also very important, the process will have been inclusive and transparent. I don't think fishermen could have expected more than what you've asked to be done. Now we just have to make it happen and I look forward to helping reach those goals.

I simply want to say that from someone who has been involved as a fishing advocate for many years, I appreciate the Commission's leadership and am looking forward to working with the CDFW, TNC and the Commission to produce the best possible outcome.

Sincerely,

Jack Likins
Recreational Abalone Fisherman

CDFW News

CONSERVATION EDUCATION, CRAB, ENDANGERED SPECIES, ENVIRONMENTAL SCIENCE, FISHERIES, FISHING (COMMERCIAL), HABITAT CONSERVATION, MARINE, WILDLIFE PROTECTION

Entanglement Settlement Protects Whales, Sea Turtles and California's Crab Fishery

MARCH 26, 2019 | KMACINTY

SAN FRANCISCO — Californians will be pleased to know that Dungeness crab will be caught off the coast with greater care for endangered wildlife under a settlement announced by the Center for Biological Diversity, the California Department of Fish and Wildlife (CDFW) and the Pacific Coast Federation of Fishermen's Associations (PCFFA).

The legal settlement protects whales and sea turtles from entanglement in commercial Dungeness crab gear. The Center for Biological Diversity sued CDFW in October 2017 after a drastic increase in the number of whale entanglements off the West Coast.

"As I've said many times, no one wants whale entanglements to happen," said CDFW Director Charlton H. Bonham. "This agreement represents hours of intense negotiation to help ensure they don't happen while supporting the resiliency of the crab fishery in the long run. I am thankful for the leadership of the Center for Biological Diversity and the Pacific Coast Federation of Fishermen's Associations who realized something needed to be done together."

"This is great news for whales and sea turtles fighting extinction off California's coast," said Kristen Monsell, a Center for Biological Diversity attorney. "The settlement will reduce serious threats from crab gear to these beautiful and highly endangered animals. This agreement is a turning point that gets us closer to zero entanglements and a healthy ocean."

The lawsuit was brought by the Center for Biological Diversity against CDFW (*Center for Biological Diversity v. Bonham*) in federal court in San Francisco. The Pacific Coast Federation of Fishermen's Associations, which represents crabbers, intervened in the lawsuit.

The settlement, subject to court approval, creates a comprehensive approach to the problem of whale entanglements. It expedites state regulation, ensures stakeholder input from the Dungeness crab Fishing Gear Working Group and formalizes a first-ever commitment by CDFW to pursue a federal permit for protecting endangered species. While these steps are executed, the settlement calls for this year's crab season to end three months early and prescribes protective measures for future springtime fishing seasons, when the greatest number of whales are present off the California coast.

In November 2018, CDFW announced (https://www.sfchronicle.com/opinion/openforum/article/California-seeks-plan-to-protect-whales-and-13426429.php) it would seek a federal permit under the Endangered Species Act to address protected species interactions with the crab fishery. Obtaining a permit and developing a conservation plan as part of that process can take years, so the settlement spells out interim protections.

"This settlement represents the path back to normality for California's crab fishery with built-in protections for whales and crab fishing operations under the Endangered Species Act," said Noah Oppenheim, executive director of PCFFA. "The past several years have been extraordinarily challenging for fishing families, and the actions we're taking here are no exception. But in the end, we're going to emerge together with a resilient, prosperous, and protective fishery that will continue to feed California and the nation."

Details of the settlement can be found at http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=166146 (http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=166146).

The mission of the California Department of Fish and Wildlife is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public.

The Center for Biological Diversity is a national, nonprofit conservation organization with more than 1.4 million members and online activists dedicated to the protection of endangered species and wild places.

The Pacific Coast Federation of Fishermen's Associations is the largest commercial fishermen's organization on the West Coast, representing 17 local and regional associations from Santa Barbara to Southeast Alaska. As a major commercial fishing industry trade association, PCFFA represents the interests of commercial fishing families who make their living harvesting and delivering high-quality seafood to America's tables.

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CRAB **DUNGENESS** **ENDANGERED SPECIES ACT** **ENTANGLEMENT** **SEA TURTLES** **WHALES**

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IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

CENTER FOR BIOLOGICAL DIVERSITY,

Plaintiff,

v.

CHARLTON H. BONHAM, in his official capacity as Director of the California Department of Fish and Wildlife,

Defendant,

and

PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS and INSTITUTE FOR FISHERIES RESOURCES,

Intervenor-Defendants.

Case No. 3:17-cv-05685-MMC

STIPULATION AND [PROPOSED] ORDER STAYING CASE

Judge: Hon. Maxine Chesney
Trial Date: None scheduled
Action Filed: October 3, 2017

Pursuant to Northern District Local Rule 6-2, Plaintiff Center for Biological Diversity, Defendant Charlton H. Bonham, in his official capacity as Director for the California Department of Fish and Wildlife, and Intervenor-Defendants Pacific Coast Federation of Fisherman's Associations and the Institute for Fisheries Resources (collectively, the "Parties") submit this stipulation and proposed order staying the case.

RECITALS

1. Plaintiff filed a complaint on October 3, 2017, alleging that Defendant has caused and is causing the "illegal 'take' of threatened and endangered humpback whales, endangered blue whales, and endangered Pacific leatherback sea turtles." (Dkt. No. 1.) Plaintiff's complaint challenges Defendant's "authorization, permitting, licensing, overseeing, and management of the California commercial Dungeness crab fishery," which Plaintiff alleges "is killing, injuring, harming, capturing, and otherwise causing 'take' of humpback whales, blue whales, and leatherback sea turtles in violation of" Section 9 of the Endangered Species Act. *Id.*; 16 U.S.C. § 1538.

2. Defendant filed an answer to Plaintiff's complaint on November 17, 2017, admitting and denying certain of Plaintiff's allegations. (Dkt. No. 15.)

3. After successfully intervening, Intervenor-Defendants filed an answer to Plaintiff's complaint on April 16, 2018, incorporating Defendant's responses in its answer, and admitting and denying certain of Plaintiff's allegations. (Dkt. No. 41.)

4. The Parties filed cross-motions for summary judgment in this case and appeared for oral argument on the motions on February 22, 2019. After the matter was deemed submitted, Defendant requested that the Court hold off on a ruling pending further settlement discussions. The Court agreed and ordered a joint status report to be filed by the Parties by March 15, 2019. (Dkt. No. 66.) On March 15, 2019, the Parties requested an additional week for continuing negotiations, which the Court granted. (Dkt. Nos. 67, 68.)

5. The Parties are happy to report that they have reached an agreement on a series of interim measures that will be protective of the threatened and endangered species at issue in this

lawsuit, which will be effective until Defendant receives an incidental take permit from the federal government. A true and correct copy of these agreed-upon terms is attached as Exhibit A.

6. Because these interim measures are incomplete in some respects, requiring further scientific analysis, development of the process by which threat levels will be evaluated and responded to, and implementation of rulemaking to provide the necessary regulatory framework for the program, the Parties have agreed that the appropriate procedural mechanism for resolving this litigation while protecting the Parties' respective interests is to stay the case.

7. A case stay would allow any party to reopen the case if another party acts in contravention of the attached terms, thus providing sufficient reassurance to the Parties that a continuing avenue for more immediate relief exists.

STIPULATION

THEREFORE, IT IS HEREBY STIPULATED among the Parties, through their respective counsel and subject to this court's approval, as follows:

1. All further proceedings in this matter, including the submitted cross-motions for summary judgment, should be stayed until the issuance of the final rulemaking described in Exhibit A as the RAMP rule. The case should be administratively closed during that time, subject to reopening on motion by any party. Within 14 days after the publication of the final rulemaking, the Parties will file a status report with the Court.

2. The Parties are willing to provide additional status reports to the Court every six months, or at whatever frequency would satisfy the Court that matters are proceeding.

IT IS SO STIPULATED.

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Dated: March 26, 2019

Respectfully submitted,

/s/ *Sara D. Van Loh*
Sara D. Van Loh
Deputy Attorney General
OFFICE OF THE ATTORNEY GENERAL

Attorneys for Defendant Charlton H. Bonham

/s/ *Kristen Monsell*
Catherine Kilduff
Kristen Monsell

Attorneys for Plaintiff
Center for Biological Diversity

/s/ *Glen Spain*
Glen Spain

Attorney for Intervenors Pacific Coast Federation of Fishermen's Association and Institute for Fisheries Resources

ATTESTATION

I, Sara D. Van Loh, am the ECF user whose identification and password are being used to file this STIPULATION AND [PROPOSED] ORDER STAYING CASE. In compliance with L.R. 5-1(i), I attest that the other signatories have concurred in this filing.

DATED: March 26, 2019

/s/ *Sara D. Van Loh*

[PROPOSED] ORDER

PURSUANT TO STIPULATION OF THE PARTIES, IT IS HEREBY ORDERED that:

1. All further proceedings in this matter, including the submitted cross-motions for summary judgment, are stayed until the issuance of the final rulemaking described in Exhibit A as the RAMP rule.

2. The court clerk is instructed to administratively close the case, subject to reopening on motion by any party.

3. Within 14 days after publication of the final rulemaking, the Parties will file a status

report with the Court.

4. The Parties will further submit a brief joint status update every six months from the date of this order until issuance of the RAMP rule.

DATED: _____

_____
HON. MAXINE M. CHESNEY
United States District Judge

Exhibit A

Center for Biological Diversity v. Bonham
Case No. 3:17-cv-05685-MMC
U.S. District Court for the Northern District of California

Exhibit A - Terms of Agreement

In the context of agreeing to support a stay of the case in advance of a ruling on the motion for summary judgment, the parties agree to the following measures:

I. The parties agree to the following:

a. The 2019 season will close statewide on April 15.

b. For the 2020 season and until submission of the draft HCP, the final state RAMP rule, or November 1, 2020, whichever is later, the season will close April 1 consistent with the approach described below.

c. Until the ITP issues, the following additional commitments will apply:

i. In consultation with the Working Group, the Director determines risk and management action on these dates: November 1, December 15, January 15, February 15, March 15, April 1, April 15, May 1, May 15, June 1, June 15, July 1.

ii. Prior to those dates, the Working Group will provide any RAMP risk assessment and management recommendation to the Director and settlement parties.

iii. The following also apply:

1. One or more confirmed entangled ESA listed species in CA Dungeness gear or two or more ESA-listed species confirmed in unknown gear prompts a district-wide closure, or other management action that the Director demonstrates protects listed species based on best available science after consultation with the Working Group and settlement parties.

2. Presence of 20 or more ESA-listed whales in a NOAA survey or a running average of 5 or more ESA-listed whales over a one-week period prompts a district-wide closure, or other management action that the Director demonstrates protects listed species based on best available science after consultation with the Working Group and settlement parties.

3. The April, 2020 season will close April 1 for Districts 10, 17, and south. That closure can be lifted by the Director after consultation with the Working Group and the settlement

parties, only if the risk is low as defined in the March 15, 2020 Working Group RAMP risk assessment and management recommendation and remains low for each successive reporting date during the 2020 season.

4. Beginning April 1, 2021, and each season on April 1 thereafter until the ITP issues, Districts 10, 17, and south are only open to ropeless fishing gear by default. This spring closure can be lifted at the next scheduled Director's risk determination, after consultation with the Working Group, only if the risk is low on all RAMP criteria.

II. **The parties agree the provisions contained in Appendix A will be submitted to the Working Group, and the Department will advocate that the Working Group consider them for incorporation into the RAMP rule unless the Working Group demonstrates a different approach protects listed species based on the best available science.**

III. **The parties further agree:**

a. The Department will:

i. Submit a comprehensive draft HCP to NOAA consistent with Section 10 of the ESA, 16 USC § 1539, for commercial Dungeness crab by May 15, 2020.

1. Involve the Center for Biological Diversity and PCFFA in the development process through quarterly consultations/check-ins.

ii. Prohibit crab gear spatially and temporally or take other measures as recommended by NOAA until ITP is issued.

iii. Complete the following rulemakings:

1. Gear retrieval, to be effective by November 15, 2019.
2. RAMP rulemaking – this shall incorporate the elements discussed below – to be effective by November 1, 2020.
3. Marking for fixed gear fisheries, to be effective by November 15, 2019.

iv. Pursue funding for an appropriate stipend for representatives to the Working Group.

v. Support the Working Group efforts to increase public access to meetings and Working Group members' participation via remote access.

vi. Commit to a regular frequency of RAMP workshops (i.e. webinar or public presentations) to provide accountability and public engagement regarding model design, model iteration, and other steps to increase trust and transparency in the RAMP and Working Group processes.

vii. Submit the criteria in Appendix A to the Working Group and advocate that the Working Group consider them for incorporation into RAMP rule unless Working Group demonstrates a different approach protects listed species based on the best available science.

b. Sea Turtle Evaluation Process - The Department will:
   i. Request and advocate for six months' funding (about $130,000) from OPC during 2020 or before for NOAA to adapt the EcoCast model to the Dungeness crab fishery and incorporate recent years' data into the model, and
   ii. Pursue funding in collaboration with NOAA scientists for Endangered Species Act Section 6 funding, 16 USC § 1535, to monitor sea turtle presence off central and northern California.

c. Whale presence modelling – the Department will continue to support development of humpback and blue whale distribution models that consider forage information, including automation of the model to apply to the ocean conditions risk factor.
   i. The Forney/Santora model, with results of hindcasting testing will be presented to the Working Group in March/April 2019.
   ii. The WhaleWatch model that predicts habitat suitability for blue whales will be refined to enable real-time predictions at the scale of 10 km.
   iii. The Department will work with OPC to finalize contracting for development of automated humpback and blue whale distribution models before November 1, 2020.
   iv. If NOAA completes internal review of the models outlined in (a) – (c) above and indicates they are ready for use in fisheries management, they can be used to inform the ocean conditions risk factor.

d. Monitoring/Solar Loggers –
   i. PCFFA commits to supporting this process by recruiting volunteers to fill the 40 available OPC funding spots for the 2019-2020 season. PCFFA will work to ensure volunteers provide a range of fishermen representing different tiers, levels of fishing effort, and fishing location.
   ii. If the 40 available OPC funding spots are not filled by volunteers during the 2019-2020 season, the parties agree to reconvene in June 2020 to discuss appropriate steps to further development of electronic monitoring.
   iii. As other applicable monitoring practices are developed (for example, self-reporting or aerial surveys), information can be incorporated as appropriate.

e. Ropeless Gear – the Department will continue to support development of ropeless gear technology, or any other alternative gear, and explicitly allow for its testing and use in the RAMP regulation.
   i. Authorized use of ropeless gear will include annual reporting requirements on the outcomes of use, and recommendations for further development.
   ii. The Department will amend existing regulations or finalize new regulations by November 1, 2020, that allow alternate gear, including ropeless gear, that meets the enforcement criteria to be used in any area closed to commercial Dungeness crab fishing to protect whales or sea turtles.

f. The parties will support this settlement publicly and coordinate any joint or separate press releases announcing the settlement to ensure they are consistent and appropriate in characterizations of this settlement and each party's intent.

g. The parties will file a stipulation and proposed order to stay the case pending issuance of the final RAMP rule.

Appendix A

The following provisions will be submitted to the Working Group, and the Department will advocate that the Working Group consider them for incorporation into the RAMP rule unless the Working Group demonstrates a different approach protects listed species based on the best available science.

The following risk factors will be used to evaluate entanglement risk, and the need for a responsive management action.

1. Predictive or projection factors, which in combination with a second factor would trigger action
    a. Fleet Dynamics, meaning behavior or potential behavior of the fleet due to changes in the fishery. Until satisfactory data is otherwise available (for example solar loggers or other electronic monitoring of the fleet), ***Trigger for elevated risk shall be*** (1) the first two weeks of any season opener; (2) any season that opens after Feb. 1.
    b. Ocean Conditions, meaning prediction or other indication of ocean or forage conditions for whales, including but not limited to low krill abundance and high nearshore anchovy abundance. Until models currently under development are finalized in consultation with the Center for Biological Diversity, ***Trigger for elevated risk is poor forage***. To assess forage conditions, the Director will consider stock assessments for various forage species (particularly anchovy and sardine), research cruises (e.g. the NOAA Rockfish Recruitment and Ecosystem Assessment midwater trawl surveys, acoustic trawl surveys for Coastal Pelagic Species), and oceanographic indicators (e.g. ENSO conditions and trends). The Director will also consider the prior analyses Dr. Jarrod Santora, Associate Researcher in the Department of Applied Mathematics, University of California at Santa Cruz, has completed (for calendar years 2013 – 2016) and compare current observations to those from prior years to make informed predictions about forage conditions. Data streams described above will be evaluated in light of the following correlations:
        i. Forage is considered poor and triggers elevated risk when at least two of the following are true:
            A. Upwelling is or is predicted to be below average. Specifically, upwelling is assumed to be below average when, according to data developed by NOAA offices which monitor El Niño events such as NOAA's Climate Prediction Center and the West Coast Office of NOAA's Coast Watch program, an El Niño is forecasted or occurring or sea surface temperatures are above average off California in the month prior to the evaluation.
            B. There is a low krill and high anchovy abundance according to NOAA stock assessments and surveys. In the absence of recent available data, this is considered true.

c. Regardless of abundance, whales are concentrated near shore based on NOAA aerial or shipboard observations. In the absence of recent available data, this is considered true.

2. Factors reflecting current, real-time conditions that would individually trigger action
   a. Presence of species of concern. ***Trigger for elevated risk*** shall be 20 or more whales detected on any one NOAA survey in California waters, or a running average of 5 or more whales over a one-week period.
      i. Once elevated risk is triggered, elevated risk shall last as follows:
         1. If based on fall aerial survey data, risk shall be elevated through December 15;
         2. If based on spring rock-fish data, risk shall be elevated through the remainder of the season.
      ii. NOAA survey shall mean the fall whale aerial survey and the spring rockfish survey. Other data streams, such as whale watch data, may also be considered in addition to the NOAA surveys.
      iii. If NOAA surveys for the current year are not available, historical data detailing whale presence shall be used.
      iv. Seasonal whale distribution information since 2012 will be used as an indicator for humpback whales' seasonal migration and anticipated arrival to California feeding grounds. The 7-day composite running average of NOAA survey whale sightings in the southern Monterey Bay will be used as indicator of whale concentrations. Reports from breeding grounds in Mexico and Central America will be used as an indicator of whale migration to predict when whales are expected to start arriving in greater numbers offshore California.

   b. Number of confirmed ESA-listed entanglements. ***Trigger for elevated risk*** shall be 1 or more entanglements of ESA-listed species in the current fishing season, calculated as follows
      i. A confirmed entanglement attributable to the CA commercial Dungeness crab fishery shall count as 1 entanglement.
      ii. A confirmed entanglement of a whale in an unknown gear type or a whale of unknown species shall count as 0.5 entanglement.
         1. The Department shall determine an entanglement is confirmed based on the following factors, consistent with NOAA classification:
            - Confirmed photo or video of the gear on the whale
            - Department or NOAA staff has direct visual observation
            - Report came from a trusted source (trained or professional observer)

- An experienced response entanglement network member or a NMFS expert interviewed the reporting party. The information provided is detailed and specific enough to confirm entanglement
- Corroborated, independent, and multiple sources providing reports with detailed descriptions of the animal and the entanglement.

iii. A reported or unconfirmed entanglement will be investigated by the Department within 48 hours to determine if the criteria that would classify that entanglement as confirmed apply.

3. Leatherback Sea Turtles – Trigger for elevated risk shall be NOAA tagging data that indicates a leatherback sea turtle is present in a fishing district or one or more-ESA listed turtles are confirmed entangled in CA commercial Dungeness crab gear or two or more confirmed in unknown crab gear.

4. The RAMP rule should include that in response to an elevated risk, the Director shall take appropriate management action. The Director shall also use this approach during an interim period until an ITP is issued.
   a. Management action will be commensurate with the risk of entanglement.
   b. Management action will be based on the best available science.
   c. Management actions will be forward-looking and spatially explicit, but still allow for response to real-time data.
   d. Management action will be consistent with Fish & Game Code 8276.1(c)(3).

5. A rubric adopted in the RAMP rule should outline a scoring system for each risk factor, and associated categories of management actions depending on overall risk score.
   a. The rubric will allow for Working Group input on practical implementation of the management action.
   b. Categories of management actions will include at least one the below:
      i. Modification of fishing seasons and allowable fishing areas;
      ii. Specifying total or per-vessel numbers of traps allowed in any given fishing area;
      iii. Requiring use of specialized gear designed to reduce risk of entanglement in specified areas or periods, for example no fishing unless with ropeless gear, or;
      iv. No action.
   c. Additional data collection and reporting may also be requirements, including but not limited to the use of solar loggers or other monitoring requirements.

Once risk factors no longer indicate to the Director an elevated entanglement risk, or if the Director determines that the management actions are not appropriate or protective of marine life, the Director, with consultation with the Working Group, shall remove any management restriction.

CERTIFICATE OF SERVICE

Case Name: ***Center for Biological Diversity v. Charlton H. Bonham*** Case No. **3:17-cv-05685-MMC**

I hereby certify that on March 26, 2019, I electronically filed the following document with the Clerk of the Court by using the CM/ECF system:

STIPULATION AND [PROPOSED] ORDER STAYING CASE

I certify that **all** participants in the case are registered CM/ECF users and that service will be accomplished by the CM/ECF system.

I declare under penalty of perjury under the laws of the State of California the foregoing is true and correct and that this declaration was executed on March 26, 2019, at San Francisco, California.

FE M. DOMINGO	/s/ Fe M. Domingo
Declarant	Signature

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CALIFORNIA DUNGENESS CRAB FISHING GEAR WORKING GROUP

March 29, 2019

The California Dungeness Crab Fishing Gear Working Group (Working Group) is a diverse, multi-stakeholder collaboration united by a shared goal to support thriving whale populations along the West Coast and a thriving and profitable Dungeness crab fishery. Established in September 2015, the Working Group is a unique coalition of commercial and recreational fishermen, environmental organization representatives, members of the whale entanglement response network, and state and federal agencies committed to identifying solutions that reduce the risk of whale entanglements in Dungeness crab fishing gear.

On March 26, the California Department of Fish and Wildlife, together with the Center of Biological Diversity and the Pacific Coast Federation of Fishermen's Associations, announced a settlement to protect whales and sea turtles from entanglement in commercial Dungeness crab gear. The Working Group was not a party in this litigation or the settlement terms. Moving forward, the Working Group understands they will have a role in advising the state in the evaluation of entanglement risk using the Risk Assessment and Mitigation Program (RAMP), which is a core foundational component of the settlement agreement.

On March 19, 2019, the California Department of Fish and Wildlife, in partnership with the National Marine Fisheries Service and the Ocean Protection Council, convened the Working Group's Evaluation Team to proactively discuss and assess the relative risk of entanglements following reports of increased humpback whale concentrations (a risk evaluation summary is available here). In light of changing events based on the settlement agreement, the Working Group will pause on recommending any additional management action for the commercial fishery during the 2018-19 season.

The Working Group encourages recreational Dungeness crab fishermen and commercial and recreational fishermen engaged in other fixed gear fisheries to review the March 19 risk assessment and consider fishing as minimal gear as possible to reduce vertical lines in the water. It is also strongly advised to avoid fishing in areas where there are groups of feeding or migrating whales, schools of anchovy, and/or swarms of krill during the spring and summer months.

The Working Group remains committed to continuing to address this pressing and complex issue through further developing the RAMP and working collaboratively with the state and its federal partners throughout the Incidental Take Permit/Habitat Conservation Plan development process. The Working Group will continue to track the RAMP and conduct future risk evaluations to inform recommendations to the Director in advance of and during the 2019-20 California Dungeness crab fishing season.

A request for nominations for new Working Group participants is expected to be available in April. Fishermen and whale watch operators are encouraged to participate in a pilot project testing solar loggers as a tool to help gather enhanced fishing dynamics and whale concentration information. Fishermen are also welcome to participate in gear innovation testing that is underway. To learn more about these opportunities, or to be added to the Working Group's public email list, please contact info@cawhalegroup.com.

Information about the Working Group's efforts, including opportunities to provide feedback and contribute expertise to the issue of whale entanglements: www.opc.ca.gov/whale-entanglement-working-group & www.opc.ca.gov/risk-assessment-and-mitgation-program-ramp.

CALIFORNIA DUNGENESS CRAB FISHING GEAR WORKING GROUP

March 19, 2019 Convenings

Evaluation Team Advisory
2018-19 Whale Entanglement Risk Assessment & Mitigation Program (RAMP)

On March 19, 2019, the California Department of Fish and Wildlife, in partnership with the National Marine Fisheries Service and the Ocean Protection Council, convened the California Dungeness Crab Fishing Gear Working Group (Working Group)'s Evaluation Team to proactively discuss and assess the relative risk of entanglements following reports of increased humpback whale concentrations. The Working Group identified the following risk levels for humpback whales:

Humpback Whales		
Risk Factors	**Current Entanglement Risk Assessment (March 19, 2019)**	**Entanglement Risk Assessment Outlook (April/May 2019)**
Entanglements	LOW	MODERATE TO HIGH
Forage/ocean conditions	MODERATE	MODERATE TO HIGH
Whale concentrations	LOW	LOW TO HIGH*
Fishing dynamics	LOW TO MODERATE	LOW TO HIGH*

*Outlook considers regional variability and considers spatial differences of where whales may be congregated.

More information and rationale for the scoring of each factor is available here (also see "Summary" section below for additional details). The Working Group anticipates changes in the distribution and concentrations of whales in the coming weeks and all risk factors will continue to be monitored closely and responded to as needed.

The Working Group encourages recreational Dungeness crab fishermen and other commercial and recreational fishermen engaged in fixed gear fisheries to fish as minimal gear as possible and remove any gear that cannot be serviced within required timeframes. When possible, fishermen should consider reducing the number of traps that are being actively fished to reduce vertical lines in the water and avoid fishing in areas where there are groups of feeding or migrating whales, schools of anchovy, and/or swarms of krill.

This update will be shared via the DCTF email list, the Working Group webpage, and CDFW's crab webpage. The Working Group welcomes your feedback and insights about the Working Group's efforts and the 2018-19 RAMP. Please visit http://www.opc.ca.gov/whale-entanglement-working-group or contact the Working Group at info@cawhalegroup.com.

Summary
The Evaluation Team was convened in response to a report of increased whale activity by members of the whale watch community received on March 15, 2019. Due to optimal weather conditions, on March 15 and 16, 2019 two aerial surveys were coordinated from Pt Lobos north to Gualala (here) where information on whales,

forage/prey, and Dungeness crab trap distribution was collected. Additional information related to whale concentrations (here), ocean conditions (here), fishing dynamics (via fishermen's on-the-water observations), and entanglements (here) was also gathered in advance of the March 19 Evaluation Team call.

The Evaluation Team determined that humpback whales are beginning to arrive in Dungeness crab fishing grounds. Although humpback and blue whales have not yet arrived in their traditional feeding grounds in moderate or high numbers, humpbacks are expected to arrive in greater numbers the next 2-3 week and blues in April/May. Grey whales are continuing to migrate north and appear to be at minimal risk for entanglement, primarily due to the speed they are traveling (i.e., not remaining in one place for an extended period of time). 1,767 crab traps were observed during the aerial survey in concentrations of up to 12 traps per transect, with fishermen reporting that gear is continually being brought to the dock. The March 14 El Niño Southern Oscillation (ENSO) report indicates a mild El Niño this spring (~80%) and summer (~60%) which has implications for forage and whale distributions. Additionally, based on the aerial survey, fishermen's observations, and previous forage reports, it is anticipated that this spring we will see strong abundance of both krill and anchovies.

California Fish and Game Commission

Potential Agenda Items for May and June 2019 Commission Meetings

The next Commission meetings are scheduled for May 16, 2019 by teleconference and June 12-13, 2019 in Redding. This document identifies potential agenda items for these meetings, including items to be received from Commission staff and the California Department of Fish and Wildlife (DFW).

Thursday, May 16: Teleconference

1. General public comment for items not on the agenda
2. Adopt: Mammal hunting, including deer/elk tag validation
3. Adopt: Klamath River Basin sport fishing
4. Adopt: Central Valley salmon sport fishing

Wednesday, June 12: Wildlife- and inland fisheries-related and administrative items

1. General public comment for items not on the agenda (Day 1)
2. Acting executive director's report (staff report, legislative update)
3. Tribal Committee
4. Wildlife Resources Committee
5. Private lands wildlife habitat enhancement and management area (PLM): Consider approving initial, five-year, and annual PLM plans and licenses
6. Candidacy decision: Northern California summer steelhead as endangered under the California Endangered Species Act (CESA)
7. Candidacy decision: Four bee species as endangered under CESA
8. Review and consider action on restricted species permit approved by DFW for San Diego State University to possess transgenic zebrafish
9. DFW presentation on upcoming simplification of statewide inland fishing regulations
10. Receive announcement of the annual California Fish and Game Commission Prosecutor of the Year Award recipient
11. Wildlife and inland fisheries items of interest from previous meetings
12. Action on wildlife and inland fisheries petitions for regulation change
13. Action on wildlife and inland fisheries non-regulatory requests from previous meetings
14. Receive DFW informational items (wildlife and inland fisheries)
15. Executive (closed) session

Thursday, June 13: Marine-related and administrative items

16. General public comment for items not on the agenda (Day 2)
17. Receive strategic planning update
18. Marine Resources Committee
19. Receive Draft Pacific Herring Fishery Management Plan (FMP)

20. Notice: Recreational and commercial regulations to implement the Pacific Herring FMP
21. Discuss and adopt: Hagfish traps
22. Receive: White seabass FMP annual review
23. Marine items of interest from previous meetings
24. Action on marine petitions for regulation change
25. Action on marine non-regulatory requests from previous meetings
26. Receive DFW informational items (marine)
27. Receive and discuss proposed meeting dates and locations of Commission meetings for January through December of 2020
28. Administrative items (next meeting agenda, rulemaking timetable, new business)

State of California
Department of Fish and Wildlife

Memorandum

Date: April 4, 2019

To: Melissa Miller-Henson
Acting Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: Request for Changes to the Fish and Game Commission's Timetable for Anticipated Regulatory Actions

The Department of Fish and Wildlife (Department) requests the following schedule changes to the Fish and Game Commission's (Commission's) 2019 regulatory timetable:

- Modify the name of the rulemaking currently titled "Statewide Sport Fishing Revisions and Simplification for 2020" to improve clarity on the scope of the rulemaking. The new requested title is "Simplification of Statewide Inland Fishing Regulations". The amended Sections are to be 5.00, 7.00, 7.50, and 8.10.
- Add a rulemaking to add a new Title 14 Chapter, Article or Section and to amend Sections 120.1(c)2 and 180(g), Title 14, CCR to establish an Experimental Fishing Permit (EFP) Program, as authorized by new FGC Section 1022, which states that "the Commission shall establish by regulation an expeditious process for Department review, public notice and comment, Commission approval, and prompt Department issuance of EFP". Requests for new EFPs cannot be accommodated until the regulations are in place.
    - The Department will propose a meeting schedule at the April 17, 2019 Fish and Game Commission meeting.

If you have any questions or need additional information, please contact Regulations Unit Manager, Michelle Selmon at (916) 653-4674 or by email at Michelle.Selmon@wildlife .ca.gov .

ec: Stafford Lehr, Deputy Director
Wildlife and Fisheries Division
Stafford .Lehr@wildlife .ca.gov

David Bess, Chief
Law Enforcement Division
David.Bess@wildlife.ca.gov

Craig Shuman, D. Env., Manager
Marine Region
Craig.Shuman@wildilfe.ca.gov

Kevin Shaffer, Chief
Fisheries Branch
Wildlife and Fisheries Division
Kevin.Shaffer@wildlife.ca.gov

Michelle Selmon, Program Manager
Regulations Unit
Wildlife and Fisheries Division
Michelle.Selmon@wildlife.ca.gov

Fish and Game Commission:

David Thesell, Program Manager
Fish and Game Commission
David.Thesell@fgc.ca.gov

California Fish and Game Commission – Perpetual Timetable for Anticipated Regulatory Actions

(dates shown reflect the date intended for the subject regulatory action)

Updated: 04/05/19

ITEMS PROPOSED FOR CHANGE ARE SHOWN IN BLUE FONT

For FGC Staff Use						2019													2020				
						APR	MAY	MAY	JUN	JUN	JUL	AUG	SEP	OCT	OCT	NOV	DEC	JAN	FEB	FEB	MAR	MAR
						17	16	16	11	12 | 13	11	7 | 8	5	8	9 | 10	5	11 | 12	TBD	TBD	TBD	TBD	TBD
QUARTERLY EFFECTIVE	DFW RU ANALYST	FGC ANALYST	LEAD	REGULATORY CHANGE CATEGORY	ACTION DATE, TYPE AND LOCATION	FGC SANTA MONICA	WRC SACRAMENTO	TELECONFERENCE SACRAMENTO, FAIRFIELD, ARCATA, SAN DIEGO	TC REDDING	FGC REDDING	MRC SAN CLEMENTE	FGC SACRAMENTO	WRC SANTA ROSA	TC SAN DIEGO	FGC SAN DIEGO	MRC SACRAMENTO	FGC SACRAMENTO	WRC TBD	TC	FGC	MRC	FGC TELECONFERENCE
					File Notice w/OAL by	02/19/19				04/16/19		06/11/19			08/15/19		10/15/19					
					Notice Published	03/01/19				04/26/19		06/21/19			08/23/19		10/25/19					
					Title 14 Section(s)																	
✱	MR	ST	HCB	Coast Yellow Leptosiphon and Lassics Lupine	670.2	E 4/1																
	MS	ST	MR	Recreational Take of Red Abalone	29.15																	
✱	MR	ST	MR	Commercial Logbooks	107, 174 and 176	E 4/1				and	E 7/1											
	MR	DT	MR	Recreational Purple Sea Urchin (Regular Rulemaking)	29.06																	
	TBD	ST	WLB	Wildlife Areas/Public Lands and Ecological Reserves	550, 550.5, 551 AND 630																	
	OA	SF/CC	MR	Sheephead Fillet	27.65(b)	E 4/1					E 7/1											
	MR	JS	WLB	Mammal Hunting, including deer/elk tag validation	362, 364, 364.1, 708.6	A D	V	A			E 7/1		R				N			D		
	MR	JS	LED	Archery Equipment and Crossbow	354(f)	A					E 7/1											
	MR	JS	WLB	Waterfowl (Annual)	502, 509	A	V				E 7/1		R				N			D		
	OA	SF/CC	FB	Klamath River Basin Sport Fishing (Annual)	7.50(b)(91.1)	D	V	A			E 7/1		R				N			D		
	OA	SF/CC	FB	Central Valley Salmon Sport Fishing (Annual)	7.50(b)(5), (68), (124), (156.5)	D	V	A			E 7/1		R				N			D		
✺	OA	CC	MR	Hagfish traps permitted on single vessel	180.6	N				D/A				E 10/1								
✱	MR	ST	MR	Recreational and Commercial Pacific Herring (fishery management plan implementation)	27.60, 28.60, 28.62, 163, 163.1, 163.5, 164					N			D			A		E 1/1				
	OA	JS	FB	Statewide Sport Fishing Revisions and Simplification for 2020 Simplification of Statewide Inland Fishing Regulations	TBD 5.00, 7.00, 7.50, 8.10		R		R			N			D		A			E 3/1		
	MR	JS	WLB	Mammal Hunting	362, 364, 364.1, 708.6								R				N			D		

RULEMAKING SCHEDULE TO BE DETERMINED

✺		CC	MR	Experimental fishing permit (EFP) program	120.1 and 180						V					V						
✱			MR	Commercial Kelp and Algae Harvest Management	165, 165.5, 704						V										V	
✱				Possess Game / Process Into Food	TBD																	
✱			OGC	American Zoological Association / Zoo and Aquarium Association	671.1																	
				Night Hunting in Gray Wolf Range	474																	
				Shellfish Aquaculture Best Management Practices	TBD				R										V		R	
✱				Ban of Neonicotinoid Pesticides on Department Lands	TBD																	
✱			MR	Commercial Pink Shrimp Trawl	120, 120.1, 120.2																	
✱			MR	Ridgeback Prawn Incidental Take Allowance	120(e)																	

EM = Emergency, EE = Emergency Expires, E = Anticipated Effective Date (RED "X" = expedited OAL review), N = Notice Hearing, D = Discussion Hearing, A = Adoption Hearing, V =Vetting, R = Committee Recommendation, WRC = Wildlife Resources Committee, MRC = Marine Resources Committee, TC = Tribal Committee

Yaun, Michael@FGC

From: FGC
Sent: Monday, December 11, 2017 7:34 AM
To: Miller-Henson, Melissa@FGC; Yaun, Michael@FGC
Subject: FW: Appeal hearing request

From: 1stChoiceOutfitters [redacted]
Sent: Saturday, December 09, 2017 8:16 AM
To: FGC <FGC@fgc.ca.gov>
Subject: Appeal hearing request

To whom it may concern, I received notice that my Guides Licence is being revoked and I would like to appeal the decision as I have 3 small children and guiding is my only source of income.

Please let me know what the process will be for an appeal.

Thank you
James Smith

Yaun, Michael@FGC

From: Kiene, David@Wildlife
Sent: Thursday, January 10, 2019 2:42 PM
To: FGC;
Cc: Yaun, Michael@FGC; Miller-Henson, Melissa@FGC
Subject: RE: Agency case no. 17ALJ18-FGC, Smith, James
Attachments: james smith plea form.pdf; james smith minute order.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Commission:

James Smith is requesting an appeal hearing before the Commission regarding the suspension of his guide license. However, Mr. Smith's guide license was suspended by the Superior Court of Napa County on January 2, 2018, for a period of three years, and not by any licensing action taken by the Commission or Department. (Please see attached court documents, specifically, "james smith plea form.") Therefore, the Commission does not have jurisdiction over this matter.

If you have any questions, please do not hesitate to contact me.

From: FGC <FGC@fgc.ca.gov>
Sent: Thursday, November 15, 2018 2:30 PM
To: ; Kiene, David@Wildlife <David.Kiene@wildlife.ca.gov>
Cc: Yaun, Michael@FGC <Michael.Yaun@fgc.ca.gov>; Miller-Henson, Melissa@FGC <Melissa.Miller-Henson@fgc.ca.gov>
Subject: Agency case no. 17ALJ18-FGC, Smith, James

Dear Mr. Smith and Mr. Kiene,

I am attempting to process the appeal filed with the California Fish and Game Commission, which was in response to a notice from the California Department of Fish and Wildlife (Mr. Kiene's client). Both the appeal and the notice are attached for reference.

Assuming the appeal is within the jurisdiction of the Commission, the appeal will be forwarded to the Office of Administrative Hearings (OAH) for the conduct of a hearing. OAH would conduct the hearing in its office location that is most convenient for appellant; OAH maintains offices in Sacramento, Oakland, Los Angeles, and San Diego. After OAH concludes a hearing, OAH would enter a proposed decision for the Commission's subsequent consideration. Attached is a brochure with some general background information about OAH.

Prior to forwarding the appeal to OAH, Commission staff needs additional information from the parties.

Please include the best contact telephone number information with your response.

Please respond to this email with the following:

1. Dates of unavailability from each of you over the next 6 months.

2. Your estimation of the duration of the hearing.

3. Confirmation that you or your client consent to audio recording of the hearing.

4. Any contact information identified above that is missing

No need for a hearing

If you would like to discuss the possibility of agreeing to a joint stipulation or settlement, please do so between yourselves. If some agreement appears likely, please let me know so that I may avoid referring the matter to OAH for a hearing. Alternately, if the Department does not object to this appeal and does not feel a need to participate in the proceeding, please respond stating that is the case.

If either the parties reach an agreement as to the outcome or the Department affirmatively declines to participate in the proceeding, Commission staff will not refer the matter to OAH and instead will ask the Commission to consider the matter at the next available Commission meeting.

Response and questions

Please provide your responses or direct any questions you may have to the Commission's Legal Counsel, Michael Yaun, who is copied on this email or can be reached at (916) 653-9719.

California Fish and Game Commission
1416 Ninth Street, Suite 1320
Sacramento, CA 95814
(916) 653-4899

NAPA SUPERIOR COURT

FILED

JAN 02 2018

Clerk of the Napa Superior Court

By

PLEA FORM

Defendant	Case Number
JAMES DALE SMITH	CR182893

INSTRUCTIONS

Fill out this form if you wish to plead guilty or no contest (or admit a violation of probation). **Initial the box for each item that applies to you,** but only if you understand it, and **sign and date the form on page 3.** If you have any questions about your case, the possible sentence, or the information on this form, ask your attorney or the judge.

YOU MUST READ AND INITIAL SECTIONS 1 AND 2

INITIALS
1.

1. **Right To A Trial** - I understand that I have the right to a speedy, public jury trial or court trial. At a trial, I would be presumed innocent, and I could not be convicted unless 12 impartial jurors (or the judge at a court trial) were convinced of my guilt beyond a reasonable doubt. (For a probation violation, I understand that I have a right to a hearing in front of a judge who would decide if I violated conditions of my probation.) I give up my right to a jury trial and my right to a court trial (or probation hearing).

Right To Confront And Cross-Examine Witnesses - I understand that I have a right to see and hear all witnesses who may testify against me at the trial. I understand that I have a right to ask them questions during the trial. I give up my right to confront and cross-examine witnesses.

Right To Produce Evidence - I understand that I have a right to present evidence, to testify in my own behalf, and to have the Court issue subpoenas to bring into court all witnesses and evidence favorable to me, at no cost to me. I give up my right to produce evidence.

Right To Remain Silent - I understand that I have a right to remain silent and not incriminate myself. I understand that by pleading guilty or no contest I am incriminating myself. I give up my right to remain silent.

Penalty For Charges I Am Pleading Guilty Or No Contest To (Or Admitting A Violation Of Probation To) - I understand the possible consequences of my plea(s) include the following:

Count No.	Charge (code & section no.)	Minimum Penalty (jail & fine)	Maximum Penalty (jail & fine)
• 1	F&G 2016	0/0	6 months/$1,000
	Other consequences		
•			
	Other consequences		
•			
	Other consequences		
•			
	Other consequences		
•			
	Other consequences		

I understand that in addition to the base fine, I will have to pay various legislatively imposed penalties, assessments, and fees. Such penalties, assessments, and fees will exceed 3 times the amount of the base fine.

I understand that a plea of guilty or no contest (or an admission to a violation of probation) may be grounds for violating probation or parole which has been previously granted to me in any other case.

I understand that, if I am not a United States citizen, a plea of guilty or no contest could result in my deportation, exclusion from admission to this country, or denial of naturalization.

	INITIALS
2. I **understand** if I am sentenced to county jail pursuant to PC 1170(h), a portion of my term may be suspended and, upon release from jail, I may be placed on mandatory supervision and if I violate any of the terms and conditions of my mandatory supervision, I could be returned to county jail for up to the remainder of my suspended jail term. **I understand** that I may be ordered to pay restitution to the victim(s), if any. I may request a hearing. **I understand** that I will be ordered to pay a restitution fine. The fine is $100 to $1000 for one or more misdemeanors and $200 to $10,000 for one or more felonies (if I am sent to prison or to county jail pursuant to PC 1170(h), I will pay an additional, identical restitution fine which will be suspended unless parole or community supervision is revoked). **I stipulate** there is a factual basis for my plea(s) in the police report. **I understand** that a plea of no contest has exactly the same effect in this case as a plea of guilty, but it cannot be used against me in a civil lawsuit unless the offense is a felony. **I understand** the nature of the charge(s) against me and the possible pleas and defenses. **No one** has used any threats, force, violence, duress or undue influence of any kind on me, or anyone close to me, in order to get me to plead guilty or no contest. **I declare** I am of sound mind and I am not under the influence of alcohol, drugs, or medication of any kind. **I hereby** freely and voluntarily *(circle one)* PLEAD GUILTY PLEAD NO CONTEST ADMIT A VIOLATION OF PROBATION to the charges listed in section(s) 1 ~~(and 10)~~.	2.

INITIAL SECTIONS 3 THROUGH 16 ONLY IF THEY APPLY TO YOUR CASE

3. **Plea Bargain** - The following promises have been made to me as a condition of my plea(s). No other promises have been made. I understand that if the Court refuses to follow this plea bargain then I will be allowed to withdraw my plea(s) of guilty or no contest and enter a not guilty plea. Plead ~~guilty~~ no contest to Count 1 (F&G2016), 3 years summary probation, minimum fine, no immediate jail or work program. Counts 2 and 3 will be dismissed. No early termination of probation. The Court will order defendant to relinquish his hunting guide license for a period of not less than three (3) years (or longer as determined by the California Department of Fish & Wildlife). Defendant will book and release at Napa County Detention Center.	3.
4. **Harvey Waiver** - I understand that ordinarily dismissed charges cannot be considered by the Court in deciding punishment for this case, or in ordering victim restitution. I agree the Court can consider the following dismissed charges when I am sentenced in this case and may order restitution for them: List Counts and/or Cases Dismissed	4.
5. **Right To A Preliminary Hearing** - I understand that I have a right to a preliminary hearing if I am charged with a felony. I give up my right to a preliminary hearing.	5.
6. **Parole Period** - I understand that if I am sent to state prison, I will be placed on parole or local community supervision when released. The maximum parole period is for the remainder of my life if I am sentenced to a life term for first or second degree murder. The maximum parole period is ten years if I am sentenced for an offense specified in paragraph (3), (4), (5), (6), (11), (15), (16), or (18) of PC667.5(c), or if I receive a life term under PC209(b), PC269, PC288.7, PC667.51, PC667.61, or PC667.71. The maximum parole period is five years if I am sentenced to a life term for any other offense. The maximum parole period or local community supervision is three years in all other cases.	6.
7. **Mandatory Registration** - I understand that I will be required to register as a *(circle one)* gang offender sex offender drug offender arson offender with the police or sheriff of any city or county where I live, if I am sentenced or granted probation.	7.
8. **Presumptive State Prison** - I understand that I will not be eligible for probation unless the Court finds my case involves unusual circumstances.	8.
9. **Mandatory State Prison** - I understand that I will not be eligible for probation.	9.
10. **Attachment One (Additional Charges)** lists additional charges I am pleading guilty or no contest to.	10.
11. **Attachment Two (DUI Offenses)** contains additional consequences.	11.
12. **Attachment Three (Suspended License)** contains additional consequences.	12.
13. **Attachment Four (Deferred Entry Of Judgment)** contains additional consequences.	13.
14. **Attachment Five (Deferred Entry Of Judgment Driving Program)** contains additional consequences.	14.

	INITIALS
15. **Attachment Six (General Misdemeanor Deferred Entry of Judgment Program)** contains additional consequences.	15.
16. **Arbuckle Waiver** - I understand that I may have a right to be sentenced by the judge who accepts my plea(s). I give up that right and agree to be sentenced by another judge.	16.
17. **Temporary Judge** - I understand that I have the right to enter my plea(s) before, and to be sentenced by, a judge. I give up this right and agree to enter my plea(s) before, and be sentenced by a temporary judge.	17.
18. **Right To An Attorney** - I understand that I have the right to be represented by an attorney in this case. I understand that the Court will appoint a free attorney for me if I cannot afford to hire one, but, at the end of the case, I may be asked to pay all or part of the cost of that attorney, if I can afford to. I understand that there are dangers and disadvantages to giving up my right to an attorney, and that it is almost always unwise to represent myself. I give up my right to an attorney, and I choose to represent myself.	18.
19. **Appeal** – I understand I have the right to appeal the judgment of the court by filing a notice of appeal with the clerk of this court within 30 days of the day I am sentenced for a misdemeanor and within 60 days of the day I am sentenced for a felony. I am entitled to a free lawyer and transcript on appeal.	19.

I understand the contents of this form and any attachments.

DEFENDANT'S SIGNATURE: _____ **DATE:** 1-2-18

ATTORNEY'S STATEMENT

I am the attorney of record for the defendant. I have gone over this form, and any attachments, with my client. I have explained each of the defendant's rights to the defendant and answered all of the defendant's questions about this form and the plea(s). I have discussed the facts of the case with the defendant and have explained the nature of the charges, the elements of the offense(s), any possible defenses, and the consequences of the plea(s). I join in the waivers, stipulate there is a factual basis in the police report, and consent to the plea(s).

SIGNATURE: _____ Lana Chikhani **DATE:** 1.2.18
(Signature) (Print Name)

INTERPRETER'S STATEMENT

I, having been sworn, or having a written oath on file, certify that I truly translated this form, and any attachments, to the defendant in the language indicated below.

Language: ☐ Spanish ☐ Other (specify) _____

SIGNATURE: _____ **DATE:** _____

PROSECUTOR'S STATEMENT

I am the prosecutor in this case. I have reviewed the information above and consent to the plea(s) being entered on the terms and conditions indicated. I stipulate there is a factual basis for the plea(s) in the police report.

SIGNATURE: _____ **DATE:** 1/2/18

COURT'S FINDINGS AND ORDER

The Court, having reviewed this form, together with any attachments, and having questioned the defendant concerning his or her constitutional and statutory rights, finds that the defendant understands his or her rights and that the defendant expressly, knowingly, voluntarily, and intelligently waived those rights. The Court finds that the defendant understands the nature of the charges and the consequences of the plea(s) and admission(s). The Court finds the plea(s) and admission(s) have been made freely and voluntarily. The Court finds there is a factual basis for the plea(s) and admission(s). The Court accepts the plea(s) and admission(s) and orders this form filed and incorporated in the docket by reference as though fully set forth therein.

SIGNATURE: _____ **DATE:** 1.2.18

SUPERIOR COURT OF CALIFORNIA, COUNTY OF NAPA
AMENDED MINUTE ORDER

Case:	People vs. Smith, James Dale	**Case #:**	CR182893
Judical Officer:	Victoria Wood	**Event Date:**	1/2/2018
Courtroom:	Department D	**Clerk:**	Jennifer Chapman
Event:	Change of Plea	**Reporter:**	Electronic Recording
PID #:	201602257-01	**Cite/Report:**	

Appearances:

Katy Yount, Prosecuting Attorney
L. Chicani attorney for Defendant
James Dale Smith Defendant present

CHARGE DISPOSITIONS

Defendant enters a plea of:

Plea	Count	Level
No Contest	001. FG2016-M-Trespass While Hunting	Misdemeanor

Court finds that defendant's plea was freely and voluntarily entered; there was a factual basis for said plea; and that the defendant made an intelligent waiver of his/her trial rights.

Count(s) 002, 003 is/are dismissed

SENTENCING AND PROBATION

The Court finds no legal cause why judgment and sentence should not be pronounced at this time.

Imposition of sentence is suspended, the Defendant is granted Summary Probation for a period of 3 Years under the terms and conditions as ordered this date.

Court Orders the Defendant shall pay a Restitution Fine pursuant to PC1202.4 in the amount of $150.00.

Defendant shall serve 1 Days in Jail-Book and Release only.

Defendant shall report to the Jail forthwith for Book and Release.

Defendant advises the Court that he/she understands and accepts the terms and conditions of Probation.

The Court Orders the following fines and fees:

Fine of $70 as to Count(s) 1 for a total of $70.00.

This is a deer related violation.

Matter is referred to Division Clerk.

SUPERIOR COURT OF CALIFORNIA, COUNTY OF NAPA
AMENDED MINUTE ORDER

-o0o-

GEORGE M. MAVRIS
ATTORNEY AT LAW

1 Point Saint George Place • Crescent City, CA 95531 • Ph. (707) 464-1418 • Fax (707) 464-3364

March 16, 2018

By Federal Express
Fish and Game Commission
1416 Ninth Street, Suite 1320
Sacramento, CA 95814

Re: **FV Neva-D**
Certificate of Documentation Official Number 232309
Fish and Game Boat # FG05064
Owner: Williams, Charles J.
Application for Reinstatement

Dear Commission:

Please consider the following our request to appeal the Department's Decision of January 24, 2018, not to renew the license associated with the above-entitled fishing vessel. It is my understanding that the Department has no discretion to renew a license once the deadline has passed and an appeal must be submitted directly to the Commission in order to effect reinstatement.

A. Background

Charles J. Williams, a Yurok tribal member, is a local fisherman living and working in Del Norte County. As you may know, Del Norte County, our northernmost county is among the poorest of California's 58 counties with historical unemployment rates in double digits.

Mr. Williams entire family is involved in the fishing industry, following in the footsteps of their ancestors who also earned their living from what was provided by the rivers and ocean. His involvement long predates the permitting process in California.

The right to fish at issue provides sustenance, livelihood and employment for the Williams family and has from time immemorial.

B. Licensing

As your records will certainly demonstrate, Mr. Williams has been continuously licensed with the Department of Fish and Game since the permitting process was established. Unfortunately, for the most recent licensing year, the duties of requesting a license were undertaken by a different family member and was not timely made as they were not aware that Mr. Williams had multiple licenses which needed to be processed.

Upon learning that the license for the fishing vessel was not properly renewed, Mr. Williams immediately attempted to renew his license through the Fish and Game. He was advised that he would first need to secure updated Certificate of Documentation through the United States Coast Guard/Department of Homeland Security.

Unfortunately, Mr. Williams did not receive documentation until after the late-filing deadline had passed. This has resulted in Mr. Williams not meeting the deadline to apply for the permit despite diligent efforts to remedy this upon discovery of the error.

By this letter, we are asking the Commission to consider the fact that Mr. Williams has been a fisherman in good standing for decades and who lost his license not due to malfeasance or wrongdoing but due to a clerical error. As is set forth in the Civil Code, "the law respects form less than substance." *California Civil Code § 3528.*

The substance here is that Mr. Williams has always obeyed the law and regulations with respect to the fishing industry and unfortunately, made a clerical error. To deny him the right to renew, despite paying all necessary fees and assessments, would work a great injustice not only on Mr. Williams, but his family and our county.

C. Conclusion

We would ask that this Commission exercise its discretion to allow reinstatement of his license. To that end, we have enclosed a check in the amount of $ 6490.25 which is the amount due as referenced in the letter of January 24, 2018. Of course, if there are other fees or assessments, please advise and we will submit prompt payment of the same.

Thank you in advance for your courtesy and cooperation in this regard.

Sincerely,

George M. Mavris

cc: Charles J. Williams

DHS, USCG, CG-1270 (REV. 06-04) OMB APPROVED 1625-0027

UNITED STATES OF AMERICA

DEPARTMENT OF HOMELAND SECURITY
UNITED STATES COAST GUARD

NATIONAL VESSEL DOCUMENTATION CENTER

CERTIFICATE OF DOCUMENTATION

VESSEL NAME	OFFICIAL NUMBER	IMO OR OTHER NUMBER	YEAR COMPLETED
NEVA D	232309	NONE	1933

HAILING PORT	HULL MATERIAL	MECHANICAL PROPULSION
CRESCENT CITY CA	WOOD	YES

GROSS TONNAGE	NET TONNAGE	LENGTH	BREADTH	DEPTH
13 GRT	9 NRT	37.2	11.7	5.3

PLACE BUILT

NEWPORT OR

OWNERS

CHARLES J WILLIAMS

OPERATIONAL ENDORSEMENTS

FISHERY

MANAGING OWNER

CHARLES J WILLIAMS

RESTRICTIONS

NONE

ENTITLEMENTS

NONE

REMARKS

None

ISSUE DATE

DECEMBER 11, 2017

THIS CERTIFICATE EXPIRES

DECEMBER 31, 2018

Christine G. Washburn

DIRECTOR, NATIONAL VESSEL DOCUMENTATION CENTER

COPY BAR CAUTIONARY ANTI-FRAUD PROTECTION

PREVIOUS EDITION OBSOLETE, THIS CERTIFICATE MAY NOT BE ALTERED

YUROK, INC.
CHARLES WILLIAMS

[redacted]

[redacted]

3-10-2018
Date

Pay to the Order of Dept fish + wildlife $ 6490 25

sixty four hundred ninety dollars 25/100 Dollars

Security Features Details on Back.

[redacted]

[redacted]

For [redacted]

MP

Harland Clarke

State of California -The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd
Sacramento, CA 95834
http://www.wildlife.ca.gov

EDMUND G. BROWN JR, Governor
CHARLTON H. BONHAM, Director

Certified Mail

January 24, 2018

Mr. George M. Mavris
Attorney at Law

Subject: **NOTICE OF DENIAL FOR A TRANSFERABLE DUNGENESS CRAB VESSEL PERMIT, PERMIT NUMBER CT0083-T4, AND SALMON VESSEL PERMIT, PERMIT NUMBER SA0198**

Dear Mr. Mavris:

This is in response to your client's, Charles J. Williams, request to reinstate the Transferable Dungeness Crab Vessel Permit (TDCVP), Permit Number CT00083-T4, and the Salmon Vessel Permit, Permit Number SA0198 for the F/V *Neva D* (FG05064).

Authority-Dungeness Crab Vessel Permit
Fish and Game Code (FGC) Section 8280.2(e) states that applications for renewal of all Dungeness crab vessel permits shall be received by the Department of Fish and Wildlife ("Department"), or, if mailed, postmarked, by April 30 of each year. In order for a vessel to retain eligibility, a permit shall be obtained each year subsequent to the initial permit year and the vessel shall be registered pursuant to Section 7881.

Authority-Salmon Vessel Permit
FGC Section 8235(a) states that the owner of a permitted vessel, or that owner's agent, may apply for renewal of the permit annually on or before April 30, upon payment of the fees without penalty. Upon receipt of the application and fees, the Department shall issue the permit for use of the permitted vessel in the subsequent permit year only to the owner of the permitted vessel.

Authority-Late Renewal Applications
Effective April 1, 2008 pursuant to FGC Section 7852.2 a graduated late fee was established for any renewal application that is received after the deadline.

In addition, FGC Section 7852.2(b) states the Department shall not waive the applicable late fee. Pursuant to FGC Section 7852.2(c), the Department shall deny any application for renewal received after the March 31 if the permit year following the year in which the applicant last held a valid permit for that fishery.

Reason for Appeal to the Department
In your January 22, 2018 letter, emailed January 23, 2018, your client, Charles J. Williams, is requesting reinstatement of the TDCVP and SVP for the F/V *Neva D.* You state that this vessel has been continuously licensed since the inception of the licensing process with the exception of last year due to an unfortunate oversight.

Department Findings
Department license records show that the F/V *Neva D* held a valid 2015-2016 TDCVP and SVP, which made Mr. Williams eligible to renew the permits for the 2016-2017 permit year.

Department's Determination
Based on the previously stated information, Mr. Williams' request to reinstate the TDCVP and SVP for the F/V *Neva D* are denied, because the F/V *Neva D* last held a valid TDCVP and a SVP over a year ago—i.e., in the 2015-2016 permit year. The Department received the request to renew the TDCVP and SVP on January 23, 2018. FCG Section 7852.2(c) states that the Department shall deny any application for renewal received after March 31 of the permit year following the year in which the applicant last held a valid permit for that fishery.

Deadline to File an Appeal to the Fish and Game Commission
If you wish to appeal the Department's decision, you must submit a written request to the Fish and Game Commission ("Commission") at 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, or you can request an appeal by emailing the Commission at fgc@fgc.ca.gov. Pursuant to FGC Section 7852.2(d), your appeal must be received within 60 days of the date of this letter. The Commission, upon consideration of the appeal, may grant renewal. If the Commission grants renewal, it shall assess the applicable late fee.

The Commission will review the information you submit and will notify you in writing if your appeal will be scheduled before the Office of Administrative Hearings. If the Commission should recommend approval, full payment of $6,490.25 would be due. A fee schedule is enclosed.

If you have any questions or require further assistance, please contact Ms. Ruth Flores at (916) 928-7470 or Ruth.Flores@wildlife.ca.gov.

Sincerely,

Joshua Morgan, Chief
License and Revenue Branch

cc: Mr. Michael Yaun
Fish and Game Commission
Sacramento, CA

Mr. Charles J. Williams

Ms. Ruth Flores
Department of Fish and Game
Sacramento, CA

State of California -The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd
Sacramento, CA 95834
http://www.wildlife.ca.gov

EDMUND G. BROWN JR, Governor
CHARLTON H. BONHAM, Director

Mr. Charles J. Williams
Fees Required for Reinstatement for a
Transferable Dungeness Crab Vessel Permit (TDCVP)
Permit Number CT0083-T4
Salmon Vessel Permit (SVP)
Permit Number SA0198
F/V Neva D (FG05064)

Prior Year Fees	**Permit Fees**
2016-2017 Commercial Boat Registration	$ 356.00
TDCVP	$ 287.00
SVP	$ 43.00
Late Fee (61 days to March 31, 2017)	$ 589.00
Late Fee (61 days to March 31, 2017)	$ 589.00
	1,864.00
Prior Year Fees Due	**$ 1,864.00**

Prior year permit fees must be paid before a 2017-2018 DCVP and SVP can be issued

Current Year Fees	
2017-2018 Commercial Boat Registration	$ 357.00
TDCVP	$ 287.75
Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 2,757.50
SVP	$ 43.00
Late Fee (61 days to March 31, 2017)	$ 590.50
Late Fee (61 days to March 31, 2017)	$ 590.50
Total Current Fees Due	**$ 4,626.25**
Total Fees Due	**$ 6,490.25**

If the Fish and Game Commission should recommend approval, full payment of $6,490.25 would be due.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Office of the General Counsel
P.O. Box 944209
Sacramento, CA 94244-2090
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

March 21, 2019

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Re: *In the Matter of Charles Williams*

Dear Commissioners:

This letter is in response to Charles Williams's request to appeal the Department of Fish and Wildlife's ("Department") denials of his request to renew his Transferable Dungeness Crab Vessel Permit, #CT0083-T4 ("TDCVP") and Salmon Vessel Permit, #SA0198 ("SVP"; collectively, the TDCVP and SVP shall be called "Permits"). His Permits were last valid during the 2015-16 fishing year. Mr. Williams submitted his appeal request to the Commission on March 16, 2018. The Department will not be participating in this appeal and accordingly, does not object to the renewal of his Permits for the 2019-2020 fishing year, provided that he pays all applicable fees.

The fees that Mr. Williams must pay to renew his Permits are described in Fish and Game Code, section 7852.2 ("Section 7852.2"), subdivision (a). Section 7852.2, subdivision (a) states:

> (a) In addition to the base fee for the license, stamp, permit, or other entitlement, the department shall assess a late fee for any renewal the application for which is received after the deadline, according to the following schedule:
> (1) One to 30 days after the deadline, a fee of one hundred twenty-five dollars ($125).
> (2) Thirty-one to 60 days after the deadline, a fee of two hundred fifty dollars ($250).
> (3) Sixty-one days or more after the deadline, a fee of five hundred dollars ($500).

To emphasize that these fees must be paid, Section 7852.2, subdivision (b) states that "The department shall not waive the applicable late fee," while subdivision (d) states "If the commission grants renewal, it shall assess the applicable late fee pursuant to subdivision (a)." The fees total **$11,006.23** and are described in the attached fee statement. The renewal might make Mr. Williams eligible to receive Dungeness crab disaster relief funds and salmon disaster relief funds, should any funds become available in the future.

If you have any questions please contact me at the address above or by telephone number (916) 651-7646, or e-mail at David.Kiene@wildlife.ca.gov.

Sincerely,

DAVID KIENE
Senior Staff Counsel

Cc: George Mavris
Attorney for Charles Williams

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Mr. Charles J. Williams
Fees Required for Reinstatement for a
Transferable Dungeness Crab Vessel Permit (TDCVP)
Permit Number CT0083-T4
Salmon Vessel Permit (SVP)
Permit Number SA0198
F/V *Neva D* (FG05064)

Prior Year Fees		**Permit Fees**
2016-2017	Commercial Boat Registration	$ 356.00
	TDCVP	$ 287.00
	SVP	$ 43.00
	Late Fee (61 days to March 31, 2017)	$ 589.00
	Late Fee (61 days to March 31, 2017)	$ 589.00
		1,864.00
2017-2018	Commercial Boat Registration	$ 357.00
	TDCVP	$ 287.75
	Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 2,757.50
	SVP	$ 43.00
	Late Fee (61 days to March 31, 2017)	$ 590.50
	Late Fee (61 days to March 31, 2017)	$ 590.50
		4,626.25
2018-2019	Commercial Boat Registration	$ 367.25
	Commercial Fishing Salmon Stamp	$ 87.55
	TDCVP	$ 296.00
	SVP	$ 44.29
		795.09
Prior Year Fees Due		**$ 7,285.34**

Prior year permit fees must be paid before a 2019-2020 DCVP and SVP can be issued

Current Year Fees		
2019-2020	Commercial Fishing License	$ 145.75
	Commercial Fishing Salmon Stamp	$ 87.55
	Commercial Boat Registration	$ 379.00
	TDCVP	$ 305.25
	Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 2,757.50
	SVP	$ 45.84
Total Current Fees Due		**$ 3,720.89**
Total Fees Due		**$ 11,006.23**

If the Fish and Game Commission should recommend approval, full payment of $11,006.23 would be due.

May 31, 20118

Fish and Game Commission
P.O. Box 944209
Sacramento, Ca 94244-2090

Ref: Notice of Denial for reinstatement of salmon vessel permit, permit number SAO295

Dear Commissioners:

I am requesting an appeal of my denial and further requesting that you grant the renewal of the SVP.

I went to the Monterey Fish and Game on April 28, 2017, to renew my license and permits and I was under the assumption that all of my permits were up to date for the 2018 fishing season. I was not aware there was a problem until I attempted to renew again in April of 2018.

The Sea Spirit has not activity fished since a very minimal season of 2016.

If the Commission grants my renewal I am willing to pay the applicable fees at that time.

Thank you for your consideration of my request.

Sincerely.

James Verboon

Carole Verboon

From: Carol & James Verboon
Sent: Monday, June 25, 2018 9:33 AM
To:
Cc:
Subject: note to salmon comm.

Dear Commisioners,

I am writing to follow up on a request for reinstatement scanned to you and mailed May 31, 2018. I have not heard back so I am checking back.
Encloed is a copy of the original letter.

James Verboon

JIM VERBOON

SANTA CLARITA CA 913
26 JUN 2008 PM 1

Ms. Ruth Flores
Ca. Dept of Fish & Wildlife
P.O. Box 944209
Sacramento Ca 94244-2090

94244$2090 B001

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Office of the General Counsel
P.O. Box 944209
Sacramento, CA 94244-2090
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

March 21, 2019

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Re: *In the Matter of James Verboon*

Dear Commissioners:

This letter is in response to James Verboon's request to appeal the Department of Fish and Wildlife's ("Department") denial of his request to renew his salmon vessel permit # SA0295 ("SVP"). Mr. Verboon submitted his appeal request to the Commission on May 31, 2018. His SVP was last valid during the 2016-17 fishing year. The Department will not be participating in this appeal and accordingly, does not object to the renewal of his SVP for the 2019-2020 fishing year, provided that he pays all applicable fees.

The fees that Mr. Verboon must pay to renew his SVP are described in Fish and Game Code, section 7852.2 ("Section 7852.2"), subdivision (a). Section 7852.2, subdivision (a) states:

> (a) In addition to the base fee for the license, stamp, permit, or other entitlement, the department shall assess a late fee for any renewal the application for which is received after the deadline, according to the following schedule:
> (1) One to 30 days after the deadline, a fee of one hundred twenty-five dollars ($125).
> (2) Thirty-one to 60 days after the deadline, a fee of two hundred fifty dollars ($250).
> (3) Sixty-one days or more after the deadline, a fee of five hundred dollars ($500).

To emphasize that these fees must be paid, Section 7852.2, subdivision (b) states that "The department shall not waive the applicable late fee," while subdivision (d) states "If the commission grants renewal, it shall assess the applicable late fee pursuant to subdivision (a)." The fees total **$2,441.09** and are described in the attached fee statement. The renewal might make Mr. Verboon eligible to receive salmon disaster relief funds, should any funds become available in the future.

If you have any questions please contact me at the address above or by telephone number (916) 651-7646, or e-mail at David.Kiene@wildlife.ca.gov.

Sincerely,

DAVID KIENE
Senior Staff Counsel
Cc: James Verboon

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Mr. James Verboon
Fees Required for Reinstatement for a
Salmon Vessel Permit (SVP)
Permit Number SA0295
F/V *Sea Spirit* (FG07247)

Prior Year Fees	**Permit Fees**
2017-2018 Commercial Boat Registration	$ 357.00
SVP	$ 43.00
Late Fee (61 days to March 31, 2018)	$ 590.50
2018-2019 Commercial Fishing License	$ 141.11
Commercial Fishing Salmon Stamp	$ 87.55
Commercial Boat Registration	$ 367.25
SVP	$ 44.29
Late Fee (one to 30 days)	$ 152.25
Prior Year Fees Due	**$ 1,782.95**

Prior year permit fees must be paid before a 2019-2020 SVP can be issued

Current Year Fees	
2019-2020 Commercial Fishing License	$ 145.75
Commercial Fishing Salmon Stamp	$ 87.55
Commercial Boat Registration	$ 379.00
SVP	$ 45.84
Total Current Fees Due	**$ 658.14**
Total Fees Due	**$ 2,441.09**

If the Fish and Game Commission should recommend approval, full payment of $2,441.09 would be due.

MATHEWS, KLUCK, WALSH & WYKLE, LLP

Attorneys At Law
100 M Street
Eureka, California 95501
Telephone: (707) 442-3758
Facsimile: (707) 442-0813

Francis B. Mathews (1923-2000)
Laurence A. Kluck
Kelly M. Walsh
Timothy J. Wykle
Neal G. Latt

Legal Assistants:
Linda Shaw
Susan May
Amber Kluck
Stephanie Deckard

July 3, 2018

Via Certified Mail, Return Receipt
& Via Email: fgc@fgc.ca.gov
California Fish & Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Re: Appeal of Notice of Denial for Reinstatement of Dungeness Crab Vessel Permit, Permit Number CN0034-T3
Our client: John A. Fraser
F/V Njord (FG00087)

Dear Commissioners:

I represent commercial fisherman John A. Fraser with respect to his appeal of the enclosed Notice of Denial for Reinstatement of Dungeness Crab Vessel Permit, Permit Number CN0034-T3 (the "Permit"). The Notice of Denial, dated June 19, 2018, communicates the Department's denial of Mr. Fraser's May 22, 2018 application to renew Dungeness Crab Vessel Permit No. CN0034-T3. The Department bases its denial on Cal. Fish & Game Code section 7852.2(c).

This appeal is timely submitted, and is made pursuant to the authority provided in Cal. Fish & Game Code section 7852.2(d): "An applicant who is denied renewal of a late application may submit a written appeal for renewal to the Commission within 60 days of the date of the Department's denial. The Commission, upon consideration of the appeal, may grant renewal. If the Commission grants renewal, it shall assess the applicable late fee pursuant to subdivision (a)."

By way of relevant background, the scope of the crab pot tier allocated to this Permit has been in question since at least November 16, 2013, when the Department filed a petition for a writ of administrative mandate seeking to set aside the October 30, 2013 administrative decision wherein Mr. Fraser's appeal to revise his tier assignment upward from Tier 7 to Tier 3 was granted (Office of Administrative Hearings, Case No. 13ALJ06; OAH No. 2013060402). This uncertainty continued for over four years, through no fault of Mr. Fraser's until February 16, 2018, when the hearing on the Department's petition for writ of mandate was finally heard by the

Superior Court, County of Sacramento. Following briefing and oral argument, the Superior Court ordered on March 7, 2018 that the Department's petition for Writ of Mandate be denied, thereby successfully preserving Mr. Fraser's permit tier at the Tier 3 level.

The Permit, according to Department records, was last valid during the 2014-2015 permit year.

Despite Mr. Fraser following the ordinary course and practice routinely and historically followed during several prior annual permit renewals, the Department failed to provide him with permit renewal applications for the calendar years in question (permit years 2015-2016, 2016-2017, and 2017-2018). During all applicable years prior to these years in question, Mr. Fraser's permit renewal application was always mailed to him by the Department's Sacramento office.

However, beginning in permit year 2015-2016, Mr. Fraser did not receive his permit renewal application by mail from the Department, as he was accustomed to. When he did not receive it, he telephoned the Department in Sacramento, on at least 4 different occasions, inquiring as to the whereabouts of his permit renewal application. He was told that it either had been or would be sent to him in the mail. He never received it. Mr. Fraser does not own a computer, and did not own one at that time, and if he had been directed to download an application from the Internet, which he was not, he would have been unable to do so anyway. Mr. Fraser did not fish in California for Dungeness crab commercially for the 2015-2016 season.

For permit year 2016 – 2017, Mr. Fraser's experience was similar to that for permit year 2015-2016. He never received a permit renewal application via mail, as had always been the case in prior years, excepting 2015-2016 when the Department failed to send him a permit renewal application at all.

Mr. Fraser telephoned the Department in Sacramento numerous times, with at least 2 of his telephone calls being disconnected by the Department before they were completed. Mr. Fraser was eventually able to leave a voicemail message with Ms. Ruth Flores with the Department, who later left Mr. Fraser a voicemail message, advising him that a permit renewal application would be mailed to him. Mr. Fraser never received one.

For permit year 2017-2018, similarly, Mr. Fraser did not receive a permit renewal application via the mail. Mr. Fraser then visited the Eureka CDFW office on April 25, 2018, seeking to purchase his permit renewal at that location. He was advised by Department personnel that they would only sell him a personal license and a boat registration, both of which were purchased at that time. Mr. Fraser was finally provided with a 2017-2018 permit renewal application following discussions with one or more Commissioners.

Mr. Fraser then requested the undersigned to contact the Department to assist him in renewing his permit, which the undersigned did, first by way of a phone conference with Commission Deputy Director Mellissa Miller Henson to clarify the procedure to be followed, and then by way of written request to the Department, dated May 22, 2018. A true and correct

copy of this May 22, 2018 correspondence along with all attachments included therein, is included herewith for your review.

The scope of the Permit has been unsettled since November 2013 due to the Departments' appeal of the tier, which was not finally resolved, in Mr. Fraser's favor, until March 7, 2018 (the Department did not seek a hearing on the merits of its' appeal until late 2017). Regardless, Mr. Fraser continued to timely apply for, and successfully obtain, the renewal of the Permit during every year when the Department provided him with an application to do so. However, during the permit years in question, the Department deviated from its' ordinary and customary practice and, despite repeated efforts by Mr. Fraser to obtain an application, the Department did not provide him with one. Mr. Fraser received confusing, ambiguous and conflicting information from the Department when he contacted it on multiple occasions attempting to renew the Permit.

Mr. Fraser has expended considerable time and resources in protecting the Permit and the correct Tier allocation (e.g. Tier 3). He has always intended to continue to fish in California waters under the Permit, and did so, even with the specter of the Department's lengthy appeal of Mr. Fraser's crab trap tier allocation. This continued until the Department failed to provide Mr. Fraser with the required applications to renew the Permit during permit years 2015-2016, 2016-2017, and 2017-2018 (where the application was ultimately provided following intervention by the undersigned, and timely submitted thereafter, and then summarily denied).

There was also confusion and misinformation surrounding the mechanism to follow to seek reinstatement of the Permit following Mr. Fraser's successful opposition of the Department's tier level appeal. Initially, the undersigned was advised by Department counsel that, following final resolution of its' appeal, Mr. Fraser would need to apply directly to the Fish & Game Commission for reinstatement of the Permit. Mr. Fraser attempted to do this until it was finally clarified by one or more Commissioners that he would need to apply to the Department first, and only if the Department denied permit renewal would he be able to appeal to the Commission, which was promptly and timely done.

When the Superior Court issued its' Ruling on the Department's appeal of Mr. Fraser's crab trap tier allocation, it specifically addressed the subject of mootness:

> "Fraser has not purchased a DC trap limit under Section 8276.5 and does not have a current valid license. However, the Court declines to dismiss the litigation as moot. "[I]f an action involves a matter of continuing public interest and the issue is likely to recur" (citation) of if "'there is a distinct possibility that the controversy between the parties may recur'" (citation) [a] court may decide an issue that would otherwise be dismissed as moot." (*In re Marriage of Olson (2015)* 238 Cal.App.4th 1458, 1463.) Both circumstances are present here.
>
> At oral argument, Fraser indicated that he intends to re-apply for his license and the DC trap limit entitlement. Likewise, DFW stated that it pursues this writ to

determine the appropriate DC tier allocation to which Fraser would be entitled. As the matter is of continuing public interest and there is a distinct possibility that the controversy between DFW and Fraser may recur, the Court will decide the Petition."

(See Order Denying Petition For Writ of Mandate, Exhibit A (Ruling on Submitted Matter and Order, Petition for Writ of Administrative Mandate, Section III.,p.3, attached).

It is submitted that good cause exists for the Commission to grant this appeal, and reinstate the permit for the F/V Njord. If the Commission desires any further information, analysis or testimony, please contact the undersigned.

Respectfully Submitted,

MATHEWS, KLUCK, WALSH & WYKLE, LLP

Timothy J. Wykle

Authorization for Appeal

I, John A. Fraser, authorize this appeal be made on my behalf.

John a. Fraser 7-3-18

John A. Fraser

TJW/ln
Enclosures
cc: Client
2213-1

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Certified Mail

June 19, 2018

Mr. Timothy J. Wykle
Mathews, Kluck, Walsh & Wykle, LLP
Attorneys At Law
100 M St.
Eureka, CA 95501

Subject: **NOTICE OF DENIAL FOR REINSTATEMENT OF DUNGENESS CRAB VESSEL PERMIT, PERMIT NUMBER CN0034-T3**

Dear Mr. Wykle:

This letter is in response to your client's, John A. Fraser, request to reinstate the Nontransferable Dungeness Crab Vessel Permit, Permit Number CN0034-T3 ("Permit"), for the F/V *Njord* (FG00087). Department of Fish and Wildlife ("Department") license records show that the Permit was last valid during the 2014-2015 permit year.

Authority-Dungeness Crab Vessel Permit
Pursuant to Fish and Game Code (FGC) Section 8280.2(e), applications for renewal of all Dungeness crab vessel permits shall be received by the Department, or, if mailed, postmarked, by April 30 of each year. In order for a vessel to retain eligibility, a permit shall be obtained each year subsequent to the initial permit year and the vessel shall be registered pursuant to Section 7881.

Authority-Late Renewal Applications
Under FGC Section 7852.2, a graduated late fee was established for any renewal application that is received after the deadline.

In addition, FGC Section 7852.2(b) states the Department shall not waive the applicable late fee. Pursuant to FGC Section 7852.2(c), the Department shall deny any application for renewal received after March 31 of the permit year following the year in which the applicant last held a valid permit for that fishery.

Department Findings
On May 24, 2018, the Department received a letter requesting that the Department reinstate Mr. Fraser's Tier 3 Permit. License records show that the F/V *Njord* held a valid 2014-2015 Permit, which made Mr. Fraser eligible to renew the permit for the 2015-2016 permit year.

Department Determination
Based on the previously stated information, Mr. Fraser's request to reinstate the Permit for the F/V *Njord* is denied, because the F/V *Njord* last held a valid Permit in the 2014-2015 permit year. The Department received the request to renew the Permit on May 24, 2018. FCG Section 7852.2(c) states that the Department shall deny any application for renewal received after March 31 of the permit year following the year in which the applicant last held a valid permit for that fishery.

Deadline to File an Appeal to the Fish and Game Commission
If you wish to appeal the Department's decision, you must submit a written request to the Fish and Game Commission ("Commission") at P.O. Box 944209, Sacramento, CA 94244-2090, or you can request an appeal by emailing the Commission at fgc@fgc.ca.gov. Pursuant to FGC Section 7852.2(d), your appeal must be received within 60 days of the date of this letter. The Commission, upon consideration of the appeal, may grant the renewal of the Permit. If the Commission grants the renewal, it shall assess the applicable late fee.

Postmarked 8/18/18 (Saturday)

The Commission will review the information you submit and will notify you in writing if your appeal will be scheduled before the Office of Administrative Hearings. If the Commission should recommend approval, full payment of $10,367.22 would be due. A fee schedule is enclosed.

If you have any questions or require further assistance, please contact Ms. Ruth Flores at (916) 928-7470 or Ruth.Flores@wildlife.ca.gov.

Sincerely,

Joshua Morgan, Chief
License and Revenue Branch

cc: Mr. Michael Yaun
Fish and Game Commission
Sacramento, CA

Mr. John A. Fraser

Ms. Ruth Flores
California Department of Fish and Wildlife
Sacramento, CA

State of California – Natural Resources Agency
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www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Mr. John A. Fraser
Fees Required for a
Nontransferable Dungeness Crab Vessel Permit (NDCVP)
Permit Number CN0034-T3
F/V Njord (FG00087)

Prior Year Fees		**Permit Fees**
2015-2016	NDCVP	$ 287.00
	Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 3,007.50
	Late Fee (61 days to March 31, 2016)	$ 589.00
		3,883.50
2016-2017	Commercial Fishing License	$ 136.73
	Commercial Boat Registration	$ 356.00
	NDCVP	$ 287.00
	Late Fee (61 days to March 31, 2017)	$ 589.00
		1,368.73
2017-2018	Commercial Fishing License	$ 136.99
	Commercial Boat Registration	$ 357.00
	NDCVP	$ 287.75
	Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 3,007.50
	Late Fee (61 days to March 31, 2018)	$ 590.50
		$ 4,379.74
Prior Year Fees Due		**$ 9,631.97**
Current Year Fees		
2018-2019	NDCVP	$ 583.00
	Late Fee (1 to 30 days)	$ 152.25
Total Current Fees Due		**$ 735.25**
Total Fees Due		**$ 10,367.22**

If the Fish and Game Commission should recommend approval, full payment of $10,367.22 would be due.

COPY

MATHEWS, KLUCK, WALSH & WYKLE, LLP

Attorneys At Law
100 M Street
Eureka, California 95501
Telephone: (707) 442-3758
Facsimile: (707) 442-0813

Francis B. Mathews (1923-2000)
Laurence A. Kluck
Kelly M. Walsh
Timothy J. Wykle
Neal G. Latt

Legal Assistants:
Linda Shaw
Susan May
Amber Kluck
Stephanie Deckard

May 22, 2018

California Department of Fish & Wildlife
License Sales Office
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834

Re: Non-Resident Dungeness Crab Vessel Permit; Tier 3
Fishing Vessel: Njord; Vessel No. FG00087; Permit CN0034-T7
Vessel Owner: John A. Fraser; Commercial Fishing ID

To Whom It May Concern:

This office represents commercial fisherman John A. Fraser. During or about 2013, the Fish & Game Commission revised Mr. Fraser's Dungeness crab trap tag allocation downward to Tier 7. Mr. Fraser successfully appealed that action before the Office of Administrative Hearings, Case No. 13ALJ06; OAH No. 2013060402. By way of Order issued October 30, 2013, Mr. Fraser's appeal to revise his tier assignment upward was granted to Tier 3.

On November 26, 2013, the California Department of Fish & Wildlife filed a Petition for a Writ of Administrative Mandate, seeking to set aside the October 30, 2013 administrative decision. The matter did not come on for hearing until February 16, 2018, in Department 27 of the Superior Court for the State of California, County of Sacramento. The Superior Court ultimately ordered that the Department's Petition is denied, thereby preserving Mr. Fraser's commercial Dungeness crab trap allocation at the Tier 3 level.

True and correct copies of the October 30, 2013 Administrative Decision and the March 7, 2018 Order denying the Department's Petition for Writ of Mandate are included herewith.

Now that Mr. Fraser's proper Tier designation has been confirmed, Mr. Fraser was directed to submit the application and supporting materials included herein in order have his limited entry permit reinstated, at Tier 3.

Accordingly, enclosed herein please find the following additional documentation:

1. 2018-2019 Boat Registration Worksheet;
2. Copy of current Oregon State Driver's License of John A. Fraser;
3. Department of Homeland Security/United States Coast Guard Certificate of Documentation Re: Fishing Vessel Njord, issued April 19, 2018, expiration May 31, 2019; and
4. Receipt from Department of Fish & Wildlife evidencing current commercial fishing license held by John A. Fraser and evidencing current commercial boat registration Re: Fishing Vessel Njord.

Please process the foregoing in a timely manner. If additional fees are required to be paid, please advise as to the nature and amount of same. Please copy all correspondence to Mr. Fraser to the undersigned, until further notice.

Thank you for your anticipated courtesy and cooperation. If you have any questions or would like further clarification on any of the issues discussed herein, please contact me.

Sincerely,

MATHEWS, KLUCK, WALSH & WYKLE, LLP

Timothy J. Wykle

TJW/ln
Enclosures
cc: Client (w/ Enclosures)
2213-1

State of California – Department of Fish and Wildlife
2018-2019 COMMERCIAL BOAT REGISTRATION WORKSHEET
DFW 1309 (REV. 02/09/18)
You can now renew online at wildlife.ca.gov/Licensing/Online-Sales or at select license agents.
Licenses purchased online, or at select license agents, will include a 5% non-refundable license agent handling fee.

CHECK ONE: ☐ **NEW** ☒ **RENEWAL**
SEE INSTRUCTIONS ON REVERSE. PRINT CLEARLY. **GO ID NUMBER**

F&G BOAT#	BOAT NAME	DATE PURCHASED	YEAR BUILT	DOC# CF# STATE#	HULL#
000997	WJORD	~~APPROX~~ 1976	47	543502422416	WOOD

LENGTH	DEPTH	BREADTH	NET TONNAGE	GROSS TONNAGE	HORSEPOWER	HOMEPORT
41	7.3	12.2	9 NRT	19 GRT	165	BROOKINGS

VESSEL OWNER'S FIRST NAME	M.I.	LAST NAME	COMMERCIAL FISHING ID#
JOHN	A.	FRASER	

BUSINESS NAME (FOR BUSINESS OWNED VESSELS)			DAY TELEPHONE
MAILING ADDRESS	**CITY**	**STATE**	**ZIP CODE**
PHYSICAL ADDRESS (DO NOT USE PO BOX)	**CITY**	**STATE**	**ZIP CODE**

Fees include a nonrefundable three percent (3%) application fee, not to exceed $7.50 per item. (Section 700.4, Title 14, California Code of Regulations)

COMMERCIAL BOAT REGISTRATION

☐	Resident Commercial Boat Registration	$ 367.25 =	
☐	Nonresident Commercial Boat Registration	$ 1,087.00 =	

LIMITED ENTRY PERMITS (issued only to pre-qualified commercial fishermen or vessel owners)

☐	California Halibut Bottom Trawl Vessel Permit (Includes $7.50 application fee)	$ 64.12 =	
☐	Commercial Salmon Vessel Permit	$ 44.29 =	
☐	"John Doe" Commercial Fishing Salmon Stamp	$ 87.55 =	
☐	Dungeness Crab Vessel Permit (Resident)	$ 296.00 =	
☒	Dungeness Crab Vessel Permit (Nonresident)	$ 583.00 =	$ 583.00
☐	Market Squid Vessel (Transferable)	$ 2,844.75 =	
☐	Market Squid Vessel (Nontransferable)	$ 1,426.25 =	
☐	Market Squid Brail (Transferable)	$ 2,844.75 =	
☐	Market Squid Light Boat (Transferable)	$ 858.50 =	
☐	Market Squid Light Boat (Nontransferable)	$ 56.39 =	
☐	Northern Pink Shrimp Trawl Vessel (Transferable)	$ 1,447.25 =	
☐	Northern Pink Shrimp Trawl Vessel (Nontransferable)	$ 727.75 =	
☐	Spot Prawn Trap Vessel – Tier 1	$ 367.25 =	
☐	Spot Prawn Trap Vessel – Tier 2	$ 367.25 =	
☐	Spot Prawn Trap Vessel – Tier 3	$ 1,447.25 =	

Permit late fees are not subject to the nonrefundable three percent (3%) application fee.

☐	Permit Late Fee (May 1, 2018 through May 30, 2018)*	x	$ 152.25 =	
☒	Permit Late Fee (May 31, 2018 through June 29, 2018)*	1 x	$ 303.50 =	$ 303.50
☐	Permit Late Fee (June 30, 2018 through March 31, 2019)*	x	$ 607.75 =	

PERMIT DEADLINE FOR LIMITED ENTRY COMMERCIAL FISHING PERMITS

* Applications must be received with the permit fee at a California Department of Fish and Wildlife (Department) office or, if mailed, postmarked on or before April 30, 2018, for the above listed limited entry commercial fishing permits. Renewals received or postmarked after April 30, 2018, must be accompanied with permit fee and late fee. (Fish and Game Code Section 7852.2(c))

NONRESTRICTIVE VESSEL PERMITS AND STAMPS (Nonrestrictive Vessel Permit and Stamps are not subject to Permit Late Fees)

☐	Commercial Fishing Salmon Stamp**	$ 87.55 =	
☐	Commercial Passenger Fishing Vessel License (CPFV)**	$ 367.25 =	
☐	Commercial Ocean Enhancement Stamp - CPFV**	$ 52.27 =	
☐	Coonstripe Shrimp Trap Vessel Permit**	$ 110.98 =	
☐	Tanner Crab Trap Vessel Permit**	$ 13,510.75 =	
	****CAN BE PURCHASED AT ANY TIME**	**Total Fee Due**	$ 886.50

Indicate type of payment:
*Make checks or money orders payable to **California Department of Fish and Wildlife or CDFW**
(DO NOT SEND CASH)

TOTAL: $ 886.50

I authorize CDFW to charge the agreed amount listed above to my credit card provided herein. I agree that I will pay for this purchase in accordance with the issuing bank cardholder agreement.

PRINT NAME:	SIGNATURE:	DATE:
CLAYTON J. NETZEL JR		5/18/2018

CLASS: C - Any single vehicle with a GVWR of not more than 26,000 pounds with the proper endorsements. Any emergency vehicle operated by a firefighter.

DHS, USCG, CG-1270 (REV. 06-04)

OMB APPROVED
1625-0027

UNITED STATES OF AMERICA

DEPARTMENT OF HOMELAND SECURITY
UNITED STATES COAST GUARD

NATIONAL VESSEL DOCUMENTATION CENTER

CERTIFICATE OF DOCUMENTATION

VESSEL NAME	OFFICIAL NUMBER	IMO OR OTHER NUMBER	YEAR COMPLETED
NJORD	252232	NONE	1947

HAILING PORT	HULL MATERIAL	MECHANICAL PROPULSION
BROOKINGS OR	WOOD	YES

GROSS TONNAGE	NET TONNAGE	LENGTH	BREADTH	DEPTH
19 GRT	9 NRT	37.0	12.2	7.3

PLACE BUILT

WEST LINN OR

OWNERS	OPERATIONAL ENDORSEMENTS
JOHN A FRASER DANIEL R FRASER	FISHERY

MANAGING OWNER

JOHN A FRASER

RESTRICTIONS

NONE

ENTITLEMENTS

NONE

REMARKS

NONE

ISSUE DATE

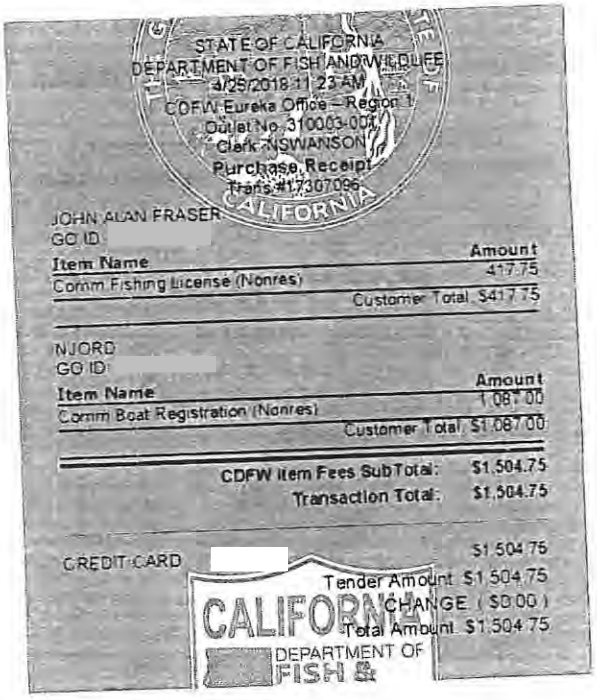
APRIL 19, 2018

THIS CERTIFICATE EXPIRES

MAY 31, 2019

Christina H. Walker

DIRECTOR, NATIONAL VESSEL DOCUMENTATION CENTER



STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE
4/25/2018 11:23 AM
CDFW Eureka Office – Region 1
Outlet No. 310003-004
Clerk: NSWANSON
Purchase Receipt
Trans #17307096

JOHN ALAN FRASER
GO ID: [redacted]

Item Name	Amount
Comm Fishing License (Nonres)	417.75
Customer Total	$417.75

NJORD
GO ID: [redacted]

Item Name	Amount
Comm Boat Registration (Nonres)	1,087.00
Customer Total	$1,087.00

CDFW Item Fees SubTotal:	$1,504.75
Transaction Total:	$1,504.75

CREDIT CARD [redacted] $1,504.75
Tender Amount $1,504.75
CHANGE ($0.00)
Total Amount $1,504.75

CALIFORNIA DEPARTMENT OF FISH &

Timothy J. Wykle, SBN 216943
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100 M Street
Eureka, California 95501
Telephone (707) 442-3758
Facsimile (707) 442-0813

Attorneys for Real Party in Interest
JOHN A. FRASER

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SACRAMENTO

CHARLTON H. BONHAM, IN HIS OFFICIAL CAPACITY AS DIRECTOR OF THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE,

Petitioner,

vs.

LINDA CABATIC, IN HER OFFICIAL CAPACITY AS DIRECTOR OF THE OFFICE OF ADMINISTRATIVE HEARINGS; FRED KLASS, IN HIS OFFICIAL CAPACITY AS DIRECTOR OF THE CALIFORNIA DEPARTMENT OF GENERAL SERVICES; AND DOES 1-10, INCLUSIVE,

Respondents,

JOHN A. FRASER

Real Party in Interest.

Case No.: 34-2013-80001695

NOTICE OF ENTRY OF ORDER

TO ALL PARTIES AND THEIR RESPECTIVE ATTORNEYS OF RECORD THEREIN:

PLEASE TAKE NOTICE that on March 5, 2018, Petitioner's Petition for Writ of Administrative Mandate was DENIED by the Sacramento County Superior Court. A true and correct copy of this Order is attached hereto as **EXHIBIT A.**

Dated: 3-22-18

MATHEWS, KLUCK, WALSH & WYKLE, LLP

By: _____
Timothy J. Wykle, Attorneys for Real Party in Interest, JOHN A. FRASER

Exhibit A

Timothy J. Wykle, SBN 216943
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Telephone (707) 442-3758
Facsimile (707) 442-0813

Attorneys for Real Party in Interest
JOHN A. FRASER

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SACRAMENTO

CHARLTON H. BONHAM, IN HIS OFFICIAL CAPACITY AS DIRECTOR OF THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE,

Petitioner,

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Respondents,

JOHN A. FRASER

Real Party in Interest.

Case No.: 34-2013-80001695

[PROPOSED] ORDER DENYING PETITION FOR WRIT OF MANDATE

Hearing date: February 16, 2018
Time: 11:00 a.m.
Dept. 27
Judge: Hon. Steven M. Gevercer
Action Filed: November 26, 2013

The Petition for Writ of Administrative Mandate filed on November 26, 2013 by Charlton H. Bonham (in his official capacity as Director of the California Department of Fish

and Wildlife) came on for hearing at 11:00 a.m. on February 16, 2018, in Department 27 of this Court, before the Honorable Steven M. Gevercer. Allison Goldsmith appeared on behalf of Petitioner Charlton H. Bonham, in his Official Capacity as Director of the California Department of Fish and Wildlife. Timothy J. Wykle appeared on behalf of Real Party in Interest, John A. Fraser. Respondents Linda Cabatic, in her Official Capacity as Director of the Office of Administrative Hearings and Fred Klass, in his Official Capacity as Director of the California Department of General Services, did not appear.

Having considered the memorandum and supporting documents, and having heard oral argument of counsel, the Court orders that the Petition is **DENIED** for the reasons set forth in the Court's ruling, attached hereto as **Exhibit A**.

IT IS THEREFORE ORDERED that the Writ is **DENIED**.

Approved as to form:

ATTORNEY GENERAL OF CALIFORNIA

Dated: Feb. 27, 2018

Allison Goldsmith, Deputy Attorney General
Attorneys for Petitioner – Department of Fish & Wildlife

OFFICE OF ADMINISTRATIVE SERVICES

Dated: _____

Alicia Boomer – Staff Counsel
Attorneys for Defendants – Office of Administrative Hearings & Department of General Services

IT IS SO ORDERED

Dated: _____

JUDGE OF THE SUPERIOR COURT

and Wildlife) came on for hearing at 11:00 a.m. on February 16, 2018, in Department 27 of this Court, before the Honorable Steven M. Gevercer. Allison Goldsmith appeared on behalf of Petitioner Charlton H. Bonham, in his Official Capacity as Director of the California Department of Fish and Wildlife. Timothy J. Wykle appeared on behalf of Real Party in Interest, John A. Fraser. Respondents Linda Cabatic, in her Official Capacity as Director of the Office of Administrative Hearings and Fred Klass, in his Official Capacity as Director of the California Department of General Services, did not appear.

Having considered the memorandum and supporting documents, and having heard oral argument of counsel, the Court orders that the Petition is **DENIED** for the reasons set forth in the Court's ruling, attached hereto as **Exhibit A.**

IT IS THEREFORE ORDERED that the Writ is **DENIED.**

Approved as to form:

~~ATTORNEY GENERAL OF CALIFORNIA~~

Dated: _____

Allison Goldsmith, Deputy Attorney General
Attorneys for Petitioner – Department of Fish & Wildlife

OFFICE OF ADMINISTRATIVE SERVICES

Dated: 2/27/18

Alicia Boomer – Staff Counsel
Attorneys for Defendants – Office of Administrative Hearings & Department of General Services

IT IS SO ORDERED

Dated: 3/7/18

JUDGE OF THE SUPERIOR COURT

EXHIBIT A

SUPERIOR COURT OF CALIFORNIA

COUNTY OF SACRAMENTO

DATE: JUDGE:	February 22, 2018 HON. STEVEN M. GEVERCER	DEPT. NO.: CLERK:	27 F. TEMMERMAN
CHARLTON H. BONHAM, IN HIS OFFICIAL CAPACITY AS DIRECTOR OF THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, Petitioner, v. OFFICE OF ADMINISTRATIVE HEARINGS, Respondent.		Case No.: 34-2013-80001695	
JOHN A. FRASER, Real Party in Interest.			
Nature of Proceedings:	RULING ON SUBMITTED MATTER AND ORDER: PETITION FOR WRIT OF ADMINISTRATIVE MANDATE		

I. RULING ON SUBMITTED MATTER AND ORDER.

The Court issued an order on February 15, 2018 (1) directing the parties to appear for oral argument, and (2) tentatively denying the Petition for writ of mandate (Petition). The parties appeared for oral argument on February 16, 2018, and were represented by counsel as stated in the record. At the conclusion of oral argument, the Court took the matter under submission. The Court affirms its tentative ruling, as set forth below.

Petitioner seeks a writ of mandate directing Respondent Office of Administrative Hearings to set aside its decision determining that Real Party in Interest John Fraser (Fraser) is entitled to an upward adjustment of his Dungeness Crab (DC) trap allocation. The Petition is **DENIED**.

II. BACKGROUND.

In 2011, the Legislature directed the Department of Fish and Wildlife (DFW) to administer a DC trap limit program for commercial fishing. This program is set forth in

Fish and Game Code[1] section 8276.5. That statute establishes a seven-tier DC trap allocation schedule. DFW assigns permitees to one of the seven tiers, limiting permitees to between 175 and 500 DC traps. DFW assigns a permitee to a specific tier based on the historical number of pounds of DC caught and delivered or "landed" in California between November 15, 2003 and July 15, 2008. (Fish & G. Code, § 8276.5(a)(1).)

Fraser is a commercial fisherman who lives "yards" away from the California border in Brookings, Oregon. (AR, 220-221.) Fraser has commercially fished for approximately 40 years, and began fishing with his father when he was seven years old. (AR, 202.) After suffering severe health issues, Fraser's father retired and transferred the commercial fishing business, and the fishing vessel, the Njord, to Fraser. (AR, 32, 154, 224, 234.)

In 1995, DFW issued the Njord a Non-Resident DC Vessel Permit, or "Section 7891 Permit." This permitted Fraser's father, then captain of the Njord, to fish for DC in California waters. After Fraser's father retired, DFW eventually transferred this Section 7891 permit to Fraser and his fishing vessel, the Njord.[2] When Fraser is no longer able to use the Section 7891 Permit, or the Njord becomes inoperative, the permit will expire. (AR, 205.) Additionally, the Section 7891 Permit is non-transferrable. (Ibid.)

Fraser fishes for DC in California and Oregon. However, Fraser lands his catch in Brookings, Oregon, rather than the next closest port in Crescent City, California.[3] Fraser lands his catch in Brookings, Oregon because (1) the DC fishing grounds in California are several hours closer to his home than the DC fishing grounds in Oregon; (2) the closest port to his home is in Brookings, Oregon, rather than Crescent City, California, and (3) Fraser receives a higher price for DC in Oregon than in California. (AR, 221-222, 229.)

In 2013, DFW implemented SB 369, which was enacted in 2011. Pursuant to Section 8276.5 (a)(1), DFW assigned Fraser a "Tier 7" DC trap allocation because Fraser made zero landings of DC in California between November 15, 2003 and July 15, 2008. Tier 7 is the lowest allocation level and limits Fraser to a maximum allocation of 175 DC trap tags.

Fraser testified at the administrative hearing that an allocation to Tier 7 would prevent him from paying his bills and cause him to "go under." (AR, 252.) Fraser testified that during the pertinent time period he used approximately 450 crab traps per year. (AR, 253.)

Fraser appealed DFW's tier allocation decision to Respondent, the Office of Administrative Hearings. At the administrative hearing, Fraser argued that he was entitled to an upward adjustment of the DC trap tag allocation because DFW

---

[1] Unless otherwise specified, all statutory references are to the Fish and Game Code.

[2] DFW initially denied Fraser's application to transfer this permit, which Fraser successfully challenged in another administrative appeal.

[3] Crescent City, California is approximately 26 miles from Brookings, Oregon.

underestimated his landings history by considering only California landings (none), and not the landings made in Brookings, Oregon.

The Administrative Law Judge (ALJ) hearing the matter for Respondent Office of Administrative Hearings granted Fraser's appeal. The ALJ agreed that Fraser presented evidence of "unusual circumstances" constituting an "unfair hardship," which entitled him to an upward DC tier allocation, pursuant to Section 8276.5(8)(a). The ALJ issued a decision, dated October 13, 2013, revising Fraser's allocation from Tier 7 upward to Tier 3 (400 trap tags). (AR, 153-164.)

Petitioner DFW filed the Petition in November 2013. The parties unsuccessfully attempted to settle the litigation.
DFW did not seek a hearing on the merits of this case until late 2017. The parties have briefed the matter and lodged an administrative record. The Court now addresses the merits of the Petition.

III. DISCUSSION.

a. Mootness.

Fraser has not purchased a DC trap limit under Section 8276.5 and does not have a current valid license. However, the Court declines to dismiss the litigation as moot. "[I]f an action involves a matter of continuing public interest and the issue is likely to recur" (citation) or if "'there is a distinct possibility that the controversy between the parties may recur'" (citation) ... [a] court may decide an issue that would otherwise be dismissed as moot." (*In re Marriage of Olson* (2015) 238 Cal.App.4th 1458, 1463.) Both circumstances are present here.

At oral argument, Fraser indicated that he intends to re-apply for his license and the DC trap limit entitlement. Likewise, DFW stated that it pursues this writ to determine the appropriate DC tier allocation to which Fraser would be entitled. As the matter is of continuing public interest and there is a distinct possibility that the controversy between DFW and Fraser may recur, the Court will decide the Petition.

b. Standard of Review.

The Court reviews Respondent's decision pursuant to Code of Civil Procedure section 1094.5. In such cases, the Court's review extends to whether Respondent "has proceeded without, or in excess of, jurisdiction; whether there was a fair trial; and whether there was any prejudicial abuse of discretion." (Code Civ. Proc., § 1094.5(b).)

DFW contends that Respondent or the ALJ abused her discretion. "Abuse of discretion is established if the respondent has not proceeded in the manner required by law, the order or decision is not supported by the findings, or the findings are not supported by the evidence." (*Ibid.*) As the party attacking the administrative decision, Petitioner bears the

burden of demonstrating an abuse of discretion. (*Foster v. Civil Service Comm'n* (1983) 142 Cal.App.3d 447, 453.)

In this case, the pertinent facts are undisputed and Respondent's decision rested upon the interpretation of Section 8276.5, and whether it applied to Fraser. This is a question of law that the Court reviews *de novo*. (*Sacks v. City of Oakland* (2010) 190 Cal.App.4th 1070, 1082.)

c. Respondent Did Not Abuse its Discretion in Finding that Fraser Was Entitled to An Upward Tier Allocation Adjustment.

Respondent found that Fraser was entitled to an upward tier allocation adjustment pursuant to Section 8276.5(a)(8)(A). This is because Fraser presented substantial evidence that "unusual circumstances" constituting an "unfair hardship," reduced his landings. Section 8276.5 governs the DC tier allocation schedule administered by DFW, and provides in pertinent part:

> (a) In consultation with the Dungeness crab task force...the [DFW] director shall adopt a program, by March 31, 2013, for Dungeness crab trap limits for all California permits....
>
> (1) The program shall contain seven tiers of Dungeness crab trap limits based on California landings receipts under California permits between November 15, 2003, and July 15, 2008, as follows:
>
> ....
>
> (8)
>
> (A) Any Dungeness crab permitholder may submit to the director an appeal of a trap tag allocation received pursuant to this section, by March 31, 2014, on a permit-by-permit basis for the purpose of revising upward or downward any trap tag allocation. *Any appeal to revise upward a trap tag allocation shall be based on evidence that a permit's California landings during the period between November 15, 2003, and July 15, 2008, inclusive, were reduced as a result of unusual circumstances and that these circumstances constitute an unfair hardship, taking into account the overall California landings history* as indicated by landing receipts associated with the permit.... [emphasis added.]

Preliminarily, the Court agrees with Respondent's findings that two other factors reduced Fraser's landings during the pertinent time period, as a result of unusual circumstances constituting an unfair hardship.

First, the administrative record is replete with evidence that Fraser's father, former captain of the Njord, suffered a severe decline in health, and other health issues, that decreased DC landings. (See AR, 31.) Second, the administrative record establishes that Fraser could not catch DC crab for several years because DFW failed to transfer the Section 7891 Permit to Fraser. Specifically, DFW would not transfer the permit to Fraser after he purchased the Njord from his father, and Fraser successfully appealed DFWs decision. (See AR, 32.)

DFW argues that these factors are irrelevant. This is because although these factors decreased Fraser's landings, they did not decrease Fraser's *California landings,* as Fraser's practice was to land in Brookings, Oregon, rather than California.

DFW argues that Fraser's practice to land in Brookings, Oregon was not an "unusual circumstance constituting an unfair hardship" for the purposes of Fraser's administrative appeal of DFW's DC trap allocation decision. Stated another way, DFW contends that any revision to the DC tier allocation must be based only on California landings.

Thus, in determining whether Respondent abused its discretion, the issue is whether Section 8276.5 subdivision (a)(8)(A) requires Respondent to rely exclusively upon California landings for the purposes of determining whether unusual circumstances exist constituting an unfair hardship. The Court finds that it does not.

In construing a statute, the court's fundamental task is to ascertain the intent of the Legislature. (*Guillemin v. Stein* (2002) 104 Cal.App.4th 156, 164.) To determine intent, courts must first examine the statute's words, "because they are generally the most reliable indicator of intent." (*Wirth v. California* (2006) 142 Cal.App.4th 131, 139.)

If the statute's language is clear and unambiguous, no construction is necessary and the court need not resort to other indicia of intent. (*Wirth v. California, supra,* 142 Cal.App.4th at p. 139.) If the language is ambiguous, however, the court may use extrinsic construction aids, such as legislative history, and must adopt the construction that harmonizes the statute internally and with related statutes. (*Ibid.*)

"[A]n individual statute must be construed in the context of the comprehensive statutory scheme of which it is a part. Statutes or statutory sections relating to the same subject must be harmonized, both internally and with each other, to the extent possible. Where uncertainty exists,... courts must construe provisions in a reasonable, common sense fashion taking into consideration the practical consequences that will flow from a particular interpretation." (*Wirth v. California, supra,* 142 Cal.App.4th at p. 139.)

1. Section 8276.5 Did Not Preclude Respondent from Considering Fraser's Landings in Brookings, Oregon.

DFW argues that the plain language of Section 8276.5 requires that the DC tier allocation be based only on California landings. The Court disagrees.

Section 8276.5(a)(1) bases the DFW's tier allocation decision on California landings. But Subdivsion (a)(1) is not dispositive to the issue presented here. Subdivision (a)(8)(A) allows a permitee to appeal DFW's tier allocation determination. This subdivision is plainly remedial in nature. Notably, the Legislature elected to not use the identical language found in Subdivision (a)(1) when crafting the remedial language of subdivision (a)(8)(A). In other words, the California landings data from the qualifying period is not the exclusive metric. Specifically, the permitee may appeal and request an upward revision of the DC trap application if he or she presents evidence that the permitee's California landings were reduced during the pertinent period as a result of unusual circumstances constituting an unfair hardship. A review shall "take into account the overall California landing history." (Fish & G. Code, § 8276.5(a)(8)(A).) The ALJ did just that.

Here, there is substantial evidence in the record that "unusual circumstances constituting an unfair hardship" reduced Fraser's landings.

First, there is substantial evidence in the record of "unusual circumstances." Fraser lives "yards" away from the California border, and thus, has the choice to land his catch in the closer port of Brookings, Oregon, rather than the port in Crescent City, California. These unusual circumstances would apply to a California resident who lived yards from the Oregon border, and faced the same choice as Fraser: land the catch in the closer port of Brookings, Oregon, or land farther away in Crescent City, California.

Second, there is substantial evidence in the record that Fraser's unusual circumstance constitutes an "unfair hardship."

Fraser's choice to land in Brookings, Oregon was rational for two reasons: (1) that port is closer to his home, and (2) he received a higher price for his catch there. In this way Fraser's choice differs from the purely monetary choice of a commercial fisher who lives hours away in another state or country, comes to fish in California, and lands the catch in another state or country. Rather, Fraser's choice to land in Brookings, Oregon is akin to the choice faced by a California resident on the other side of the California-Oregon border. Additionally, Fraser's choice to fish for DC in California waters was rational. The DC fishing grounds in California were several hours closer to his home.

DFW argues that Fraser's choice to fish in California waters and land in Brookings Oregon, was not "unusual circumstances constituting an unfair hardship," because it was just a choice. However, Fraser's choice to land in Brookings, Oregon during the pertinent time period was rational, and that choice penalized him under the new law—Section 8276.5. Because he made no California landings during the pertinent time period, DFW allocated him to the lowest DC tier. This change based on Fraser's past conduct is manifestly unfair.

Finally, DFW's interpretation of Section 8276.5, subdivision (a)(8)(A) could result in harsher and inequitable treatment (Tier 7) for persons who suffered the greatest hardship

(causing no California landings between November 15, 2003 and July 15, 2008) than for those who suffered a lesser degree of hardship.

Thus, the ALJ did not abuse her discretion by finding "unusual circumstances constituting an unfair hardship" and granting Fraser's administrative appeal.

2. Petitioner has Not Shown an Abuse of Discretion under Other Provisions of California Law.

DFW also argues that "California Law," specifically Section 7857(f), bases permits, licenses, or entitlements (such as the DC tier allocation) on California landings. Thus, DFW contends that this law establishes that the ALJ abused her discretion by not considering only California landings. DFW has shown no abuse of discretion here.

The law cited by DFW for this proposition, Section 7857(f), does not state that permits, licenses, or entitlements are based on California landings.

Section 7857 governs conditions applicable to a commercial license, permit, or entitlement. Among other things, it requires that the holder of the license, permit, or entitlement have a valid commercial fishing license, be present when fish are caught, and possess the license, permit, or entitlement at the time of the catch. It provides that "[a]ny landing of fish used to qualify for, or renew, a commercial fishing license, permit, or other entitlement shall be reported on landing receipts delivered to the department pursuant to Section 8046." (Fish & G. Code, § 7857(f).) Thus, Section 7857(f) does not state that permits, licenses or entitlements are based on California landings.

Similarly, Section 8046, referenced by Section 7857(f), does not discuss California landings. Section 8046 requires that the commercial fisher deliver landing receipts made under Sections 8043 or 8043.1 to DFW on or before the 16th or last day of the month in which the fish were landed. (Fish & G. Code, § 8046(a).) Section 8043 requires commercial fishers to make a landing receipt on a form furnished by DFW, which contains specific information. (Section 8043.1 applies to marine aquaria receivers and is not applicable here.)

Section 7857 or the other referenced statutes simply do not require that permits, licenses or entitlements may *only* be based on California landings. Accordingly, these statutes do not show that Respondent abused its discretion by considering landings made in Brookings, Oregon for purposes of the DC tier allocation.

IV. DISPOSITION.

The Petition is **DENIED**. Counsel for Real Party in Interest Fraser is directed to prepare a formal order incorporating this ruling as an exhibit thereto, and a separate judgment; submit them to the parties for approval as to form; and thereafter submit them to the Court for signature in accordance with Rule of Court 3.1312.

Dated: February 23, 2018

Hon. Steven M. Gevercer
California Superior Court Judge
County of Sacramento

CERTIFICATE OF SERVICE BY MAILING
(C.C.P. Sec. 1013a(4))

I, the Clerk of the Superior Court of California, County of Sacramento, certify that I am not a party to this cause, and on the date shown below I served the foregoing RULING ON SUBMITTED MATTER by depositing true copies thereof, enclosed in separate, sealed envelopes with the postage fully prepaid, in the United States Mail at Sacramento, California, each of which envelopes was addressed respectively to the persons and addresses shown below:

ALLISON GOLDSMITH
DEPUTY ATTORNEY GENERAL
P.O. BOX 944255
SACRAMENTO, CA 94244

ALICIA BOOMER
OFFICE OF ADMINISTRATIVE HEARINGS
2349 GATEWAY OAKS DRIVE, STE. 200
SACRAMENTO, CA 95833

TIMOTHY J. WYKLE
MATHEWS, KLUCK, WALSH & WYKLE, LLP
100 M STREET
EUREKA, CA 95501

I, the undersigned deputy clerk, declare under penalty of perjury that the foregoing is true and correct.

Dated: February 23, 2018

Superior Court of California, County of Sacramento

By: F. Temmerman
Deputy Clerk

Bonham v. Cabatic
Sacramento County Superior Court Case No.: 34-2013-80001695

PROOF OF SERVICE

I am a citizen of the United States and a resident of the County of Humboldt, over the age of 18 years and not a party to or interested in the within entitled case. My address is 100 M Street, Eureka, California, 95501. On **March 22, 2018,** I served the attached

NOTICE OF ENTRY OF ORDER

on the below-named individual(s) by placing true copy(ies) thereof in sealed envelope(s) and serving in the following manner:

[XX] **[U.S. MAIL]** By placing said envelope(s) for collection & mail with the United States Postal Service, postage prepaid. Said envelopes were addressed as follows below:

[XX] **[ELECTRONIC MAIL]** By emailing said document at the email address(es) indicated below:

Allison Goldsmith – Allison.Goldsmith@doj.ca.gov
Deputy Attorney General
1300 I Street, Suite 125
P.O. Box 944255
Sacramento, CA 94244-2550 **FAX: (916) 327-2319**

Alicia Boomer – Alicia.Boomer@dgs.ca.gov
Staff Counsel – OAH
2349 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833 **FAX: (916) 376-6398**

[ ] [BY FAX] By electronic mail to the fax number listed below.

[ ] [BY FEDERAL EXPRESS] By placing said envelope(s) for delivery with Federal Express Overnight Delivery Service.

[ ] [BY PERSONAL SERVICE] By causing said envelopes to be hand delivered this same date.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on **March 22, 2018**, at Eureka, California.

Linda A. Neely

BEFORE THE
OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF CALIFORNIA

In the Matter of the Statement of Issues Against: JOHN FRASER, Respondent.	Case No. 13ALJ06 OAH No. 2013060402

DECISION

This matter was heard before Dian M. Vorters, Administrative Law Judge, Office of Administrative Hearings, State of California, on September 3, 2013, in Sacramento, California.

David Kiene, Staff Counsel, appeared on behalf of the Fish and Game Commission (complainant).

Amy Mendoza-Stover, Attorney at Law,[1] represented respondent John Fraser, who appeared telephonically.

Evidence was received and the record was held open for complainant to submit a revised declaration and record of California landings. Complainant filed his revised Declaration of Jana Robertson and Request to take Judicial Notice of three Fish and Game Statutes (Fish & Game Code, §§ 7857, 8043, & 8046), on September 19, 2013. These documents were marked for identification as Exhibits H & I, respectively. Respondent filed his opposition to complainant's Request to take Judicial Notice on September 30, 2014, which was marked as Exhibit 9. Subsequently received argument was not admitted as untimely. The record closed on October 14, 2013.

SUMMARY

The newly established Dungeness Crab (DC) Trap Program limits the number of traps that DC vessel permit holders can operate during the California DC season. Fish and Game

[1] Amy Mendoza-Stover, Attorney at Law, Harland Law Firm LLP, 622 H Street, Eureka, California 95501.

Code section 8276.5, outlines a seven tier trap allocation schedule. Permit holders are assigned to one of the seven tiers limiting them to between 175 and 500 traps. A vessel is assigned to a tier based on the historical number of pounds of DC it landed (caught and delivered) in California between November 15, 2003, and July 15, 2008.

In February 2013, the Department notified DC vessel permit holders of the number of traps they could operate during the 2013-2014 DC season. Respondent received a letter from the Department dated February 5, 2013, notifying him that his trap tag allocation had been assigned to "Tier 7." Tier 7, the lowest allocation level, limits respondent to a maximum allocation of 175 trap tags. Respondent timely appealed his Tier 7 allocation. He argues that the Department understated his landings history by considering only his California landings and not his Oregon landings of DC caught in California waters as authorized by his operating permit. (Fish & Game Code, § 7891.) Respondent asserts "unusual circumstances" constituting an "unfair hardship" in that 1) he operates his vessel near the state line, 2) the predecessor in interest for his vessel suffered physical and mental disabilities affecting operations, and 3) his DC permit transfer was denied in March 2007, and delayed through 2009, in an administrative appeal which he ultimately won.

As set forth below, respondent presented sufficient evidence of unusual circumstances. The total landing receipts associated with his permit qualify him to receive a maximum allocation of 400 trap tags. (Fish & Game Code, § 8276.5, subd. (a)(1)(C).) As such, respondent's tag allocation must be revised upward. The filing fee of $3,044 is waived on grounds of medical hardship.

FACTUAL FINDINGS

1. Complainant James Fong, Chief, License and Review Branch of the Department of Fish and Wildlife (Department), filed this Statement of Issues on August 14, 2013, in his official capacity. Complainant alleged that the Department correctly allocated respondent to Tier 7 based on his relevant California landings history.

Relevant Licenses

2. Respondent is a commercial fisherman (Commercial Fishing Lic. No.) and the current owner of the "Njord" (Boat No. 252232), a fishing vessel registered with the State of California (Vessel Registration No. FG00087). Respondent's father Thomas Fraser (Commercial Fishing Lic. No.), bought the Njord in 1984, lived in Oregon, fished California waters, and had a home port in Brookings, Oregon. Respondent and his brother, Daniel R. Fraser, purchased the Njord from their father on May 24, 2006. Like his father, respondent lives in Brookings, Oregon, operates the vessel in California waters, and has a home port in Brookings.

3. In order to catch fish, mollusks or crustaceans in California waters and deliver the catch to any point outside of California, the individual must obtain from the Department a

"Permit to Land California Caught Fish at Points Outside of California" (Section 7891 Permit). (Fish & Game Code, § 7891; Cal. Code Regs., tit. 14, § 105.1.) In order to operate a vessel to catch DC for commercial purposes using crab traps, the vessel owner must obtain from the Department a DC Vessel Permit for that vessel. (Fish & Game Code, § 8280.1, subd. (a).) The Njord was first issued a Non-Resident DC Vessel (NDCV) Permit (No. CN0034-T7) in 1995.[2] This same NDCV Permit is still assigned to the Njord under a "grandfather" provision that allowed the permit to transfer to respondent after the death of his father in March 2008. (Fish & Game Code, § 8280.3, 8102.)[3] (see Factual Finding 5.)

Thomas Fraser's History of Injury

4. Respondent is 51 years of age and the oldest son of Thomas Fraser, prior owner of the Njord. Respondent began fishing for salmon, crab, and tuna with his father at age seven. Respondent explained that his current NDCV Permit is non-transferable and will expire if the Njord becomes inoperable or upon his passing. He described fishing as a demanding and dangerous job. When his father was in good health, the Njord operated with a three-member crew, Thomas Fraser as captain, respondent, and one other crewmember. In 1998, the health of respondent's father began to decline, as is summarized here:

a. In April 1998, T. Fraser had a mini-stroke and underwent surgery the following month on his right carotid artery. The recuperation time was six to eight months before T. Fraser "could even get back down on the dock." Respondent stated that his father sometimes could not remember how to get back to port when he was out on the ocean.

b. In March 1999 T. Fraser had his left knee replaced. Using a cane, he managed to "get up and down the dock." He was recovering from this surgery through 2000.

c. In 2001, T. Fraser continued to have mini-strokes. He continued to be disoriented on the ocean, having to return to dock to make sure he had the right medicine. Respondent stated that this negatively impacted his fishing career and his mother's livelihood.

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[2] A non-resident DC Vessel Permit is required for a nonresident owner of a registered commercial fishing vessel using Dungeness crab traps to take Dungeness for commercial purposes. A "resident" is any person who has resided continuously in the State of California for six months or more immediately prior to the date of their application for a license or permit. (Fish & Game Code, § 70.)

[3] The transfer was not timely in that in 2007, the Department denied respondent's application to renew the Njord's NDCV permit. Respondent prevailed in his administrative appeal.

d. In June 2002, T. Fraser underwent surgery on his left carotid artery after suffering a stroke. It took six to eight months for him to recuperate.

e. In July 2002, T. Fraser suffered an accident on his left hand. While cutting wood the saw sloped and severely cut his middle and index fingers. Corrective surgery entailed placement of stick rods from the tips to the knuckles to put his fingers back together. T. Fraser was never again able to use his left hand to man the posts and gear. Further, when the weather turned cold, arthritis set in.

f. In 2003, T. Fraser was still recovering from his hand and heart surgeries.

g. In May 2004, T. Fraser had his right knee replaced. In September 2004, T. Fraser fell through a metal roof and broke his left hip and tailbone. He underwent emergency surgery. It took over a year for him to recover and he needed a walker to get around. Respondent stated that though it was tough for his father to move around, he still attempted to work aboard the Njord.

h. In June and July 2006, T. Fraser had cataracts removed. Alexander Leighton, M.D., was T. Fraser's primary care physician until his T. Fraser's death in March 2008. Dr. Leighton wrote a letter dated July 7, 2008, in which he described T. Fraser's "multiple strokes that impaired his physical and mental ability." As such, "The patient was no longer able to safely work on a commercial crab fishing boat, required a walker, and could not stand for prolonged periods of time. His mental capabilities were also affected by the strokes."

i. Dr. Leighton also provided a Declaration of Medical Practitioner dated January 14, 2009, stating that T. Fraser had been unable to work on the crab boat after 2006 due to "recurrent cerebrovascular accidents." He also suffered "impaired mental capabilities resulting from recurrent strokes." Due to his mounting mental and physical incapacities, the family decided to transfer the fishing enterprise to respondent and his brother Daniel.

5. After purchasing the Njord in May 2006, respondent was unable to fish for crab in California waters for the next three years. Facing his father's declining health; he attempted to renew the NDCV Permit under his own name in 2004. However, the Department consistently refused to recognize respondent as a "working partner." (Fish & Game Code, § 8102.) In 2007, after the Department denied respondent's application to transfer/renew the Njord's DC Vessel Permit, respondent provided the requested documentation to the Department in support of his application. In 2008, the Department denied his application again and respondent pursued an appeal. The issue was litigated and respondent prevailed after an administrative hearing in March 2009 (Case No. 08ALJ03). On May 13, 2009, the Department approved the Njord's NDCV Permit. As such, he was

able to resume fishing for DC in California under the Njord's NDCV Permit during the 2009-2010 crab fishing season.

2013 Tier-Based System

6. On January 25, 2012, the Department sent respondent a "Verification of California Dungeness Crab Landings." The letter explained that recent legislation (Senate Bill 369) established crab trap allocations for California DC Vessel permit holders. Beginning with a program to be implemented by March 31, 2013, trap tags were to be allocated based on California landings of DC made with trap gear between November 15, 2003, and July 15, 2008. Department records showed that as of January 2012, the Njord (Vessel No. FG00087) had landed "0.00 pounds" of DC in California from 2003 through 2008.

7. On February 5, 2013, the Department sent respondent a "Notice of California Dungeness Crab Vessel Permit Trap Tier Allocation." The letter explained that based on the Njord's record of California landings from 2003 through 2008, the Department was assigning respondent's permit (CN0034-T7) to Tier 7, the lowest trap tag allocation. The letter also discussed permit fees for the 2013-2014 crab fishing season and appeal rights under Fish and Game Code section 8276.5, subdivision (a)(6).

Fishing near the State Line

8. Respondent has lived in Brookings, Oregon since 1970. He can "walk right across the California/Oregon border." He has fished for crab in both states but prefers fishing in California because the fishing grounds are closer. To fish in Oregon waters, he has to travel three hours north and burn more fuel in the process. He added that California has better weather.

9. Respondent's practice was to land or deliver his California caught crab to buyers in Oregon. Of the two feasible port cities for landings, Brookings, Oregon is closer to him than Crescent City, California. He also preferred landing his catch in Brookings because he yielded a better price. Respondent is authorized by the Department to fish in California waters and land his catch in a port outside of California under his "Section 7891" permit. (Fish & Game Code, § 7891.)[4]

10. Respondent fished for crab on the Njord in California waters in 2003, 2004, 2005, and 2006. He stated that he caught crab in California in 2007, but because California did not recognize him, he had to throw all of the crab back. He was not permitted to fish for crab in California waters for the remainder of 2007, or in 2008, and 2009. During these three

[4] The Department "may issue revocable permits to land fish caught from the waters of the Pacific Ocean within California at a point or place other than within this state..." (Cal. Code Regs., tit. 14, § 105.1.)

years, he fished in Oregon waters. Respondent stated that had he known prospectively that California would institute a tier-based system relying on California landings, he would have landed all of his catch in Crescent City, California instead of in Brookings, Oregon.

11. Respondent presented documentation of his DC landings in Oregon. The documentation consisted of buyer tickets also known as "landings receipts" (completed and certified by buyers when a vessel lands its catch) and a "Catch Detail" printout prepared by the Oregon Department of Fish and Wildlife showing Oregon DC landings between December 2002 and December 2009. The buyer tickets establish that respondent sold some of his catch to Hallmark Fisheries and Blaine Crab, both located in, Brookings, Oregon (Port Code 42). The "Catch Detail" showed that respondent landed 254,599 pounds of DC in Oregon between November 15, 2003 and July 15, 2008. (Fish & Game Code, § 8276.5, subd. (a)(1) [defines the relevant period of landings for tier allocation].) Respondent testified that he landed 289,439 pounds of DC from 2003 through 2008. Respondent's figure is overstated because he including landings during all months in 2003 and 2008. Relying solely on the Oregon Catch Detail, had respondent landed his catch in California during the relevant time period, he would have been allocated to Tier 3 (272,554.00 – 191,429.00 pounds, 400 crab traps). (Fish & Game Code, § 8276.5, subd. (a)(1)(C).)

Circumstances Constituting Unfair Hardship

12. *Declining Health of Thomas Fraser.* The declining health of respondent's father, who was the captain of the Njord, and original permit holder, negatively impacted respondent's crab catch from 1998 forward. As such, the Njord's total catch was lower. Illness or injury is recognized as a hardship under the Fish and Game Code. (see Fish & Game Code, § 8280.1, subd. (b)(2) [A DC vessel permit may be issued to: "A person who has a commercial fishing license ...who the department finds to have been unable, due to 'illness or injury or any other hardship,' to make a minimum of four landings in each of two of the previous three DC seasons, and who, in good faith, intended to participate in the DC fishery in those seasons."]) As such, respondent has established "unusual circumstances" constituting an "unfair hardship" during the relevant period between November 15, 2003, and July 15, 2008, for purposes of his appeal to revise upward his DC trap tier allocation. (Fish & Game Code, § 8276.5; Cal. Code Regs., tit. 14, §132.5.)

13. *Administrative Delay Affecting NDCV Permit.* Respondent was unable to fish California waters during his administrative appeal of the Department's refusal to transfer the NDCV Permit on the Njord from his father to respondent as the working partner. The denial and appeal process took several years and prevented respondent from fishing and landing DC in 2007, 2008, and 2009. Fish and Game Code section 8102 provides for the transfer of a permit from the "permittee partner who is no longer able to continue working and leaves the partner without a permit to continue participating in the fishery" to a "working partner." Working partners may or may not be related to the permittee, however, eligible family members "shall be a spouse, child (including adopted child), or sibling of the permittee, whose investment equity need not be proven by documentation..." (Fish & Game Code, § 8102, subds., (a) & (c).) Though respondent ultimately prevailed in obtaining the DC permit

originally held by his father, the delay constitutes an "unusual circumstance" constituting "unfair hardship" during two of the relevant years (2007 and 2008) for allocating tier assignments. (Fish & Game Code, § 8276.5 [allocation based on California landings between November 15, 2003 and July 15, 2008].)

14. *State Line Fishermen.* Due to the unique nature of fishing on the state line, respondent is in the unusual circumstance of having a choice as to which state to land his catch in. For such fishermen, hindsight is everything. Respondent held a valid Section 7891 permit authorizing him to land his California catch in Oregon. He had no way of knowing prior to 2012 that California would implement a tiered system based on "California" landings. His geographic location amounts to an "unusual circumstance" compared to the majority of permit holders fishing California waters. To base his crab trap tier on California-only landings during the relevant time period, when he was issued a permit by the Department allowing him to take his catch out of state, would constitute an "unfair hardship." As such, his Oregon landings are relevant to a determination of the correct tier allocation.

Complainant argues that only California landings are relevant to tier allocation determinations. He asserts that the Fish and Game Code requires the reporting of landings on forms produced by the California Department of Fish and Wildlife, therefore, only those receipts should be considered. (see Fish and Game Code, §§ 7857, subd. (f), 8043, subd. (a), & 8046, subd. (a).) Landing receipts are maintained by the "fish receiver" or buyer, not the permit holder. [5] To follow complainant's argument, all Section 7891 permit holders would be allocated to Tier I, because their "landing receipts" will often be from out of state buyers, at the port where their catch is landed and sold.

Fish and Game Code section 7891, which authorizes out of state delivery of California fish, does not speak to landing receipts and does not require out of state buyers to use California issued landing receipts. On a practical note, this would require buyers in Oregon, Washington State, and other ports, to maintain and use California forms, possibly in contravention of their own state laws.

Respondent submitted buyer tickets from two Oregon receivers, Blaine Crab and Hallmark Fisheries. It is noted that these Oregon landing receipts, on forms generated by the Oregon Department of Fish and Wildlife (No. FD 1079), contain the same essential information as is required under California law.[6]

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[5] In fact, under California law, if the receiver terminates his or her business activity, any unused landing receipts and books must be forwarded to department immediately. (Fish & Game Code, § 8043, subd. (c).)

[6] Fish and Game Code section 8043, subdivision (b) states that the landing receipt shall show all of the following:

1) The accurate weight of the species of fish received
2) The name of the fisherman and the fisherman's identification number

Respondent obtained a permit authorizing him to take California caught DC to a port outside of California. He and similarly situated state-line fishermen are in an unusual circumstance relative to tier allocations under the new program. Nothing in the newly implemented Section 8276.5 nullifies permits issued under Section 7891. Had the legislature intended to repeal Fish and Game Code section 7891, as part of the new crab trap allocation program, it would have done so. "Landing receipts associated with the permit" held by respondent, by their very nature come from other states or "points beyond state waters." (Fish & Game Code, §§ 7891, 8276.5, subd. (a)(6)(A); Cal. Code Regs., tit. 14, § § 105.1, 132.5, subd. (a)(1)(A).) As such, respondent's out of state landings are relevant and necessary for a true and proper tier allocation.

Fee Waiver

15. Permit holders who seek an appeal of the Department's crab trap tier allocation are required to pay all expenses including a nonrefundable filing fee. (Fish & Game Code, § 8276.5, subd. (a)(6)(A).) An appeal to revise upward a DC trap and bouy tag allocation must be made in a notarized letter and include a nonrefundable filing fee of $3,044. (Cal. Code Regs., tit. 14, § 132.5, subd. (a)(1)(A).) Permit holders requesting an appeal may apply to the administrative law judge for a waiver of the appeal fees. Consideration may only be given to "medical hardship or military service occurring during the tier qualifying window period of November 15, 2003, through July 15, 2008." (Fish & Game Code, § 8276.5, subd. (a)(6)(B); Cal. Code Regs., tit. 14, § 132.5, subd. (a)(1)(C).)

On May 15, 2013, respondent filed his "Request for Appeal to Revise Tier Assignment Upward" and enclosed a check for $3,044, made out to the department. On August 29, 2013, respondent requested a waiver of the filing fee associated with his appeal based on medical hardship. He included a summary of the disabling medical problems suffered by the Njord's captain, Thomas Fraser, from 2002 until his death in 2008. (see Factual Finding 4.)

Respondent learned to fish from his father, T. Fraser who had a lot of experience fishing and knew where to put the traps. T. Fraser, captain of the Njord, suffered numerous

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3) The department registration number of the boat
4) The recipient's name and identification number, if applicable
5) The date of receipt
6) The price paid
7) The department original block number where the fish were caught
8) The type of gear used
9) Any other information the department may prescribe

injuries and surgeries during the qualifying window period between 2003 and 2008. His physical and mental impairments began in 1998 and increasingly affected the Njord's operations. T. Fraser was often absent due to hospitalizations and the need to recuperate after strokes and surgeries on his hips, knees, hand, and eyes. The strokes and medications also affected his mental capabilities. Respondent stated his father was sometimes disoriented and did not know where he was on the ocean. They sometimes had to return to port because they were not sure T. Fraser had taken the correct medication. When the weather turned cold, T. Fraser's arthritis made him unable to "man the pots and gear." Respondent testified that his father's impairment "affected me and my mom's livelihood."

Respondent has presented evidence of medical hardship involving the captain of the Njord during the relevant time period. T. Fraser's injuries and illnesses (affecting his hands, knees, hips, and mental acuity) caused him to be substantially impaired from contributing to his family's fishing enterprise during the relevant time period until his death in March 2008. A waiver of the appeal fee on grounds of medical hardship is granted.

LEGAL CONCLUSIONS

Applicable Laws and Regulations

1. Appellant bears the burden of proving by a preponderance of the evidence that the trap tag allocation is incorrect. (*McCoy v. Board of Retirement* (1986) 183 Cal. App. 3d 1044, 1051.)

2. Fish and Game Code section 8280.1 provides that no person shall use a vessel to take, possess, or land Dungeness crab for commercial purposes using Dungeness crab traps authorized pursuant to Section 9011, unless the owner of that vessel has a valid Dungeness crab vessel permit for the vessel.

3. Fish and Game Code section 7891 provides that no person may operate or assist in operating or using any vessel in connection with fishing operations by which the vessel delivers to any point or place other than within this State any fish, mollusks or crustaceans which are caught in or taken aboard the vessel from the waters of the Pacific Ocean within this State, "unless a permit authorizing the same shall have been issued by the Fish and Game Commission." The department may issue revocable permits to land fish caught from the waters of the Pacific Ocean within California at a point or place other than within this state upon application to the department. (Cal. Code Regs., tit. 14, § 105.1.)

4. Fish and Game Code section 8276.5, required the Director in consultation with the DC task force, to adopt a program by March 31, 2013, for DC trap limits for all California permits. Fish and Game Code section 8276.5, subdivision (a) states:

(1) The program shall contain seven tiers of Dungeness crab trap limits based on California landings receipts under California permits between November 15, 2003, and July 15, 2008, as follows:

(A) The 55 California permits with the highest California landings shall receive a maximum allocation of 500 trap tags.

(B) The 55 California permits with the next highest California landings to those in subparagraph (A) shall receive a maximum allocation of 450 trap tags.

(C) The 55 California permits with the next highest California landings to those in subparagraph (B) shall receive a maximum allocation of 400 trap tags.

(D) The 55 California permits with the next highest California landings to those in subparagraph (C) shall receive a maximum allocation of 350 trap tags.

(E) The 55 California permits with the next highest California landings to those in subparagraph (D) shall receive a maximum allocation of 300 trap tags.

(F) The remaining California permits with the next highest California landings to those in subparagraph (E), which are not described in paragraph (1) or (2) of subdivision (g) of Section 8276.4, shall receive a maximum allocation of 250 trap tags.

(G) The California permits described in paragraphs (1) and (2) of subdivision (g) of Section 8276.4 shall receive a maximum allocation of 175 tags. The tags in this tier shall not be transferable for the first two years of the program.

(2) Notwithstanding paragraph (1), the director shall not remove a permitholder from a tier described in paragraph (1), if, after an allocation is made pursuant to paragraph (1), an appeal pursuant to paragraph (6) places a permitholder in a tier different than the original allocation.

[¶]...[¶]

5. A permit holder may appeal the department's trap tag allocation. (Fish & Game Code, § 8276.5, subd. (a)(6); Cal. Code Regs., tit. 14, § 132.5.) Pursuant to Fish and Game Code section 8276.5, subdivision (a)(6), permit holders may appeal the department's trap tag allocation as follows:

(6)(A) Any Dungeness crab permitholder may submit to the director an appeal of a trap tag allocation received pursuant to this section, by March 31, 2014, on a permit-by-permit basis for the purpose of revising upward or downward any trap tag allocation. Any appeal to revise upward a trap tag allocation shall be based on evidence that a permit's California landings during the period

between November 15, 2003, and July 15, 2008, inclusive, were reduced as a result of unusual circumstances and that these circumstances constitute an unfair hardship, taking into account the overall California landings history as indicated by landing receipts associated with the permit. The director shall initiate the appeal process within 12 months of receiving an appeal request. The appeal shall be heard and decided by an administrative law judge of the Office of Administrative Hearings, whose decision shall constitute the final administrative decision. Except as provided in subparagraph (B), any Dungeness crab permitholder requesting an appeal to revise upward the permitholder's trap tag allocation shall pay all expenses, including a nonrefundable filing fee, as determined by the department, to pay for the department's reasonable costs associated with the appeal process described in this paragraph.

(B) Any Dungeness crab permitholder requesting an appeal may apply to the administrative law judge for a waiver of the appeal fees. In making the determination, the administrative law judge may only consider medical hardship or military service occurring during the tier qualifying window period of November 15, 2003, through July 15, 2008.

(C) An appeal to revise downward a trap tag allocation shall be decided by the department.

Analysis of Grounds for Appeal

6. Unusual circumstances constituting unfair hardship were established by respondent as set forth in Factual Findings 12, 13, and 14. Based on the declining health of T. Fraser, the delay caused by the administrative appeal of the denial of the Njord's NDCV permit, and respondent's location on the California/Oregon state line, the pounds of DC and number of landing receipts used by the Department to determine respondent's trap allocation was understated. As such, respondent's appeal to revise upward his DC trap and buoy tag allocation is granted. Based on all of the relevant evidence, he is properly allocated to Tier 3. (Factual Finding 11.)

7. Respondent established the existence of a medical hardship affecting the Njord's operations during the relevant time period of November 15, 2003, through July 15, 2008. As such, appeal fees in the amount of of $3,044 are waived in full. (Factual Finding 15.)

ORDER

Respondent John Fraser's appeal to revise his tier assignment upward is GRANTED. The trap tag allocation for the Njord (Vessel No. FG00087, Permit No. CN0034-T7) is revised upward from Tier 7 to Tier 3.

Appeal fees in the amount of $3,044 are waived based on evidence of medical hardship. The appeal fee submitted with respondent's appeal on or about June 5, 2013 (Check No. 2548), shall be refunded.

DATED: October 30, 2013

DIAN M. VORTERS
Administrative Law Judge
Office of Administrative Hearings

DECLARATION OF SERVICE

Case Name: Fraser, John A. **OAH No.: 2013060402**

I, Zendie Tolentino, declare as follows: I am over 18 years of age and am not a party to this action. I am employed by the Office of Administrative Hearings. My business address is 2349 Gateway Oaks Drive, Suite 200, Sacramento, CA 95833. On October 30, 2013, I served a copy of the following document(s) in the action entitled above:

DECISION

to each of the person(s) named below at the addresses listed after each name by the following method(s):

John A Fraser

VIA U.S. Mail

Amy Mendoza-Stover
Harland Law Firm
622 H Street
Eureka, CA 95501
VIA US Mail and courtesy copy VIA Fax:
Amy Mendoza-Stover 1-707-445-2961

David Kiene
Department of Fish & Game
1416 Ninth Street, Room 1341
Sacramento, CA 95814
VIA U.S. Mail and courtesy copy VIA Fax:
David Kiene 654-3805

☒ **United States Mail.** I enclosed the document(s) in a sealed envelope or package addressed to the person(s) at the address(es) listed above, and placed the envelope or package for collection and mailing, in accordance with the Office of Administrative Hearings' ordinary business practices, in Sacramento, California. I am readily familiar with the Office of Administrative Hearings' practice for collecting and processing documents for mailing. Correspondences are deposited in the ordinary course of business with the United States Postal Service in a sealed envelope or package with postage fully prepaid. [☐ by certified mail].

☒ **Fax Transmission.** Based upon agreement of the parties to accept service by fax transmission, I personally transmitted the above-described document(s) to the person(s) at the fax number(s) listed above, from fax machine number (916) 376-6349, pursuant to Government Code section 11440.20 and California Code of Regulations, title 1, section 1008, subdivision (d).

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. This declaration was executed at Sacramento, California on October 30, 2013.

Zendie Tolentino, Declarant

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Certified Mail

June 19, 2018

Mr. Timothy J. Wykle
Mathews, Kluck, Walsh & Wykle, LLP
Attorneys At Law
100 M St.
Eureka, CA 95501

Subject: **NOTICE OF DENIAL FOR REINSTATEMENT OF DUNGENESS CRAB VESSEL PERMIT, PERMIT NUMBER CN0034-T3**

Dear Mr. Wykle:

This letter is in response to your client's, John A. Fraser, request to reinstate the Nontransferable Dungeness Crab Vessel Permit, Permit Number CN0034-T3 ("Permit"), for the F/V *Njord* (FG00087). Department of Fish and Wildlife ("Department") license records show that the Permit was last valid during the 2014-2015 permit year.

Authority-Dungeness Crab Vessel Permit
Pursuant to Fish and Game Code (FGC) Section 8280.2(e), applications for renewal of all Dungeness crab vessel permits shall be received by the Department, or, if mailed, postmarked, by April 30 of each year. In order for a vessel to retain eligibility, a permit shall be obtained each year subsequent to the initial permit year and the vessel shall be registered pursuant to Section 7881.

Authority-Late Renewal Applications
Under FGC Section 7852.2, a graduated late fee was established for any renewal application that is received after the deadline.

In addition, FGC Section 7852.2(b) states the Department shall not waive the applicable late fee. Pursuant to FGC Section 7852.2(c), the Department shall deny any application for renewal received after March 31 of the permit year following the year in which the applicant last held a valid permit for that fishery.

Department Findings
On May 24, 2018, the Department received a letter requesting that the Department reinstate Mr. Fraser's Tier 3 Permit. License records show that the F/V *Njord* held a valid 2014-2015 Permit, which made Mr. Fraser eligible to renew the permit for the 2015-2016 permit year.

Department Determination
Based on the previously stated information, Mr. Fraser's request to reinstate the Permit for the F/V *Njord* is denied, because the F/V *Njord* last held a valid Permit in the 2014-2015 permit year. The Department received the request to renew the Permit on May 24, 2018. FCG Section 7852.2(c) states that the Department shall deny any application for renewal received after March 31 of the permit year following the year in which the applicant last held a valid permit for that fishery.

Deadline to File an Appeal to the Fish and Game Commission
If you wish to appeal the Department's decision, you must submit a written request to the Fish and Game Commission ("Commission") at P.O. Box 944209, Sacramento, CA 94244-2090, or you can request an appeal by emailing the Commission at fgc@fgc.ca.gov. Pursuant to FGC Section 7852.2(d), your appeal must be received within 60 days of the date of this letter. The Commission, upon consideration of the appeal, may grant the renewal of the Permit. If the Commission grants the renewal, it shall assess the applicable late fee.

Extended 8/18/18 (Saturday)

The Commission will review the information you submit and will notify you in writing if your appeal will be scheduled before the Office of Administrative Hearings. If the Commission should recommend approval, full payment of $10,367.22 would be due. A fee schedule is enclosed.

If you have any questions or require further assistance, please contact Ms. Ruth Flores at (916) 928-7470 or Ruth.Flores@wildlife.ca.gov.

Sincerely,

Joshua Morgan, Chief
License and Revenue Branch

cc: Mr. Michael Yaun
Fish and Game Commission
Sacramento, CA

Mr. John A. Fraser

Ms. Ruth Flores
California Department of Fish and Wildlife
Sacramento, CA

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Mr. John A. Fraser
Fees Required for a
Nontransferable Dungeness Crab Vessel Permit (NDCVP)
Permit Number CN0034-T3
F/V Njord (FG00087)

Prior Year Fees		**Permit Fees**
2015-2016	NDCVP	$ 287.00
	Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 3,007.50
	Late Fee (61 days to March 31, 2016)	$ 589.00
		3,883.50
2016-2017	Commercial Fishing License	$ 136.73
	Commercial Boat Registration	$ 356.00
	NDCVP	$ 287.00
	Late Fee (61 days to March 31, 2017)	$ 589.00
		1,368.73
2017-2018	Commercial Fishing License	$ 136.99
	Commercial Boat Registration	$ 357.00
	NDCVP	$ 287.75
	Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 3,007.50
	Late Fee (61 days to March 31, 2018)	$ 590.50
		$ 4,379.74
Prior Year Fees Due		**$ 9,631.97**
Current Year Fees		
2018-2019	NDCVP	$ 583.00
	Late Fee (1 to 30 days)	$ 152.25
Total Current Fees Due		**$ 735.25**
Total Fees Due		**$ 10,367.22**

If the Fish and Game Commission should recommend approval, full payment of $10,367.22 would be due.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Office of the General Counsel
P.O. Box 944209
Sacramento, CA 94244-2090
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

March 21, 2019

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Re: *In the Matter of John Fraser*

Dear Commissioners:

This letter is in response to John Fraser's request to appeal the Department of Fish and Wildlife's ("Department") denial of his request to renew his Nontransferable Dungeness Crab Vessel Permit ("Renewal Request"), #CN0034-T3 ("Permit"). His Permit was last valid during the 2014-15 fishing year. Mr. Fraser submitted his appeal request to the Commission on July 3, 2018. The Department will not be participating in this appeal and accordingly, does not object to the renewal of his Permit for the 2019-2020 fishing year, provided that he pays all applicable fees that are described in the attached fee statement (Exhibit 1). However, as explained below, the Renewal Request includes several inaccurate claims that depict the Department as nonresponsive to Mr. Fraser's various permit-related requests.

First, Mr. Fraser claims that:

> …beginning in permit year 2015-2016, Mr. Fraser did not receive his permit renewal application by mail from the Department, as he was accustomed to. When he did not receive it, he telephoned the Department in Sacramento, on at least 4 different occasions, inquiring as to the whereabouts of his permit renewal application. He was told that it either had been or would be sent to him in the mail. He never received it. (Renewal Request, p. 2.)

This claim is false. In fact, the Department had sent a permit application to Mr. Fraser which he had signed and returned, but on which he had crossed off required fees for tags and declined to pay the tag fees. (Exhibit 2.) Because the application was incomplete and fees were missing, the Department did not renew the Permit for that year. When Department Commercial Fishing Analyst Ruth Flores called Mr. Fraser on April 2, 2015 to discuss his application, Mr. Fraser explained that he was not planning to pay for tag fees, but said he was instead going to wait to pay the fees until after a pending court case against the Department had concluded.

Likewise, Mr. Fraser's claims that the Department "failed" to send him a permit renewal application" for permit years 2016-2017 and 2017-2018, and that in doing so, "the Department deviated from its ordinary and customary practice," are also false. (Renewal Request, pp. 2-3.) In fact, the Department did not "fail" to send him a renewal application. Instead, it is the Department's License and Revenue Branch's ("LRB") ordinary and customary practice not to

send out renewal applications in any commercial fishery (including Dungeness crab) to a permittee who does not renew a permit the previous year.

Finally, Mr. Fraser falsely implies that the Department was unresponsive to his inquiries. As mentioned above, Mr. Fraser claims that he "telephoned the Department in Sacramento, on at least 4 different occasions, inquiring as to the whereabouts of his [2015-2016] permit renewal application..." but had "never received it." (Renewal Request, p.2.) This claim is false. As explained above, and shown in Exhibit 2, Mr. Fraser had received and returned his 2015-2016 application to the Department. Thus, his entire explanation about the 2015-2016 application, including his claim about making four phone calls about this application, is not credible. Mr. Fraser also falsely claims that "he telephoned the Department in Sacramento numerous times..." and "was eventually able to leave a voicemail message with Ms. Flores with the Department, who later left Mr. Fraser a voicemail message, advising him that a permit renewal application would be mailed to him." (Renewal Request, p.3.) But, Ms. Flores does not recall receiving or leaving such a message, and her detailed phone logs do not show that she received a voicemail from Mr. Fraser or left a voicemail with him on that date or any other date. In any event, as explained above, it is LRB's practice not to mail permit applications for permits that had not been renewed during the previous year, so it is implausible that Ms. Flores would leave a message stating that the Department would mail an application to him.

While Mr. Fraser makes many false statements, nonetheless, the Department does not oppose his Renewal Request as long as he pays several fees described in Fish and Game Code, section 7852.2 ("Section 7852.2"), subdivision (a). Section 7852.2, subdivision (a) states:

> (a) In addition to the base fee for the license, stamp, permit, or other entitlement, the department shall assess a late fee for any renewal the application for which is received after the deadline, according to the following schedule:
> (1) One to 30 days after the deadline, a fee of one hundred twenty-five dollars ($125).
> (2) Thirty-one to 60 days after the deadline, a fee of two hundred fifty dollars ($250).
> (3) Sixty-one days or more after the deadline, a fee of five hundred dollars ($500).

To emphasize that these fees must be paid, Section 7852.2, subdivision (b) states, "The department shall not waive the applicable late fee," while subdivision (d) states, "If the commission grants renewal, it shall assess the applicable late fee pursuant to subdivision (a)." The fees for this renewal total **$13,976.47** and are described in the attached fee statement. The renewal might make Mr. Fraser eligible to receive Dungeness crab disaster relief funds.

If you have any questions please contact me at the address above or by telephone number (916) 651-7646, or e-mail at David.Kiene@wildlife.ca.gov.

Sincerely,

DAVID KIENE
Senior Staff Counsel

Cc: Tim Wykle
Attorney for John Fraser

Department Exhibit 1

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Mr. John A. Fraser
Fees Required for a
Nontransferable Dungeness Crab Vessel Permit (NDCVP)
Permit Number CN0034-T3
F/V Njord (FG00087)

Prior Year Fees		**Permit Fees**
2015-2016	NDCVP	$ 287.00
	Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 3,007.50
	Late Fee (61 days to March 31, 2016)	$ 589.00
		3,883.50
2016-2017	Commercial Fishing License	$ 136.73
	Commercial Boat Registration	$ 356.00
	NDCVP	$ 287.00
	Late Fee (61 days to March 31, 2017)	$ 589.00
		1,368.73
2017-2018	Commercial Fishing License	$ 136.99
	Commercial Boat Registration	$ 357.00
	NDCVP	$ 287.75
	Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 3,007.50
	Late Fee (61 days to March 31, 2018)	$ 590.50
		$ 4,379.74
2018-2019	NDCVP	$ 583.00
	Late Fee (1 to 30 days)	$ 152.25
Prior Year Fees Due		**$ 10,367.22**
Current Year Fees		
2019-2020	NDCVP	$ 601.75
	Biennial Dungeness Crab Trap Limit Permit/Buoy Tags	$ 3,007.50
Total Current Fees Due		**$ 3,609.25**
Total Fees Due		**$ 13,976.47**

If the Fish and Game Commission should recommend approval, full payment of $13,976.47 would be due.

Department Exhibit 2

CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF FISH AND WILDLIFE
2015 COMMERCIAL BOAT REGISTRATION RENEWAL

FG BOAT #: 00087

SEE INSERT FOR ADDITIONAL INSTRUCTIONS (Renewal submissions by phone, fax or email will not be accepted)
- You can now renew your Commercial Boat Registration online at www.wildlife.ca.gov/licensing/ols
- Licenses purchased online will include a 5% non-refundable license agent handling fee.

FRASER JOHN A/DANIEL R

CDF Rec'd MAR 30 2015 By LRB

VESSEL GO ID	FG BOAT #	VESSEL NAME
	00087	NJORD

DOCUMENTATION: TYPE/YEAR/VALUE/STATE/EXPIRATION DATE:
Coast Guard - 2013 - 252232 - - 5/31/2014

IMPORTANT! **Copy of Current Coast Guard or State Registration is required if documentation listed above has expired at time of renewal.**

VESSEL DETAIL:

YEAR BUILT	HULL NUMBER		LENGTH IN FEET	BREADTH IN FEET	DEPTH IN FEET
1947			37.00	12.20	7.30
HORSEPOWER	GROSS TONNAGE	NET TONNAGE	PASSENGERS	VESSEL PORT NAME	
150	19.00	9.00		UNKNOWN	

OWNER INFORMATION:

DBA

PHYSICAL ADDRESS | EMAIL | DAY PHONE

CITY | STATE | ZIP CODE | I HAVE RESIDED IN CALIFORNIA CONTINUOUSLY FOR THE PAST 6

Base Licenses			Fee	Total
Resident Commercial Boat Registration			$356.00	
Nonresident Commercial Boat Registration			$356.00	356.00
General Privileges	**Additional Permit Information**		**Fee**	**Total**
Commercial Passenger Fishing Vessel Permit (CPFV)			$356.00	
Commercial Ocean Enhancement Stamp - CPFV			$50.47	
Commercial Salmon Stamp - CPFV	One stamp required per crewmember. Qty:	x	$87.55	
Coonstripe Shrimp Trap Vessel Permit			$107.64	
Tanner Crab Trap Vessel Permit			$13,092.50	
Limited Entry Permits	**Additional Permit Information**		**Fee**	**Total**
Commercial Salmon Vessel Permit With Qualifier	Commercial Fishing License ID: t		$43.00	43.00
Commercial Salmon Vessel Permit With Stamp	Commercial Fishing License ID: t		$130.55	
Commercial Salmon Vessel Permit Over 70	Qualifies if owner > 70 years old.		~~$43.00~~	
Commercial Salmon Stamp (John Doe)			$87.55	
Dungeness Crab Vessel Permit NT (NR) - Tier 3			$287.00	287.00
Dungeness Crab Vessel Permit NT (R) - Tier 3			$287.00	
Dungeness Crab Trap Tag Biennial Fees (NT) - Tier 3			$3,007.50	
Late Fees			**Fee**	**Total**
Limited Entry Late Fee (1 To 30 Days)		x	$147.50	
Limited Entry Late Fee (31 To 60 Days)		x	$294.25	
Limited Entry Late Fee (61 Or More Days)		x	$589.00	
			TOTAL PAYMENT AMOUNT	

PERMIT DEADLINES FOR LIMITED ENTRY COMMERCIAL FISHING AND VESSEL PERMITS

Applications must be received with the permit fee at a Department of Fish and Wildlife (Department) office or if mailed, postmarked on or before April 30, 2015 for the above listed limited entry commercial permits.

Renewals received or postmarked after April 30, 2015, must be accompanied with permit fee and late fee as follows:
May 1, 2015 through May 30, 2015 ..... $147.50
May 31, 2015 through June 29, 2015 ..... $294.25
June 30, 2015 to March 31, 2016 ..... $589.00

Renewals received or postmarked after March 31, 2016 will be returned to the applicant who may appeal the late renewal in writing to the Department. (Fish and Game Code Section 7852.2(c))

RETURN THIS RENEWAL TO ONE OF THE DEPARTMENT OFFICES LISTED IN THE ENCLOSED INSERT

CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF FISH AND WILDLIFE
2015 COMMERCIAL FISHING LICENSE RENEWAL

COMMERCIAL FISHING ID: [redacted]
GO ID: [redacted]

SEE INSERT FOR ADDITIONAL INSTRUCTIONS (Renewal submissions by phone, fax or email will not be accepted)
You can now renew your Commercial Fishing License online at www.wildlife.ca.gov/licensing/ols
Licenses purchased online will include a 5% non-refundable license agent handling fee.

[redacted]

CDFW Received MAR 30 2015 BY LRB

JOHN ALAN FRASER

CUSTOMER INFORMATION: (Unless DMV ID field shows 'ON FILE', a copy of your current identification *MUST* be submitted at time of renewal)

FIRST NAME	MIDDLE NAME	LAST NAME	SUFFIX	DMV ID/STATE ID/PASSPORT	ID STATE
JOHN	ALAN	FRASER		On File	OR

PHYSICAL ADDRESS			SEX		DATE OF BIRTH	
CITY	STATE	ZIP CODE	HAIR COLOR	EYE COLOR	HEIGHT	WEIGHT
I HAVE RESIDED IN CALIFORNIA CONTINUOUSLY FOR THE PAST 6			DAY PHONE #		EMAIL	

Base Licenses		Fee	Total
Resident Commercial Fishing License		$136.73	
✓ Nonresident Commercial Fishing License		$136.73	136.73
General Privileges	**Additional Permit Information**	**Fee**	**Total**
Anchovy Take Permit	FG#:_____ Boat Name:_____	$43.00	
Bay Shrimp Permit		$43.00	
Commercial Fishing Ocean Enhancement Stamp		$50.47	
✓ Commercial Salmon Stamp		$87.55	87.55
Commercial Trap Permit		$50.47	
Ghost Shrimp Permit	Must possess a Tidal Invertebrate Permit	$43.00	
Golden & Ridgeback Prawn Permit		$43.00	
Lobster Crewmember Permit		$179.74	
Marine Aquaria Collector Permit		$468.00	
Northern Rock Crab Trap Permit	Must possess a Commmercial Trap Permit	$351.25	
Sea Urchin Crewmember Permit		$43.00	
Southern Pink Shrimp Trawl Permit		$43.00	
Swordfish Permit		$468.00	
Tidal Invertebrate Permit		$43.00	
		Total Amount Due:	224.28

PERMIT DEADLINES FOR LIMITED ENTRY COMMERCIAL FISHING AND VESSEL PERMITS

Applications must be received with the permit fee at a Department of Fish and Wildlife (Department) office or if mailed, postmarked on or before April 30, 2015 for the above listed limited entry commercial permits.

Renewals received or postmarked after April 30, 2015, must be accompanied with permit fee and late fee as follows:
May 1, 2015 through May 30, 2015 ..... $147.50
May 31, 2015 through June 29, 2015 ..... $294.25
June 30, 2015 to March 31, 2016 ..... $589.00

Renewals received or postmarked after March 31, 2016 will be returned to the applicant who may appeal the late renewal in writing to the Department. (Fish and Game Code Section 7852.2(c)).

RETURN THIS RENEWAL TO ONE OF THE DEPARTMENT OFFICES LISTED IN THE ENCLOSED INSERT

JOHN ALAN FRASER - 2015 COMMERCIAL FISHING LICENSE RENEWAL

State of California – Department of Fish and Wildlife

2015-2016 INSTRUCTIONS FOR COMPLETING COMMERCIAL FISHING LICENSE RENEWAL

DFW 1309 (REV. 10/14) Previously FG 1309

Incomplete renewals will be returned and may delay the issuance of your license. Contact one of the California Department of Fish and Wildlife (Department) offices listed on the back if you need additional information regarding commercial fishing licenses.

COMMERCIAL FISHING LICENSE REQUIRED

Before a commercial fishing permit, stamp, or other entitlement can be issued, an applicant must possess a valid 2015-2016 Commercial Fishing License (resident or nonresident). Fish and Game Code (FGC) Section 7857(a).

INSTRUCTIONS

1. If you are renewing your commercial fishing license, please read the preprinted information and add any missing information. Circle any incorrect information and print the correct information beside it.
2. Select the required licenses or permits and calculate the amount due.
3. Mail worksheet with other permit renewals, if necessary, with a cashier's check, money order, personal check* or credit card** authorization form for the appropriate fee to one of the Department offices listed on the back. **DO NOT SEND CASH.**

IMPORTANT! Please allow 15 business days to process your renewal application.

IDENTIFICATION REQUIREMENTS

Section 700.4(c), Title 14, of the California Code of Regulations (CCR) states any applicant applying for any license, tag, permit, reservation or other entitlement issued via the Automated License Data System (ALDS) shall provide valid identification. Acceptable forms of identification include:

- Any license document or Get Outdoors identification number (GO ID) previously issued via ALDS
- A valid driver's license or identification card issued to him or her by the Department of Motor Vehicles or by the entity issuing driver's licenses from the licensee's state of domicile
- US Military Identification Cards (Active or reserve duty, dependent, retired member, discharged from service, medical/religious personnel)
- US Birth Certificate
- US Certificate or Report of Birth Abroad
- Tribal Identification Card, as defined by each sovereign tribal nation
- US Passport
- A foreign government-issued photo identification
- Certificate of Naturalization or Citizenship
- Birth Certificate or passport issued from a US Territory

Any applicant less than 18 years of age applying for any license, tag, permit, reservation or other entitlement issued via the ALDS shall provide valid identification. Acceptable forms of identification include any form of identification described above; or a parent or legal guardian's identification as described above.

At all times when engaged in any activity for which a commercial fishing license is required, the licensee shall have in his or her possession, or immediately available to the licensee, a valid driver's license or identification card issued to him or her by the Department of Motor Vehicles or by the entity issuing driver's licenses from the licensee's state of domicile. A current passport may be used in lieu of a valid driver's license or identification card by a holder of a valid nonresident commercial fishing license issued pursuant to FGC subdivision (b) of Section 7852. The licensee's driver's license, identification card or, if applicable, passport, shall be exhibited upon demand to any person authorized by the Department to enforce this code or regulations. (FGC Section 7852.27)

METHOD OF PAYMENT – Please Do Not Send Cash Indicate type of payment:

Enclose a check or money order payable to **California Department of Fish and Wildlife (CDFW)** or complete the Visa or MasterCard authorization below.

TOTAL $|__|__|__|__|.|__|__|

CREDIT CARD #

EXPIRATION DATE

CVC Number (On ba

I authorize CDFW to charge the agreed amount listed above to my credit card provided herein. I agree that I will pay for this purchase in accordance with the issuing bank cardholder agreement.

SIGNATURE John A. Fogg

CDFW Received MAR 30 2015 BY LRD

DATE 3-27-15

PRINT NAME (As it appears on your credit card) John A. Fogg

PHONE NUMBER

ADDRESS

REMEMBER TO: ✓ Include a copy of valid identification, if required ✓ Submit payment

SUBMIT RENEWAL AND PAYMENT TO: Department offices listed on back

State of California - The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd
Sacramento, CA 95834
http://www.wildlife.ca.gov

EDMUND G. BROWN JR, Governor
CHARLTON H. BONHAM, Director

Certified Mail

October 6, 2016

Mr. Louis J. Ferrari

SUBJECT: NOTICE OF DENIAL TO CONSIDER APPEAL FOR A TRANSFERABLE NORTH CENTRAL COAST REGION NEARSHORE FISHERY PERMIT

Dear Mr. Ferrari:

This letter is in response to your July 1, 2016 letter to the Department of Fish and Wildlife (Department) in which you asked the Department to convert your Non-Transferable North-Central Coast Region Nearshore Fisheries Permit (NTNCCRNFP) to a Transferable North-Central Region Nearshore Fisheries Permit (TNCCRNFP).

California Code of Regulations, Title 14, section 150, subdivision (m)(1) (Section 150(m)(1)) states:

> Any applicant who is denied initial issuance of a Nearshore Fishery Permit for any reason may appeal to the department in writing describing the basis for the appeal. The appeal shall be received or, if mailed, postmarked, no later than March 31, 2004. The appeal shall be reviewed and decided by the department. The decision of the department may be appealed in writing to the commission within 60 days of the date of the department's denial.

On May 7, 2003, Mr. Zeke Grader, with the Pacific Coast Federation of Fishermen's Associations, submitted to the Department on your behalf an appeal of the Department's denial of your request to receive a TNCCRNFP. The Department denied your appeal on June 11, 2003.

Pursuant to Section 150(m)(1), you were required to appeal the Department's appellate decision to the Fish and Game Commission (Commission) within 60 days of the Department's decision. While the 60 day period lapsed in 2004, you should nonetheless submit your appeal request to the Fish and Game Commission at California Fish and Game Commission, P.O. Box 944209, Sacramento, CA 94244-2090, or by e-mail at fgc@fgc.ca.gov.

If you have any questions or require further assistance, please contact Ms. Debbie Noriega, of my staff, at the letterhead address, by telephone at (916) 928-5817, or e-mail Debbie.Noriega@wildlife.c.a.gov.

Sincerely,

James Fong, chief
License and Revenue Branch

cc: Mr. Mike Yuan
Fish and Game Commission
Sacramento, California

Ms. Debbie Noriega
Department of Fish and Wildlife
Sacramento, California

To: Fish & Game Commission

P. O. Box 944209

Sacramento, CA 94244-2090

January 8, 2018

From: Louis J. Ferrari

Subject: Request to have my Non-Transferable North-Central Nearshore Fisheries Permit converted to a Transferable North-Central Nearshore Fisheries Permit.

Background and Justification:

I previously submitted this request to the Department of Fish and Wildlife, hoping the Department would be able to correct the mistake they made when they originally issued me a Nearshore Permit. The Department has declined to do so and referred me to the Fish & Game Commission. I am hereby exercising my right to appeal to the Commission the Department's decision to not correct this error.

Prior to Nearshore Fisheries becoming limited entry I had commercially fished for and landed thousands of pounds of Nearshore fish. The problem is that during the Nearshore Fisheries Permit qualification period 1994 to 2001 the Commercial Fish Buyers were not required by law to separate nearshore fish species from other rockfish species and therefore just put on the Landing Receipt all nearshore fish that they were paying the same price for, as "Bolina" rockfish. The same thing happened with my many pounds of Cabazon landings. All Cabezon were thrown in with and recorded as Lingcod. Bolina (brown) Rockfish and Lingcod were not listed as Nearshore Species, so when I applied for my initial Nearshore Fishery Permit, I was denied because the Department of Fish & Game Commercial Fish Landing data did not show that I had landed at least 500

pounds of nearshore fish pursuant to CCR Title 14 Section 150(d)(2)(A). I appealed the denial and was again told the Department did not have landing data to show that I would have enough qualified landings for a Transferable Nearshore Fishery Permit. I was however, issued a Non-Transferable Nearshore Fishery Permit pursuant to CCR Title 14 Section 150(e)(2)(B).

Even though I felt at the time that I was unjustly being denied a Transferable Nearshore Fishery Permit, there was nothing I could do about it, because all I had were Landing Receipts that only showed Bolina Rockfish and Lingcod. The reason for my request now to change my Non-transferable Nearshore Fishery Permit to a Transferable Nearshore Fishery Permit is that it has come to my attention the Department did, at the time of my permit denial, possess data that would have shown that I had sufficient landings of qualifying Nearshore Species during the qualification period of 1994-2001. This data was not available to me at the time and evidently was not available to the persons who were reviewing my permit application and appeal. Knowing that many different species of rockfish were being grouped on landing receipts as Unspecified Rockfish, Bolina Rockfish, Red Rockfish, and Gopher Rockfish, Department biologists did a census of what percentage of individual species of rockfish were being landed under one of the above groups. For instance in 1994, fish being recorded on Landing Receipts as Bolina rockfish actually included: Blue rockfish, Black rockfish, Brown rockfish, Black-and-Yellow rockfish, Cabezon, China rockfish, Copper rockfish, Gopher rockfish, Grass rockfish and Quillback rockfish. Based on Department of Fish & Wildlife data and the percentage of nearshore fish landed as Bolina rockfish on Landing Receipts I had 3,353 pounds of Nearshore fish (not including cabezon landed as lingcod) landed in 1994, 1,490 pounds of Nearshore fish in 1995 and 921 pounds in 1996. All this information is currently available to Department Personnel in the Commercial Fisheries Data Base.

If Department personnel who were reviewing permit qualifications had access to this information at the time, then I would have easily qualified for a Transferable Nearshore Fishery Permit. Therefore, I respectfully request this error be corrected by converting my Non-Transferable North-Central Nearshore Fishery Permit to a Transferable Nearshore Fishery Permit.

Sincerely,

Louis J. Ferrari

Yaun, Michael@FGC

From: Lou Ferrari
Sent: Friday, April 5, 2019 12:21 PM
To: FGC
Cc: Yaun, Michael@FGC
Subject: Change of date request for Case No. 18ALJ11-FGC Louis Ferrari

I, Louis Ferrari, would like to request a change of date and venue for my appeal regarding the transferability of my nearshore fisheries permit. I wish to attend the Commission Meeting and speak on my behalf prior to the Executive Session, however because of recent health issues I will not be able to attend the April 17 Commission Meeting in Santa Monica. I would wish for you to please change my Case to the June 12-13 Commission Meeting in Redding. Please let me know if this may be accommodated. If the June Meeting does not work I would also be able to make the August 7-8 meeting in Sacramento.

Louis Ferrari

State of California
Fish and Game Commission
P.O. Box 944209
Sacramento, Ca. 94244-2090

May 30, 2018

Dear Sir,

For the past few decades my family has relied on this SVP for our income. I realize my application to renew my license was very late. I explained that it was a very stressful time for me as I was ill and had relied heavily on my wife to handle my administrative needs while I was convalescing from illness.

The filing process was over looked unfortunately, I cannot apologize enough for the tardiness and am depending on your leniency just this once to reconsider my reinstatement. I understand additional fees will apply and will gladly pay any additional amounts due to have my SVP reinstated.

Respectfully yours,

Peter Aliotti

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Certified Mail

May 1, 2018

Mr. Peter Aliotti

Subject: **NOTICE OF DENIAL FOR REINSTATEMENT OF SALMON VESSEL PERMIT, PERMIT NUMBER SA0179**

Dear Mr. Aliotti:

This is in response to your request to reinstate the Salmon Vessel Permit (SVP), Permit Number SA0179, for the F/V *Reel Knotty* (FG70816).

Authority-Salmon Vessel Permit
Fish and Game Code (FGC) Section 8235(a) states that the owner of a permitted vessel, or that owner's agent, may apply for renewal of the permit annually on or before April 30, upon payment of the fees without penalty. Upon receipt of the application and fees, the Department of Fish and Wildlife ("Department") shall issue the permit for use of the permitted vessel in the subsequent permit year only to the owner of the permitted vessel.

Authority-Late Renewal Applications
FGC Section 7582.2, subdivision (a) establishes a graduated late fee for any renewal application that is received after the deadline.

In addition, FGC Section 7852.2(b) states the Department shall not waive the applicable late fee. Pursuant to FGC Section 7852.2(c), the Department shall deny any application for renewal received after March 31 of the permit year following the year in which the applicant last held a valid permit for that fishery.

Reason for Appeal to the Department
In your letter dated April 2, 2018, received on April 19, 2018, you are requesting reinstatement of the SVP for the F/V *Reel Knotty*. You explain that fishing this permit has been a very important part of providing for your family. You state that last year you did not fish because you were ill. After rehabilitation, you went to Alaska to fish. When you came back to fish the salmon season, you found that your wife had not renewed the permit. This was a mistake and you are asking to have your permit reinstated.

Department Findings
Department license records show that the F/V *Reel Knotty* held a valid 2016-2017 SVP, which made you eligible to renew the permit for the 2017-2018 permit year.

Department's Determination
Based on the previously stated information, your request to reinstate the SVP for the F/V *Reel Knotty* is denied, because the F/V *Reel Knotty* last held a valid SVP in the 2016-2017 permit year. The Department received the request to renew the SVP on April 19, 2018. FCG Section 7852.2(c) requires the Department to deny any application for renewal received after March 31 of the permit year following the year in which the applicant last held a valid permit for that fishery.

Deadline to File an Appeal to the Fish and Game Commission
If you wish to appeal the Department's decision, you must submit a written request to the Fish and Game Commission ("Commission") at P.O. Box 944209, Sacramento, CA 94244-2090, or you can request an appeal by emailing the Commission at fgc@fgc.ca.gov. Pursuant to FGC Section 7852.2(d), your appeal must be received within 60 days of the date of this letter. The Commission, upon consideration of the appeal, may grant the renewal of the SVP. If the Commission grants the renewal, it shall assess the applicable late fee.

The Commission will review the information you submit and will notify you in writing if your appeal will be scheduled before the Office of Administrative Hearings. If the Commission should recommend approval, full payment of $1,630.70 would be due. A fee schedule is enclosed.

If you have any questions or require further assistance, please contact Ms. Ruth Flores at (916) 928-7470 or Ruth.Flores@wildlife.ca.gov.

Sincerely,

Joshua Morgan, Chief
License and Revenue Branch

Enclosure

cc: Mr. Michael Yaun
Fish and Game Commission
Sacramento, CA

Ms. Ruth Flores
California Department of Fish and Wildlife
Sacramento, CA

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Mr. Peter Aliotti
Fees Required for Reinstatement for a
Salmon Vessel Permit (SVP)
Permit Number SA0179
F/V *Reel Knotty* (FG70816)

Prior Year Fees	**Permit Fees**
2017-2018 Commercial Boat Registration	$ 357.00
SVP	$ 43.00
Late Fee (61 days to March 31, 2018)	$ 590.50
Prior Year Fees Due	**$ 990.50**

Prior year permit fees must be paid before a 2018-2019 SVP can be issued

Current Year Fees	
2018-2019 Commercial Fishing License	$ 141.11
Commercial Fishing Salmon Stamp	$ 87.55
Commercial Boat Registration	$ 367.25
SVP	$ 44.29
Total Current Fees Due	**$ 640.20**
Total Fees Due	**$ 1,630.70**

If the Fish and Game Commission should recommend approval, full payment of $1,630.70 would be due.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Office of the General Counsel
P.O. Box 944209
Sacramento, CA 94244-2090
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

March 21, 2019

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Re: *In the Matter of Peter Aliotti*

Dear Commissioners:

This letter is in response to Peter Aliotti's request to appeal the Department of Fish and Wildlife's ("Department") denial of his request to renew his salmon vessel permit #SA0179 ("SVP"). Mr. Aliotti submitted a timely appeal request to the Fish and Game Commission ("Commission"). His SVP was last valid during the 2016-17 fishing year. The Department will not be participating in this appeal and accordingly, does not object to the renewal of his SVP for the 2019-2020 fishing year, provided that he pays all applicable fees.

The fees that Mr. Aliotti must pay to renew his SVP are described in Fish and Game Code, section 7852.2 ("Section 7852.2"), subdivision (a). Section 7852.2, subdivision (a) states:

> (a) In addition to the base fee for the license, stamp, permit, or other entitlement, the department shall assess a late fee for any renewal the application for which is received after the deadline, according to the following schedule:
> (1) One to 30 days after the deadline, a fee of one hundred twenty-five dollars ($125).
> (2) Thirty-one to 60 days after the deadline, a fee of two hundred fifty dollars ($250).
> (3) Sixty-one days or more after the deadline, a fee of five hundred dollars ($500).

To emphasize that these fees must be paid, Section 7852.2, subdivision (b) states that "The department shall not waive the applicable late fee," while subdivision (d) states "If the commission grants renewal, it shall assess the applicable late fee pursuant to subdivision (a)." The fees total **$2,288.84** and are described in the attached fee statement. The renewal might make Mr. Aliotti eligible to receive salmon disaster relief funds, should any funds become available in the future.

If you have any questions please contact me at the address above or by telephone number (916) 651-7646, or e-mail at David.Kiene@wildlife.ca.gov.

Sincerely,

DAVID KIENE
Senior Staff Counsel

Cc: Peter Aliotti

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Mr. Peter Aliotti
Fees Required for Reinstatement for a
Salmon Vessel Permit (SVP)
Permit Number SA0179
F/V *Reel Knotty* (FG70816)

Prior Year Fees		**Permit Fees**
2017-2018	Commercial Boat Registration	$ 357.00
	SVP	$ 43.00
	Late Fee (61 days to March 31, 2018)	$ 590.50
2018-2019	Commercial Fishing License	$ 141.11
	Commercial Fishing Salmon Stamp	$ 87.55
	Commercial Boat Registration	$ 367.25
	SVP	$ 44.29
Prior Year Fees Due		**$ 1,630.70**

Prior year permit fees must be paid before a 2019-2020 SVP can be issued

Current Year Fees		
2019-2020	Commercial Fishing License	$ 145.75
	Commercial Fishing Salmon Stamp	$ 87.55
	Commercial Boat Registration	$ 379.00
	SVP	$ 45.84
Total Current Fees Due		**$ 658.14**
Total Fees Due		**$ 2,288.84**

If the Fish and Game Commission should recommend approval, full payment of $2,288.84 would be due.

From: Noriega, Debbie@Wildlife
Sent: Wednesday, October 3, 2018 3:47 PM
To: FGC <FGC@fgc.ca.gov>
Subject: FW: DFG_Request_Escobar.pdf

Per Mr. Escobar's request.

From: Steve Escobar
Sent: Wednesday, October 3, 2018 12:13 PM
To: Noriega, Debbie@Wildlife <Debbie.Noriega@wildlife.ca.gov>
Subject: DFG_Request_Escobar.pdf

Hi Debbie,
Here is the appeal that I prepared. Please forward it on to the commission for their review and decision.
Thanks,
Steve Escobar

Sent from my iPhone

State of California Department of Fish and Wildlife Commission

Dear Commissioners,

The reason for this letter is to make an appeal for the reinstatement of my South Coast Nearshore Trap endorsement (SCRNFGE) Permit # TST029 (L73658).

For over 2 decades I have been renewing my commercial fishing permits through the regional offices of the California Department of Fish and Game. Many times, during those visits to the office, I would purchase almost 10 separate permits. At those visits I would deal with the DFG employee at the front desk. For many years, I would know that person on a first name basis and even know a little about their family and personal interests. Not only was this a pleasant way of doing business, but the DFG representative was knowledgeable and informed, and knew which permits I was supposed to purchase. Indeed, many times they would remind me to renew certain permits not on my radar for that day's visit.

Starting in the 2015-2016 season, the Department decided to utilize the License Agent Program, which uses independent retail stores to sell license renewals to commercial fishermen. This program has worked in many ways, and while I understand the efficiencies of this, there are downsides. One of these is that the new License Agents are not as knowledgeable, seem to have had limited training and are sometimes not as informed as the DFG employees. For instance, this year when renewing my Nearshore Trap Endorsement, I was told by the clerk that all I needed was my general trap permit to trap fish with my nearshore permit. Knowing this was incorrect, we ended up having a long and arduous discussion before this was corrected and resolved. I recall the same type of situation in March of 2015.

Regarding the SCRNFGE, I was under the impression that I have always possessed the Trap Endorsement (as it was a very expensive Permit that I purchased many years ago, and inexpensive to renew each year), and I had no intention of letting this permit go inactive and thus, loose it. This simply fell through the cracks of this new system.

I am willing to pay the past permit fees of $434.15 and late fees of $1,768.50, totaling $2,091.67 as recommended by the Department to be able to reinstate this permit. I also agree to pay $110.98 for the 2018-2019 Trap Endorsement Permit and the $590.50 late fee for being over 60 days late this year.

I ask that you please consider and approve the above request.

Sincerely

Steve Escobar

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Certified Mail

August 9, 2018

Mr. Steve T. Escobar

Subject: **NOTICE OF DENIAL FOR REINSTATMENT OF SOUTH COAST REGION NEARSHORE FISHERY GEAR ENDORSEMENT**

Dear Mr. Escobar:

This letter is in response to your request to renew your South Coast Region Nearshore Fishery Gear Endorsement (SCRNFGE), Permit Number TST029 (L73658).

Authority-Nearshore Fishery Gear Endorsement
Pursuant to Section 150.03(f), Title 14 of the California Code of Regulations (CCR), nearshore fishery gear endorsement (NFGE) holders must have held a valid permit in the immediately preceding permit year. Pursuant to Section 150.02(g), Title 14, of the CCR, renewals of a NFGE must be received by the Department of Fish and Wildlife (Department), or if mailed, postmarked on or before April 30 of each permit year.

Authority-Late Renewal Applications
Fish and Game Code (FGC) Section 7582.2, subdivision (a) establishes a graduated late fee for any renewal application that is received after the deadline.

In addition, FGC Section 7852.2(b) states the Department shall not waive the applicable late fee. Pursuant to FGC Section 7852.2(c), the Department shall deny any application for renewal received after March 31 of the permit year following the year in which the applicant last held a valid permit for that fishery.

Reason for Appeal to the Department
In your letter you requested reinstatement of your SCRNFGE. You explained that you overlooked renewing your SCRNFGE for the 2015-2016 permit year and subsequent years. You are asking to reinstate your SCRNFGE, so you can continue to catch nearshore fish with traps.

Department Findings
Department license records show that you last held a valid 2014-2015 SCRNFGE, which made you eligible to renew your permit for the 2015-2016 permit year.

Department's Determination
Based on the previously stated information, your request to reinstate your SCRNFGE is denied because you last held a valid SCRNFGE in the 2014-2015 permit year. As previously stated, FGC Section 7852.2(c) requires the Department to deny any application for renewal received after March 31 of the permit year following the year in which the applicant last held a valid permit for the fishery.

Deadline to File an Appeal to the Fish and Game Commission
If you wish to appeal the Department's decision, you must submit a written appeal to the Fish and Game Commission (Commission) either by mail at P.O. Box 944209, Sacramento, CA 94244-2090, or by email at fgc@fgc.ca.gov. Pursuant to FGC Section 7852.2(d), your written appeal must be received within 60 days of the date of this letter. The Commission, upon consideration of the appeal, may grant the renewal of the SCRNFGE. If the Commission grants the renewal, it shall assess the applicable late fees, which amount to $2,202.65. A fee schedule is enclosed.

If you have any questions or require further assistance, please contact Ms. Debbie Noriega at (916) 928-5817 or Debbie.Noriega@wildlife.ca.gov.

Sincerely,

Joshua Morgan, Chief
License and Revenue Branch

Enclosure

cc: Mr. Michael Yaun
Fish and Game Commission
Sacramento, California

Ms. Debbie Noriega
California Department of Fish and Wildlife
Sacramento, California

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Mr. Steve T. Escobar (L73658)
Fees Required for Reinstatement for a
South Coast Region Nearshore Fishery Gear Endorsement (SCRNFGE)
Permit Number TST029

Prior Year Fees		**Permit Fees**
2015-2016	South Coast Region Nearshore Fishery Gear Permit Endorsement	$107.64
	Late Fee (61 days to March 31, 2016)	$ 589.00
		$ 696.64
2016-2017	South Coast Region Nearshore Fishery Gear Permit Endorsement	$107.64
	Late Fee (61 days to March 31, 2017)	$ 589.00
		$ 696.64
2017-2018	South Coast Region Nearshore Fishery Gear Permit Endorsement	$107.89
	Late Fee (61 days to March 31, 2018)	$ 590.50
		$ 698.39

Prior Year Fees Due **$ 2,091.67**

Prior year permit fees must be paid before a 2018-2019 SCRNFGE can be issued.

Current Year Fees

2018-2019	South Coast Region Nearshore Fishery Gear Permit Endorsement	$ 110.98

Total Current Fees Due **$ 110.98**
Total Fees Due **$ 2,091.67**

If the Fish and Game Commission should recommend approval, full payment of $2,202.65 would be due.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Office of the General Counsel
P.O. Box 944209
Sacramento, CA 94244-2090
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

March 21, 2019

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Re: *In the Matter of Steve Escobar*

Dear Commissioners:

This letter is in response to Steve Escobar's request to appeal the Department of Fish and Wildlife's ("Department") denial of his request to renew his South Coast Region Nearshore Fishery Gear Endorsement, # TST029 ("SCRNFGE"). His SCRNFGE was last valid during the 2014-15 fishing year. The Department will not be participating in this appeal and accordingly, does not object to the renewal of his SCRNFGE for the 2019-2020 fishing year, provided that he pays all applicable fees.

The fees that Mr. Escobar must pay to renew his SCRNFGE are described in Fish and Game Code, section 7852.2 ("Section 7852.2"), subdivision (a). Section 7852.2, subdivision (a) states:

> (a) In addition to the base fee for the license, stamp, permit, or other entitlement, the department shall assess a late fee for any renewal the application for which is received after the deadline, according to the following schedule:
> (1) One to 30 days after the deadline, a fee of one hundred twenty-five dollars ($125).
> (2) Thirty-one to 60 days after the deadline, a fee of two hundred fifty dollars ($250).
> (3) Sixty-one days or more after the deadline, a fee of five hundred dollars ($500).

To emphasize that these fees must be paid, Section 7852.2, subdivision (b) states that "The department shall not waive the applicable late fee," while subdivision (d) states "If the commission grants renewal, it shall assess the applicable late fee pursuant to subdivision (a)." The fees total **$2,462.99** and are described in the attached fee statement.

If you have any questions please contact me at the address above or by telephone number (916) 651-7646, or e-mail at David.Kiene@wildlife.ca.gov.

Sincerely,

DAVID KIENE
Senior Staff Counsel

Cc: Steve Escobar

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
License and Revenue Branch
1740 N. Market Blvd.
Sacramento, CA 95834
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Mr. Steve T. Escobar (L73658)
Fees Required for Reinstatement for a
South Coast Region Nearshore Fishery Gear Endorsement (SCRNFGE)
Permit Number TST029

Prior Year Fees		**Permit Fees**
2015-2016	South Coast Region Nearshore Fishery Gear Permit Endorsement	$107.64
	Late Fee (61 days to March 31, 2016)	$ 589.00
		$ 696.64
2016-2017	South Coast Region Nearshore Fishery Gear Permit Endorsement	$107.64
	Late Fee (61 days to March 31, 2017)	$ 589.00
		$ 696.64
2017-2018	South Coast Region Nearshore Fishery Gear Permit Endorsement	$107.89
	Late Fee (61 days to March 31, 2018)	$ 590.50
		$ 698.39
2018-2019	South Coast Region Nearshore Fishery Gear Permit Endorsement	$ 110.98
		$ 110.98
Prior Year Fees Due		**$ 2,202.65**

Prior year permit fees must be paid before a 2019-2020 SCRNFGE can be issued.

Current Year Fees		
2019-2020	Resident Commercial Fishing License	$ 145.75
	South Coast Region Nearshore Fishery Gear Permit Endorsement	$ 114.59
Total Current Fees Due		**$ 260.34**
Total Fees Due		**$ 2,462.99**

If the Fish and Game Commission should recommend approval, full payment of $2,462.99 would be due.

STEFFANIE MELLO
SENIOR STAFF COUNSEL
DEPARTMENT OF FISH AND WILDLIFE
P.O. Box 944209
SACRAMENTO, CA 94244-2090
(916) 654-3826
(916) 654-3805 (fax)
e-mail: Steffanie.Mello@wildlife.ca.gov
State Bar No. 276819

OFFICE OF ADMINISTRATIVE HEARINGS
BEFORE THE FISH AND GAME COMMISSION

In the Matter of the Accusation Against SHAN XIANG XUE, Respondent.	ACCUSATION

PARTIES

1. David Bess ("Complainant") is the Chief of the Law Enforcement Division for the Department of Fish and Wildlife ("Department") and brings this Accusation solely in his official capacity.
2. On or about April 6, 2018, the Department renewed a Sport Fishing License ("License") issued to Respondent, Shan Xiang Xue. The License has been in full force and effect at all times relevant in this Accusation.

JURISDICTION

3. This Accusation is brought before the Fish and Game Commission ("Commission") under

the authority of the following laws.

4. Fish and Game Code section 86, which states:

"Take" means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.

5. Fish and Game Code section 2000 ("Section 2000"), which states:

It is unlawful to take any bird, mammal, fish, reptile, or amphibian except as provided in this code or regulations made pursuant thereto. Possession of a bird, mammal, fish, or reptile or parts thereof in or on the fields, forests, or waters of this state, or while returning therefrom with fishing or hunting equipment is prima facie evidence the possessor took the bird, mammal, fish or reptile or parts thereof.

6. Fish and Game Code section 2002 ("Section 2002"), which states:

It is unlawful to possess any bird, mammal, fish, reptile, or amphibian, or parts thereof, taken in violation of any of the provisions of this code, or of any regulation made under it.

7. Fish and Game Code section 2012 ("Section 2012"), which states:

All licenses, tags, and the birds, mammals, fish, reptiles, or amphibians taken or otherwise dealt with under this code, and any device or apparatus designed to be, and capable of being, used to take birds, mammals, fish, reptiles, or amphibians shall be exhibited upon demand to any person authorized by the department to enforce this code or any law relating to the protection and conservation of birds, mammals, fish, reptiles, or amphibians.

8. Fish and Game Code section 12158.5 ("Section 12158.5"), which states:

For the purpose of invoking any provision of this code, or any rule, regulation, or order made or adopted under this code, relating to the suspension, revocation, or forfeiture of any license or permit, a plea of *nolo contendere* or "no contest" to, or forfeiture of bail from, a charge of a violation of any provision of this code, or any rule, regulation, or order made or adopted under this code, is a conviction of a violation thereof.

9. California Code of Regulations, Title 14, section 29.25 ("Section 29.25"), which states:

Limit: Ten of each species, except in Humboldt Bay the limit is fifty in combination; however, no more than 25 gaper clams may be taken or possessed. In Elkhorn Slough the limit is twelve in combination. All gaper clams and Washington clams dug, regardless of size or broken condition, must be retained until the bag limit is reached. For purposes of this section, clams commonly terms horse clams or horseneck clams are gaper clams, not geoduck clams regulated pursuant to Section 29.30, Title 14, CCR.

10. California Code of Regulations, Title 14, section 745.5, which states in part:

(a) The commission may suspend or revoke a person's hunting or sport fishing license or permit privileges, provided that:

(1) In a court of law the person is convicted of a violation of any provision of the Fish and Game Code; any provision of these regulations; or any other provision of law intended to protect fish and wildlife of the State of California; and

(2) The commission complies with the procedures set forth in Section 746 of these regulations;

(3) The hearing officer determines the person committed the offense intentionally, knowingly, or recklessly.

11. California Code of Regulations, Title 14, section 746, which states in part:

Except where revocation, suspension, transfer, reinstatement or waiver of renewal requirement procedures are specifically provided for by the Fish and Game Code or regulations made pursuant thereto, the commission, pursuant to the provisions of Section 309 of the Fish and Game Code, shall comply with the following minimum safeguards to afford each applicant, licensee or permittee procedural and substantive due process when the commission considers revocation, suspension, transfer, reinstatement or waiver of renewal requirements for a license or permit including hunting and sport fishing license or permit privileges.

(a) In the case where the applicant, licensee or permittee has already been convicted of a violation of the Fish and Game Code or any regulation pertaining to the activity licensed or permitted by said code, the commission shall comply with the following:

(1) The commission's president may appoint a commissioner, the commission's legal counsel, a former Executive Director of the commission, or a member of the State Bar of California with at least ten years' experience in the active practice of law and determined qualified by the president, to serve as a hearing officer.

(2) The hearing shall be held at such time and location determined by the hearing officer with due consideration for the convenience of the parties and the ends of justice. The hearing officer may engage in exparte communications with the parties for the purpose of setting a time and place of hearing.

(3) The commission shall notify the applicant, licensee or permittee, by certified letter, of the commission's intent to consider the revocation or

suspension of his or her license or permit privileges. The certified letter shall include the following information:

(A) Name of applicant, licensee or permittee and last known address the Department of Fish and Game has on file.

(B) Date, time and place of scheduled hearing.

(C) Reason for potential commission action, including a statement as to the date and fact of conviction.

(D) A copy of Section 746, Title 14, California Code of Regulations.

(E) A statement that the applicant, licensee or permittee has the right to appear and to be represented by counsel.

(F) A statement that any continuance of the scheduled hearing date may be obtained only through compliance with subsection (d) of Section 746, Title 14, California Code of Regulations.

(4) The proceedings of the hearing shall be recorded by a court reporter or an electronic tape recording system.

(5) The hearing shall be conducted by the hearing officer who shall control the nature and order of the proceedings.

(6) At the hearing, the hearing officer shall read the conviction documents. The department shall provide the hearing officer with the background information regarding the violation and conviction and shall submit into the record a copy of a document which includes the facts of the conviction of a violation of regulation or statute.

(7) The applicant, licensee or permittee shall make his or her statement regarding the violation and conviction, and may argue that extenuating circumstances were such as to not warrant the loss of his or her license or permit privileges.

(8) The hearing officer may examine any party or witness.

(9) Within 30 days of the conclusion of the hearing, the hearing officer shall prepare and submit to the executive director a proposed decision which shall include proposed findings or reasons for the commission's action.

(10) Upon receipt of the proposed decision, the commission shall provide counsel or, if appearing pro se, the applicant, licensee or permittee, by certified mail, a copy of the hearing officer's proposed decision.

(11) At a meeting of the commission, no later than 60 days following receipt of the hearing officer's proposed decision, the commission shall consider adoption of the proposed decision. The commission may by order adopt, revise or reject the proposed decision. The commission shall serve counsel or, if appearing pro se, the applicant, licensee or permittee, by certified mail, a copy of the commission's order and decision. The order is final.

(12) The applicant, licensee or permittee may request judicial review by filing a petition for writ of mandate in accordance with provisions of the Code of Civil Procedure within 30 days from the date of service (postmark) of the order. The record of the proceedings as designated by the petitioner shall be prepared by the commission and delivered to petitioner's counsel or, if appearing pro se, the petitioner within 30 days after petitioner's request and upon payment of the fee specified in Section 69950 of the Government Code.

FIRST CAUSE FOR DISCIPLINE

12. Respondent is subject to disciplinary action under Section 745.5(a) in that on or about April 28, 2017, in a criminal proceeding titled *People v. Shan Xiang Xue* in the Superior Court of California, County of Marin, Case Number CT17007216, Respondent met all of his obligations pursuant to the bail forfeiture related to the violation of Section 29.25, taking or possessing an over limit of gaper clams and Washington clams. This crime is substantially related to sport fishing. The circumstances are as follows:

a. On or about March 9, 2017, Respondent dug for clams with three other individuals. When the group was one clam over the legal limit, Respondent buried the clam into the sand by standing on it and shuffling his feet back and forth.

b. On or about April 28, 2017, bail was forfeited against Respondent for the infraction charge of violating Section 29.25.

SECOND CAUSE FOR DISCIPLINE

13. Respondent is subject to disciplinary action under Section 745.5(a) in that on or about May 12, 2016, in a criminal proceeding titled *People v. Shan Xiang Xue* in the Superior Court of California, County of Marin, Case Number CT16009380, Respondent met all of

his obligations pursuant to the bail forfeiture related to the violation of Section 29.25, taking or possessing an over limit of gaper clams and Washington clams. This crime is substantially related to sport fishing. The circumstances are as follows:

a. On or about April 4, 2016, Respondent took an over limit of gaper clams.

b. On or about May 12, 2016, bail was forfeited against Respondent for the infraction charge of violating Section 29.25

THIRD CAUSE FOR DISCIPLINE

14. Respondent is subject to disciplinary action under Section 745.5(a) in that on or about June 26, 2015, in a criminal proceeding titled *People v. Shan Xiang Xue* in the Superior Court of California, County of Marin, Case Number CT15014525, Respondent met all of his obligations pursuant to the bail forfeiture related to the violation of Section 29.25, taking or possessing an over limit of gaper clams and Washington clams. This crime is substantially related to sport fishing. The circumstances are as follows:

a. On or about May 18, 2015, Respondent took an over limit of gaper clams. Respondent assisted another member of his party with burying the clams they took over the legal limit.

b. On or about June 26, 2015, bail was forfeited against Respondent for the infraction charge of violating Section 29.25.

FOURTH CAUSE FOR DISCIPLINE

15. Respondent is subject to disciplinary action under Section 745.5(a) in that on or about January 21, 2015, in a criminal proceeding titled *People v. Shan Xiang Xue* in the Superior Court of California, County of Marin, Case Number CT14028014, Respondent was found guilty of a violation of Section 29.25, taking or possessing an over limit of gaper clams and Washington clams. This crime is substantially related to sport fishing. The circumstances are as follows:

a. On or about September 8, 2014, Respondent took an over limit of gaper clams. Respondent buried some of the over limit clams. Respondent processed additional over limit clams and concealed them.

b. On or about January 21, 2015, a court trial was held wherein Respondent was found guilty of a violation of Section 29.25. Respondent was ordered to pay fines, assessments and fees of $3,616.00.

PRAYER

WHEREFORE, Complainant prays that a hearing be held on the charges and that thereafter the Fish and Game Commission issues a decision:

(1) Suspending Shan Xiang Xue's Sport Fishing License privilege for a period of 20 years.

(2) Taking such other and further action as may be deemed just and proper.

Dated this 18 day of September, 2018

FOR

DAVID BESS,
COMPLAINANT
CHIEF, LAW ENFORCEMENT DIVISION

VERIFICATION

I, David Bess, the undersigned, say:

I am a party to this action; the above document is true of my own knowledge, except as to the matters that are stated in it on my information and belief, and as to those matters I believe it to be true.

I declare under penalty of perjury that the above is true and correct and that this declaration was executed on September 18, 2018, at 1416 Ninth St., Sacramento, CA 95814.

Date: 9/18/18

[signature] FOR
DAVID BESS
Declarant

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
P.O. Box 944209
Sacramento, CA 94244-2090
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

March 21, 2019

California Fish and Game Commission
1416 Ninth Street, Room 1320
Sacramento, CA 95814

Subject: Suspension of Shan Xiang Xue's sport fishing privileges

Dear Commissioners:

Pursuant to Government Code, section 11520, subdivision (a) ("Section 11520(a)"),[1] the Department is requesting that the Fish and Game Commission ("Commission") suspend Shan Xiang Xue's sport fishing privileges for a period of 20 years at its April 17, 2019 meeting, without holding a hearing on the matter.

The Commission may suspend Mr. Xue's sport fishing privileges at its April 17 meeting because Mr. Xue has waived his right to a hearing. On January 26, 2019, the Department personally served Mr. Xue with the accusation. (Exhibit 1.) Mr. Xue declined to file a Notice of Defense requesting a hearing within 15 days of receiving the accusation, i.e., by February 10, 2019, as required pursuant to Government Code section 11506, subdivision (a)(1).[2] Accordingly, Mr. Xue has waived his right to a hearing. Instead, the commission may suspend his Commercial Privileges based upon his express admissions or other evidence at its April 17 meeting.

As described in the accusation and the attached exhibits submitted as uncontroverted evidence of the violations, Mr. Xue has committed multiple violations of regulations adopted pursuant to the Fish and Game Code. These violations include:

- On or about March 9, 2017, Mr. Xue took and possessed an over limit of gaper clams and Washington clams, and failed to retain one of the clams, in violation of California Code of Regulations, title 14, section 29.25 ("Section 29.25").[3] Mr. Xue dug for clams with three other individuals. The combined limits for all four fishers was one clam over the legal limit, so Mr. Xue hid the extra clam by burying it in the sand by standing on it and

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[1] Section 11520 (a) states in part, "If the respondent either fails to file a notice of defense, or, as applicable, notice of participation, or to appear at the hearing, the agency may take action based upon the respondent's express admissions or upon other evidence and affidavits may be used as evidence without any notice to respondent…"

[2] Government Code, section 11506, subdivision (a)(1) states, "Within 15 days after service of the accusation or District Statement of Reduction in Force the respondent may file with the agency a notice of defense, or, as applicable, notice of participation, in which the respondent may: (1) Request a hearing."

[3] Section 29.25 states in part, "Limit: Ten of each species…All gaper clams and Washington clams dug, regardless of size or broken condition, must be retained until the bag limit is reached."

shuffling his feet back and forth. On or about April 28, 2017, Mr. Xue forfeited bail in a criminal proceeding related to this violation.[4] (Exhibit 2.)

- On or about April 4, 2016, Mr. Xue failed to retain three gaper clams that he took, in violation of Section 29.25. By discarding those three clams, he was likely attempting to show that the total number of clams kept by he and another fisher complied with combined individual limits. On or about May 12, 2016, Mr. Xue forfeited bail in a criminal proceeding related to this violation. (Exhibit 3.)
- On or about May 18, 2015, Mr. Xue took an over limit of 12 gaper clams, and failed to retain seven clams, in violation of Section 29.25. On or about June 26, 2015, Mr. Xue forfeited bail in a criminal proceeding related to this violation. (Exhibit 4.)
- On or about September 8, 2014, Mr. Xue took an over limit of gaper clams, and then processed and concealed some of the extra clams so the remaining intact clams would appear to comply with the bag limit. On or about January 21, 2015, Mr. Xue was found guilty of violating Section 29.25. (Exhibit 5.)

In sum, Mr. Xue's four convictions for the same violation—Section 29.25--have neither deterred him nor adequately protected fishery resources. Not only has Mr. Xue repeatedly violated, he attempted to hide his violations by concealing over limit clams. Thus, Mr. Xue has shown that he cannot be trusted to follow sport fishing laws. To prevent further unlawful conduct and abuse of fishery resources, the Department respectfully requests that the Commission suspend Mr. Xue's sport fishing license privileges for a period of 20 years.

If you have any questions, please do not hesitate to contact Senior Staff Counsel David Kiene by mail at 1416 9th St., 12th Floor, Sacramento, CA 95814, telephone number at (916) 651-7646, or e-mail at David.Kiene@wildlife.ca.gov.

Sincerely,

DAVID BESS
Chief, Law Enforcement Division

Cc: Shan Xiang Xue

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[4] Fish and Game Code section 12158.5 ("Section 12158.5") states, "For the purpose of invoking any provision of this code, or any rule, regulation, or order made or adopted under this code, relating to the suspension, revocation, or forfeiture of any license or permit, a plea of nolo contendere or 'no contest' to, or **forfeiture of bail** from, a charge of a violation of any provision of this code, or any rule, regulation, or order made or adopted under this code, **is a conviction of a violation thereof.**" (Emphasis added.)

Department Exhibit 1

Statement of Service

Federal and state laws require you to send or deliver a copy of this document to each of the named parties. Additionally, you must send or deliver a copy to the Office of Administrative Hearings. Retain a copy for yourself. Please indicate your compliance with this requirement by checking the appropriate box below.

I have provided a copy of the Accusation document to all the named parties and to the Office of Administrative Hearings by:

☐ Email to:

☐ First Class Mail

Provide the name and address of each person or educational agency served:

☐ Facsimile Transmission

Provide the name and address of each person or educational agency served:

☐ Messenger Service (UPS, FedEx, other courier service) Please attach proof of service.

Provide the name and address of each person or educational agency served:

☑ Personal Delivery (If other than requestor please name person who made service)

Name of person who made personal delivery: Ryan McCoy

Provide the name and address of each person or educational agency served:

Shan Xiang Xue
[redacted]

Print name of person completing this Statement	Signature	Date of Service
Ryan McCoy	Ryan McCoy	1/26/19

Department Exhibit 2

Superior Court of California, County of Marin
Docket

Last Activity Date: 4/28/2017

Case Number: CT17007216 Status: Disposed

People vs. Xue, Shan Xiang

Address: [redacted]
United States

Case Balance Due: $0.00 In Trust: $0.00

Citing Officer(s): Swaney

Jurisdiction: Marin County

Charges, Pleas and Dispositions:

Count	Code/Section	Description	Severity	Plea	Disposition
1	CCR 14.29.25	Gaper Clams and Washington Clams	I		Bail Forfeiture

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Alerts:

04/28/2017 12:45 PM

-- All defendant obligations have been met.

THIS INSTRUMENT IS A CORRECT COPY OF THE ORIGINAL ON FILE IN THIS OFFICE

MAR - 5 2018

Attest: KIM TURNER, Court Executive Officer
MARIN COUNTY SUPERIOR COURT
By: J. Poole, Deputy

State of California – Department of Fish and Wildlife
NARRATIVE/SUPPLEMENTAL
ENF 6b (REV. 06/23/16) Previously WPD 6b

District: NCD

Date of Incident/Occurrence	Time (2400)	City/County/Judicial Jurisdiction
03/09/2017	1645 Hours	San Rafael/Marin/Marin Traffic Court

Select if applicable
☑ Narrative ☑ Arrest Report
☐ Supplemental ☐ Formal Complaint

Type of Report (select if applicable)
☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ Incident Report
☑ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐ Other

Location/Subject/Incident Name	Arresting/Case Officer	Citation Number
Lawson's Landing	J. Swaney #745	AD2040981, 82

Narrative:

On 03/09/2017 I was on uniformed patrol at Lawson's Landing during an evening low tide. I used high powered department issued optics to make observations on a group of four adult male anglers that were digging for clams on the tidally exposed island commonly known as Seal Island. The anglers arrived on the island aboard a green inflatable raft at approximately 1500 hours.

Upon exiting the raft, two of the four anglers separated slightly from the remainder of the group and remained separate throughout most of the time on the island. The two anglers later identified from California driver's license and California identification card as Jeffrey Xin and Shan Xiang Xue remained together while on the island and detailed observations were made on both anglers.

Xin and Xue assisted each other while digging for clams. The anglers shared a PVC clam tube and took turns removing sand from the same hole. A majority of the clams were physically removed from the bottom of each hole by Xin.

Xin was observed removing and retaining twelve gaper clams while on the island. Xue was observed removing and retaining nine gaper clams while on the island. The anglers placed the clams they retained into a blue, cloth, Walmart bag. Once the bag contained ten clams, the anglers placed the remaining clams into a second blue, cloth, Walmart bag. In total the anglers were observed retaining twenty one gaper clams.

Xin and Xue and a third angler returned to the raft around 1600 hours and began sorting their clams in the shallow water next to the raft. Xin dumped the contents of his blue, cloth bag into the shallow water and was observed returning ten gaper clams to the bag. Xue dumped the contents of his blue, cloth bag into the shallow water and was observed returning ten gaper clams to the bag. One additional gaper clam remained in the shallow water, which the third angler intentionally stepped on to push the clam into the sand. After securing his bag by tying the handles together, Xue stood and began standing on the extra clam, shuffling his feet back and forth in order to work the clam deeper into the sand. Xue did this for approximately one minute before placing his bag and equipment into the raft.

I contacted the anglers when they returned to the boat launch at Lawson's Landing, announcing my presence as "Warden Swaney with the Department of Fish and Wildlife." The anglers explained that all four of them possessed ten clams. All four anglers produced valid sport fishing licenses.

I recognized three of the anglers from a previous contact where the anglers had been cited for violations. I asked the anglers, "You know the clamming regulations, right?" The anglers replied, "Yes." I asked the anglers, "You've been cited before haven't you?" Xin replied, "Yes, you recognize us? We got tickets last year." I asked the anglers why they had failed to follow the regulations yet again.

I explained to the anglers that Xin had been observed removing twelve gaper clams from various holes. Xin explained that he thought he could assist other anglers in taking clams as long as the pair of them did not exceed twenty clams total. I informed Xin that each angler was required to take their own clams and each angler must cease taking gaper clams after the angler has removed ten. I informed Xue that he had been observed stomping an additional gaper clam into the sand before leaving the island. Xue later admitted that he had stomped one clam into the sand.

Both anglers were cited for California Title 14 section 29.25, taking an overlimit of gaper clams/failing to retain gaper clams. Xin was cited for taking two gaper clams over the limit of ten while Xue was cited for failing to retain one gaper clam. The twenty gaper clams in the anglers' possession were seized as evidence and photographed.

I later looked up the citing history for both anglers and found that Xin had been previously cited on 4/4/2016 for taking an overlimit of gaper clams.

I found that Xue had been previously cited three times since 09/08/2014 for taking an overlimit of gaper clams, making the citation on 03/09/2017 his fourth time for being cited for the same violation.

While working the low tide two days later, on 03/11/2017, Xue was again observed digging for clams at Lawson's Landing, but detailed observations were not made.

Preparer's Name and Badge Number	Date	Reviewer's name	Date
J. Swaney #745	03/12/2017		

Department Exhibit 3

Superior Court of California, County of Marin
Docket

Last Activity Date: 5/12/2016

Case Number: CT16009380 Status: Disposed

People vs. Xue, Shan Xiang

Address: [redacted]
United States

Case Balance Due: $0.00 In Trust: $0.00

Citing Officer(s): Mead, R

Jurisdiction: Marin County

Charges, Pleas and Dispositions:

Count	Code/Section	Description	Severity	Plea	Disposition
1	CCR 14.29.25	Gaper Clams and Washington Clams	I		Bail Forfeiture

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Alerts:

05/12/2016 09:50 PM

-- All defendant obligations have been met.

THIS INSTRUMENT IS A CORRECT COPY OF THE ORIGINAL ON FILE IN THIS OFFICE

MAR - 5 2018

Attest: Sandra Kim
~~KIM TURNER~~, Court Executive Officer
MARIN COUNTY SUPERIOR COURT
By: J. Poole, Deputy

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

ARREST/INVESTIGATION REPORT

ENF 6a (4-04)

Region # NCD Page 1 Of 3

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
04/04/16	17:10 hours	Marin County

"X" ONE	"X" ONE	TYPE OF REPORT ("X" APPLICABLE)
☒ Arrest Report	☒ Self Initiated	☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ CalTIP
☐ Formal Complaint	☐ Complaint	☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐ Other
		Other:

Suspect Information

Name Suspect #1 (First, Middle, Last)	Sex	Date of Birth (MM/DD/YY)	Citation Number
Jeffrey Xin			AD2030146

Suspect Address (Street, Apt, City, State, Zip Code)	Home Phone
Business Address (Street, Apt., City, State, Zip Code)	**Business Phone**

Identification Type ("X" APPLICABLE)	Suspect Description ("X" APPLICABLE)
☒ CDL/CID ☐ Other State DL/ID	General: Hair: Eyes: Ethnicity:
☐ Other ID: _____	Height:
Number:	Weight

Vehicle Type ("X" APPLICABLE)	Description (Make, Model, Year, Color)	License Plate Number/VIN
☐ Auto ☒ Vessel ☐ Other	raft	

Offenses and Charges

☐ F&G ☒ T-14 ☐ Other: _____ Section: 29.25 Description: take over limit gaper calms	☐ F&G ☐ T-14 ☐ Other: _____ Section: _____ Description:
☐ F&G ☐ T-14 ☐ Other: _____ Section: _____ Description:	☐ F&G ☐ T-14 ☐ Other: _____ Section: _____ Description:
☐ F&G ☐ T-14 ☐ Other: _____ Section: _____ Description:	☐ F&G ☐ T-14 ☐ Other: _____ Section: _____ Description:

Evidence Seized

Evidence Description (Amount, Type, Serial Number, etc.)	"X" ONE	Evidence Photographed?
(30) gaper clams, donated	☐ Held ☐ Returned ☐ Destroyed ☒ Other	☒ Yes ☐ No
Evidence Description (Amount, Type, Serial Number, etc.)	"X" ONE ☐ Held ☐ Returned ☐ Destroyed ☐ Other	Evidence Photographed? ☐ Yes ☐ No
Evidence Description (Amount, Type, Serial Number, etc.)	"X" ONE ☐ Held ☐ Returned ☐ Destroyed ☐ Other	Evidence Photographed? ☐ Yes ☐ No

Case Synopsis

On the above date and time I observed Mr. Xin, Mr. Xue and Mr. Lu take over limits and fail to retain gaper clams. The three men were cited for the violations. (see full report).

See ENF 6b For Additional Suspect and Witness Information "x" ONE ☒ Yes ☐ No

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
R. Mead , 398	04/11/16		

PROSECUTING AGENCY — (WHITE) REGION — (GOLDEN ROD) ADMINISTRATIVE USE — (GREEN) OFFICER — (BLUE)

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

SUPPLEMENTAL SUSPECT/WITNESS INFORMATION

FNE 6b (1-04) Region # NCD Page 2

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
04/04/16	17:10 hours	Marin County

Additional Suspect Information

Name Suspect #2 (First, Middle, Last)	Sex	Date of Birth (MM/DD/YY)	Citation Number
Shan Xiang Xue			AD2030147

Suspect Address (Street, Apt., City, State, Zip Code) — Home Phone

Business Address (Street, Apt., City, State, Zip Code) — Business Phone

Identification Type (*X"APPLICABLE)	Suspect Description (*X"APPLICABLE)
☒ CDL/CID ☐ Other State DL/ID	General: Hair: Eyes: Ethnicity:
☐ Other ID:	Height:
Number:	Weight:

Vehicle Type (*x"APPLICABLE)	Description (Make, Model, Year, Color)	License Plate Number/VIN
☐ Auto ☒ Vessel ☐ Other	see page one	

Name Suspect #3 (First, Middle, Last)	Sex	Date of Birth (MM/DD/YY)	Citation Number
Xin Li Lu			AD2030148

Suspect Address (Street, Apt., City, State, Zip Code) — Home Phone

Identification Type (*X"APPLICABLE)	Suspect Description (*X"APPLICABLE)
☒ CDL/CID ☐ Other State DL/ID	General: Hair: Eyes: Ethnicity:
☐ Other ID:	Height:
Number:	Weight:

Name Suspect #4 (First, Middle, Last)	Sex ☐ M ☐ F	Date of Birth (MM/DD/YY)	Citation Number

Suspect Address (Street, Apt., City, State, Zip Code) — Home Phone

Identification Type (*X"APPLICABLE)	Suspect Description ("X"APPLICABLE)			
☐ CDL/CID ☐ Other State DL/ID	General:	Hair:	Eyes:	Ethnicity:
☐ Other ID:	Height:	☐ Bln ☐ Blk ☐ Brn	☐ Blu ☐ Brn	☐ Asian ☐ Black ☐ Hispanic
Number:	Weight:	☐ Gry ☐ Red ☐ None	☐ Grn ☐ Hzl	☐ White ☐ Other:

Witness Information

Name Witness #1 (First, Middle, Last)	Sex	Date of Birth (MM/DD/YY)	Identification Number
J. Swaney			745

Witness Address (Street, Apt., City, State, Zip Code) — Home Phone

Name Witness #2 (First, Middle, Last)	Sex ☐ M ☐ F	Date of Birth (MM/DD/YY)	Identification Number

Witness Address (Street, Apt., City, State, Zip Code) — Home Phone

Name Witness #3 (First, Middle, Last)	Sex ☐ M ☐ F	Date of Birth (MM/DD/YY)	Identification Number

Witness Address (Street, Apt., City, State, Zip Code) — Home Phone

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
R. Mead, 398	04/11/16		

PROSECUTING AGENCY — (WHITE) REGION — (GOLDEN ROD) ADMINISTRATIVE USE — (GREEN) OFFICER — (BLUE)

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

NARRATIVE/SUPPLEMENTAL

ENF 6a p.2 (Rev 4-04) Region# NCD

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
04/04/16	17:10 hour	Marin County

'X' APPLICABLE
☐ Narrative ☒ Arrest Report
☐ Supplemental ☐ Formal Complaint

TYPE OF REPORT ('X' APPLICABLE)
☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ Incident Report
☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐ Other
Other:

Location/Subject/Incident Name	Arresting/Case Officer	Citation Number
Mr. Xin, Mr. Xue, Mr. Lu	R. Mead	see page 1,2

On the above date and time, Warden Swaney and I were working in the area of Lawson's Landing on Tomales Bay. I observed a group of four men cross the channel on a small raft to dig for gaper clams. The legal limit for gaper clams is ten. Individuals are required to retain the first ten clams they dig as their limit.

I observed Mr. Xin and Mr. Xue dig for gaper clams together for approximately two hours. I was using my State issued spotting scope from the sea wall. During this time I observed Mr. Xin dig a total of nineteen gaper clams. Of these clams, Mr. Xin high graded four. Mr. Xue dug and retained eight gaper clams. Of these clams he high graded a total of three clams.

The two men high graded the last clam at 16:35 hours just before leaving the island. At this time I also observed Mr. Lu dump a bucket on the ground and count ten clams back into it. Mr. Lu left one clam behind on the mud flats. After he walked away a seagull came in and took the clam.

Note: it is a common practice for fishermen to dig over limits of clams, then retain only the largest. This practice is illegal. Fishermen discard broken or small clams keeping only the largest for their limit.

The men returned to the sea wall on a small raft. I contacted Mr. Xin, Mr. Xue and Mr. Lu at this time. I told the three men I observed them take over limits and fail to retain gaper clams. I did not see the fourth individual in their group violate any regulations. Each person in the group had a limit of ten gaper clams and a valid fishing license. Mr. Xin Stated they did not waste any clams and only took ten each. Mr. Lu stated I was a "lying". I issued the three men citations for the violations.

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
R. Mead , 398	04/11/16		

Department Exhibit 4

Superior Court of California, County of Marin
Docket

Last Activity Date: 6/26/2017

Case Number: CT15014525 Status: Closed

People vs. Xue, Shan Xiang

Address:

Case Balance Due: $0.00 In Trust: $0.00

Citing Officer(s): Mead, R

Jurisdiction: Marin County

Charges, Pleas and Dispositions:

Count	Code/Section	Description	Severity	Plea	Disposition
1	CCR 14.29.25	Gaper Clams and Washington Clams	I		Bail Forfeiture

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Alerts:

06/26/2015 01:19 PM

-- All defendant obligations have been met.

THIS INSTRUMENT IS A CORRECT COPY OF THE ORIGINAL ON FILE IN THIS OFFICE

MAR - 5 2018

Attest: KIM TURNER, Court Executive Officer
MARIN COUNTY SUPERIOR COURT
By: J. Poole, Deputy

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

ARREST/INVESTIGATION REPORT

ENF 6a (4-04)

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
05/18/15	09:00 hours	Marin

"X" ONE	"X" ONE	TYPE OF REPORT ("X" APPLICABLE)
☒ Arrest Report	☒ Self Initiated	☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ CalTIP
☐ Formal Complaint	☐ Complaint	☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐ Other
		Other:

Suspect Information

Name Suspect #1 (First, Middle, Last)	Sex	Date of Birth (MM/DD/YY)	Citation Number
Shan Xiang Xue			AD2023851

Suspect Address (Street, Apt, City, State, Zip Code) — Home Phone

Business Address (Street, Apt., City, State, Zip Code) — Business Phone

Identification Type ("X" APPLICABLE)	Suspect Description ("X" APPLICABLE)
☒ CDL/CID ☐ Other State DL/ID	General: [redacted] Hair: Eyes: Ethnicity:
☐ Other ID:	Height:
Numbe	Weight:

Vehicle Type ("X" APPLICABLE)	Description (Make, Model, Year, Color)	License Plate Number/VIN
☐ Auto ☒ Vessel ☐ Other	raft	N/A

Offenses and Charges

☐ F&G ☒ T-14 ☐ Other: Section: Description: take over limit of gaper clams	☐ F&G ☐ T-14 ☐ Other: Section: Description:
☐ F&G ☐ T-14 ☐ Other: Section: Description:	☐ F&G ☐ T-14 ☐ Other: Section: Description:
☐ F&G ☐ T-14 ☐ Other: Section: Description:	☐ F&G ☐ T-14 ☐ Other: Section: Description:

Evidence Seized

Evidence Description (Amount, Type, Serial Number, etc.)	"X" ONE	Evidence Photographed?
(33) gaper clams, donated	☒ Held ☐ Returned ☐ Destroyed ☐ Other	☒ Yes ☐ No
Evidence Description (Amount, Type, Serial Number, etc.)	"X"ONE ☒ Held ☐ Returned ☐ Destroyed ☐ Other	Evidence Photographed? ☐ Yes ☐ No
Evidence Description (Amount, Type, Serial Number, etc.)	"X"ONE ☐ Held ☐ Returned ☐ Destroyed ☐ Other	Evidence Photographed? ☐ Yes ☐ No

Case Synopsis

On the above date and time, I contacted Mr. Xue and his daughter in law, Mrs. Lin at Lawson's Landing. Prior to my contact I observed Mr. Xue dig a total of (22) gaper clams. Mr. Xue also wasted and high graded (7) gaper clams. I observed Mrs. Lin discard and waste one extra gaper clam she and her husband dug before leaving the mud flats. I contacted Mr. Xue and Mrs. Lin as they returned to the landing. I issued both citations for taking over limits of gaper clams. (see full report).

See ENF 6b For Additional Suspect and Witness Information "x"ONE ☒ Yes ☐ No

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
R. Mead , 398	05/22/15		

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

SUPPLEMENTAL SUSPECT/WITNESS INFORMATION

ENF 6b (1-04) Region # NCD Page 2

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
05/18/15	09:00 hours	Marin

Additional Suspect Information

Name Suspect #2 (First, Middle, Last)	Sex	Date of Birth (MM/DD/YY)	Citation Number
Bi Jun Lin			AD2023850

Suspect Address (Street, Apt., City, State, Zip Code) — Home Phone

Business Address (Street, Apt., City, State, Zip Code) — Business Phone

Identification Type (*X"APPLICABLE)	Suspect Description (*X"APPLICABLE)
☒ CDL/CID ☐ Other State DL/ID	General: — Hair: Eyes: Ethnicity:
☐ Other ID:	Height:
Number:	Weight:

Vehicle Type (*X"APPLICABLE)	Description (Make, Model, Year, Color)	License Plate Number/VIN
☐ Auto ☒ Vessel ☐ Other	see page one	

Name Suspect #3 (First, Middle, Last)	Sex ☐ M ☐ F	Date of Birth (MM/DD/YY)	Citation Number

Suspect Address (Street, Apt., City, State, Zip Code) — Home Phone

Identification Type (*X"APPLICABLE)	Suspect Description (*X"APPLICABLE)
☐ CDL/CID ☐ Other State DL/ID	General: Hair: ☐ Bln ☐ Blk ☐ Brn ☐ Gry ☐ Red ☐ None Eyes: ☐ Blu ☐ Brn ☐ Grn ☐ Hzl Ethnicity: ☐ Asian ☐ Black ☐ Hispanic ☐ White ☐ Other:
☐ Other ID:	Height:
Number:	Weight:

Name Suspect #4 (First, Middle, Last)	Sex ☐ M ☐ F	Date of Birth (MM/DD/YY)	Citation Number

Suspect Address (Street, Apt., City, State, Zip Code) — Home Phone

Identification Type (*X"APPLICABLE)	Suspect Description ("X"APPLICABLE)
☐ CDL/CID ☐ Other State DL/ID	General: Hair: ☐ Bln ☐ Blk ☐ Brn ☐ Gry ☐ Red ☐ None Eyes: ☐ Blu ☐ Brn ☐ Grn ☐ Hzl Ethnicity: ☐ Asian ☐ Black ☐ Hispanic ☐ White ☐ Other:
☐ Other ID:	Height:
Number:	Weight:

Witness Information

Name Witness #1 (First, Middle, Last)	Sex ☐ M ☐ F	Date of Birth (MM/DD/YY)	Identification Number

Witness Address (Street, Apt., City, State, Zip Code) — Home Phone

Name Witness #2 (First, Middle, Last)	Sex ☐ M ☐ F	Date of Birth (MM/DD/YY)	Identification Number

Witness Address (Street, Apt., City, State, Zip Code) — Home Phone

Name Witness #3 (First, Middle, Last)	Sex ☐ M ☐ F	Date of Birth (MM/DD/YY)	Identification Number

Witness Address (Street, Apt., City, State, Zip Code) — Home Phone

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
R. Mead , 398	05/22/15		

PROSECUTING AGENCY — (WHITE) REGION — (GOLDEN ROD) ADMINISTRATIVE USE — (GREEN) OFFICER — (BLUE)

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

NARRATIVE/SUPPLEMENTAL

ENF 6a p.2 (Rev 4-04) Region# NCD

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
05/18/15	09:00 hours	Marin

*IF APPLICABLE	TYPE OF REPORT (*IF APPLICABLE)
☐ Narrative ☒ Arrest Report	☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ Incident Report
☐ Supplemental ☐ Formal Complaint	☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐ Other
	Other:

Location/Subject/Incident Name	Arresting/Case Officer	Citation Number
Mr. Xue, Mrs. Lin	R. Mead	AD2023851

I was located at Lawson's Landing, Tomales Bay. At Approximately 06:45 hours I observed a group of four individuals cross the channel to Seal Island on a low tide. One subject identified as Mr. Xue began to dig for gaper clams with his wife. Mr. Xue was digging the clams while his wife watched. From 06:45 hours to approximately 08:45 hours I documented Mr. Xue dig (22) gaper clams. Mr. Xue and his wife high graded and wasted a total of (7) gaper clams.

Note: the legal limit for gaper clams is (10) per person. Individuals are required to retain the first ten gaper clams they dig regardless of size or broken condition.

Mr. Xue's wife never dug any clams for herself. Prior to leaving Seal Island, I observed Mr. Xue's daughter in law, Mrs. Lin count a sack of clams at their boat. Mrs. Lin counted twenty clams into a rice sack for herself and her husband. Mrs. Lin took an extra clam she had and left it on the ground. Mr. Xue buried the clam with his shovel.

I contacted Mr. Xue and his daughter in law Mrs. lin after they returned from Seal Island. I told Mrs. Lin I observed her waste one clam before leaving the island. I also told Mr. Xue I onserved him dig a total of (22) gaper clams, and waste (7).

I issued Mr. Xue and Mrs. Lin a citation for the violations. Note: Mr. Xue has a prior conviction for taking over limits of gaper clams.

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
R. Mead , 398	05/22/15		

PROSECUTING AGENCY --- (WHITE) REGION --- (GOLDEN ROD) ADMINISTRATIVE USE --- (GREEN) OFFICER --- (BLUE)

Department Exhibit 5

Superior Court of California, County of Marin
Docket

Last Activity Date: 3/2/2017

Case Number: CT14028014 Status: Closed

People vs. Xue, Shan Xiang

Address: Case Balance Due: $0.00 In Trust: $0.00

Citing Officer(s): Thiem

Jurisdiction: Marin County

Charges, Pleas and Dispositions:

Count	Code/Section	Description	Severity	Plea	Disposition
1	CCR 14.29.25	Gaper Clams and Washington Clams	I		Found Guilty

---

Alerts:

10/20/2014 09:34 AM

-- Bail waiver granted.

01/21/2015 10:00 AM

-- Hearing held on 1/21/2015 at 10:00 AM in Superior Court, Courtroom N, on Contested Traffic calendar for Court Trial; Hon. Frank Drago, Traffic Referee presiding. Clerk: Tamara Jucutan. Reporter: Electronic Recording.

-- Nature of proceedings: Court Trial.

-- Officer(s) Thiem present.

-- Defendant present.

-- Charlotte Tai - Mandarin/Chinese. Interpreter is sworn. appeared to interpret for Defendant.

-- Defendant answers to true name as charged.

-- Officer sworn and testifies.

-- Exhibit(s) admitted in evidence.

-- Exhibits retained from officer.

-- Defendant sworn and testifies.

-- As to count 1 - CCR 14.29.25, I, the Court finds Defendant guilty.

-- **********SENTENCE**********

-- As to count 1 - CCR 14.29.25, I, Defendant is fined $3,616.00.

-- Defendant is to pay fines, assessments, and fees of $3,616.00 by 3/23/2015.

-- All sentence elements for this proceeding have been entered.

THIS INSTRUMENT IS A CORRECT COPY OF THE ORIGINAL ON FILE IN THIS OFFICE

MAR - 5 2018

Attest: KIM TURNER, Court Executive Officer MARIN COUNTY SUPERIOR COURT By: J. Poole, Deputy

Last Activity Date: 3/2/2017

Case Number: CT14028014 Status: Closed

People vs. Xue, Shan Xiang

Address Case Balance Due: $0.00 In Trust: $0.00

01/29/2015 12:19 PM

-- Out of Court Entries for 1/29/2015 at 12:19 PM in Criminal/Traffic Clerk's Office.

-- Exhibits received from courtroom and stored in C-10 Exhibit Closet for safekeeping.

03/02/2015 09:32 AM

-- All defendant obligations have been met.

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE
ARREST/INVESTIGATION REPORT
ENF 6a (1/2013)

Region # NCLED Page 1 Of

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
09-08-2014	0930Hrs.	Unincorporated/ Marin Co./ Marin Co. Superior Court

"X" ONE	"X" ONE	TYPE OF REPORT ("X" APPLICABLE)
☒ Arrest Report	☒ Self Initiated	☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ CalTIP
☐ Formal Complaint	☐ Complaint	☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐ Other
		Other:

Suspect Information

Name Suspect #1 (First, Middle, Last)	Sex	Date of Birth (MM/DD/YY)	Citation Number
Tak Shing Xue			AD2023136

Suspect Address (Street, Apt, City, State, Zip Code)	Home Phone
	(925)288-1668
Business Address (Street, Apt., City, State, Zip Code)	Business Phone
NA	NA

Identification Type ("X" APPLICABLE)	Suspect Description ("X" APPLICABLE)
☒ CDL/CID ☐ Other State DL/ID	General: Hair: Eyes: Ethnicity:
☐ Other ID:	Height:
Number:	Weight:

Vehicle Type ("X" APPLICABLE)	Description (Make, Model, Year, Color)	License Plate Number/VIN
☒ Auto ☐ Vessel ☐ Other		09046J1

Offenses and Charges

☐ F&G ☒ T-14 ☐ Other: Section: 29.25 Description: Bag limit; Ten Pacific gaper clams.	☐ F&G ☐ T-14 ☐ Other: Section: Description:
☐ F&G ☐ T-14 ☐ Other: Section: Description:	☐ F&G ☐ T-14 ☐ Other: Section: Description:
☐ F&G ☐ T-14 ☐ Other: Section: Description:	☐ F&G ☐ T-14 ☐ Other: Section: Description:

Evidence Seized

Evidence Description (Amount, Type, Serial Number, etc.) "X" ONE ☐ Held ☐ Returned ☐ Destroyed ☒ Other	Evidence Photographed?
(78) Jointly possessed Pacific gaper clams. Returned one legal limit of ten. See Report.	☒ Yes ☐ No
Evidence Description (Amount, Type, Serial Number, etc.) "X" ONE ☐ Held ☐ Returned ☐ Destroyed ☐ Other	Evidence Photographed? ☐ Yes ☐ No
Evidence Description (Amount, Type, Serial Number, etc.) "X" ONE ☐ Held ☐ Returned ☐ Destroyed ☐ Other	Evidence Photographed? ☐ Yes ☐ No

Case Synopsis

On 09-08-2014 at approximately 0629 hours, I was on uniformed patrol at Lawson's Landing, Tomales Bay, CA. The focus of my patrol was enforcing regulations associated with the take of tidal invertebrates. The low tide event for that morning had exposed the the sandbar known as Seal Island. I conducted surveillance on four fishermen for approximately two hours. Tak Shing Xue, Shan Xiang Xue, Zeng Xiang Liu, and Shan You Xue, later identified by their CDL, were observed taking an overlimit of Pacific gaper clams. The four fishermen brought ashore (78) gaper clams. A total of (26) clams had been processed and hidden on three of the fishermen. See report.

See ENF 6b For Additional Suspect and Witness Information "X" ONE ☐ Yes ☐ No

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
Warden R. Thiem #732	09-15-2014	Lieutenant J. Jones #440	09-20-2014

PROSECUTING AGENCY — (WHITE) REGION — (GOLDEN POD) ADMINISTRATIVE USE — (GREEN) OFFICER — (BLUE)

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE

NARRATIVE/SUPPLEMENTAL

ENF 6a p.2 (Rev 1/2013) Region# NCLED Page of

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
09-08-2014	0930 Hrs.	Unincorporated/ Marin Co./ Marin Co. Superior Court

'X'APPLICABLE	TYPE OF REPORT ('X'APPLICABLE)
☒ Narrative ☐ Arrest Report	☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ Incident Report
☐ Supplemental ☐ Formal Complaint	☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐ Other
	Other:

Location/Subject/Incident Name	Arresting/Case Officer	Citation Number
Lawson's Landing/ Xue's & Liu/ Over limit of gaper clams.	Wdn. R.R. Thiem #732	AD2023139

On 09-08-2014 at approximately 0629 hours, I was on uniformed patrol, Lawson's Landing, Tomales Bay. The focus of my patrol was enforcing regulations associated with the take of tidal invertebrates. The low tide event for that morning had exposed the the sandbar known as Seal Island. Using high powered optics, I conducted surveillance on the fishermen for approximately two hours. All times are approximate.

Zeng Xiang Liu, later identified by his CDL, was wearing brown neoprene chest waders, a dive hood, and what appeared to be a black jacket with white on the shoulders.

Shan You Xue, later identified by his CDL, was wearing a black jacket, a ball cap, and dark colored jeans. Shan Y. Xue was markedly taller than the other three fishermen.

Shan Xiang Xue, later identified by his CDL, was wearing a grey vest over the top of a blue long sleeved shirt. The fisherman was easily distinguishable by his silver hair.

Tak Xue, later identified by his CDL, was wearing a blue, long sleeved shirt, and blue jeans tucked inside his black rubber boots. Tak Xue appeared to be one of the younger fishermen in the group.

At 0633hours, all four fishermen were actively digging for clams. The members of group were commingling all of their harvested clams into a pair of Kikkoman soy sauce buckets. I noted that Shan Xiang Xue had already dug three clams by 0648 hour. I continued to monitor the groups activities and the number of clams they had each dug. Tak Xue and Shan Xiang Xue appeared to work in concert for most of the morning. Even though Tak Xue appeared to be the younger and more abled body, Shan Xiang Xue was far and away the most efficient

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
Warden R. Thiem #732	09-15-2014	Lieutenant J. Jones #440	09-20-2014

PROSECUTING AGENCY — (WHITE) REGION — (GOLDEN ROD) ADMINISTRATIVE USE — (GREEN) OFFICER — (BLUE)

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE

NARRATIVE/SUPPLEMENTAL

WPD 8a p.2 (Rev 1/2013) Region NCLED

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
09-08-2014	0930 Hrs.	Unincorporated/ Marin Co./ Marin Co. Superior Court

"X" APPLICABLE
☒ Narrative ☐ Arrest Report
☐ Supplemental ☐ Formal Complaint

TYPE OF REPORT ("X" APPLICABLE)
☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ Incident Report
☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐
Other:

Location/Subject/Incident Name	Arresting/Case Officer	Citation Number
Lawson's Landing/ Xue's & Liu/ Over limit of gaper clams.	Wdn. R.R. Thiem #732	AD2023139

"digger" of the two fishermen. Shan You Xue and Liu worked more independently of one another,yet they commingled all of their clams. At one point in the morning, the two separated from Tak Xue, but remained in my field of view.

At 0714 hours, Tak Xue had clearly stopped digging. Tak Xue had only taken three clams. It was apparent Shan Xiang Xue was attempting to take all the clams for the couple. Shan Xiang Xue had now exceeded the daily bag limit of ten gaper clams based on my observations. Pursuant to California Code of Regualtions Title 14 section 29.25, the limit for Pacific gaper clams is ten.

At 0751 hours, Shan Xiang Xue had physically taken 21 clams. Shan Xiang Xue would simply toss the harvested clam out of the hole for one of three fishermen to pick up and place in the bucket. Shan You Xue and Liu were also observed going over their daily bag limit of ten clams by this point. I maintained focus on Tak Xue as he stood around. Tak Xue repeatedly looked towards the shoreline. At 0753 hours, I made a note that none of the fishermen in the group had attempted to count the clams they possessed in the buckets. This was unusual.

At 0807 hours, Tak Xue dumps the contents of one bucket. Tak Xue is observed placing 20 gaper clams back into the bucket. Several additional clams appeared to be left on the ground in the same location Tak Xue had just dumped the first bucket. Tak Xue intently stared at that spot. Tak Xue then emptied the second bucket. This second bucket was maintained by Shan You Xue and Liu for most of the morning. However, it was Tak Xue that assumed the role of counting 20 gaper clams back into the bucket.

Based on my observations, Tak Xue had placed a total of 40 gaper clams into the two Kikkoman soy sauce buckets. The remaining pile of clams on the ground nearly doubled after the second bucket had been dumped in the same general

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
Warden R. Thiem #732	09-15-2014	Lieutenant J. Jones #440	09-20-2014

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE

NARRATIVE/SUPPLEMENTAL

WPD 6a p.2 (Rev. 1/2013) Region# NCLED Page of

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
09-08-2014	0930 Hrs.	Unincorporated/ Marin Co./ Marin Co. Superior Court

"X" APPLICABLE
☒ Narrative ☐ Arrest Report
☐ Supplemental ☐ Formal Complaint

TYPE OF REPORT ("X" APPLICABLE)
☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ Incident Report
☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐
Other:

Location/Subject/Incident Name	Arresting/Case Officer	Citation Number
Lawson's Landing/ Xue's & Liu/ Over limit of gaper clams.	Wdn. R.R. Thiem #732	AD2023139

location as the first bucket. Tak Xue picked up no less than ten, additional gaper clams, and placed them in the small inflatable raft the fishermen used to access Seal Island.

At 0816 hours, Shan Xiang Xue flips the end of his shovel around and begins a stabbing motion in the general area where both buckets of clam had originally been dumped. It was clear that Shan Xiang Xue was breaking up the shells of the additional clams the group had harvested. Tak Xue stands as the other three fishermen quickly pick-and-pull the "necks" and other edible portions of the clam from the broken shells.

Tak Xue makes a phone call at 0822 hours. Liu and Shan You Xue packaged up untold numbers of processed clam necks into clear plastic bags. Tak Xue gets off the phone. Shan Xiang Xue is also seen placing processed clam into clear plastic bags. The fishermen were now standing in a couple inches of water. The incoming tide had nearly covered the island (tidal flat). It was worth noting that the four fishermen being observed were the only people on the island that morning.

I maintained a visual with my optics until the entire group reached the shoreline. The fishermen made several trips back and forth from a pickup truck (09046J1) in the parking lot. Once the fishermen had finally congregated around the back of the vehicle, I made contact. I announced myself as a warden with the California Department of Fish and Wildlife. I was driving a marked patrol vehicle and wearing my full department authorized uniform. I asked the fishermen if they had any success. Tak Xue said yes. I asked if they had any clams. Tak Xue said they had forty clams. I asked how many clams they each dug. Tak Xue did not hesitate, "Ten." I looked at Tak Xue and asked, "You dug ten clams this morning." Tak Xue said that he did. I asked to see all the clams the fishermen had brought ashore. I looked at the two buckets and asked, "Are all of your clams in these two buckets." Tak Xue said yes. I quickly counted out forty clams. I looked at

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
Warden R. Thiem #732	09-15-2014	Lieutenant J. Jones #440	09-20-2014

PROSECUTING AGENCY — (WHITE) REGION — (GOLDENROD) ADMINISTRATIVE USE — (GREEN) OFFICER — (BLUE)

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE

NARRATIVE/SUPPLEMENTAL

WPD 6a p.2 (Rev 1/2013) Region# NCLED Page 2

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
09-08-2014	0930 Hrs.	Unincorporated/ Marin Co./ Marin Co. Superior Court

"X" APPLICABLE
☒ Narrative ☐ Arrest Report
☐ Supplemental ☐ Formal Complaint

TYPE OF REPORT ("X" APPLICABLE)
☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ Incident Report
☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐
Other: _____

Location/Subject/Incident Name	Arresting/Case Officer	Citation Number
Lawson's Landing/ Xue's & Liu/ Over limit of gaper clams.	Wdn. R.R. Thiem #732	AD2023139

~~at Tak Xue and exclaimed, "I'm counting 52 clams." Tak Xue said they must have miscounted. I walked to the back of the truck an lifted out an article of clothing that appeared wet. I could feel an object in the pocket that was soft and roughly the weight of "necked" clams in a bag. I removed a bag of clams. I asked Tak Xue about the additional clams. Tak Xue said that he told me the group had 60 clams (photograph 1). I started recording both audio and video. I asked Tak Xue to ask the other fishermen if they had additional clams. Tax Xue repeated my question. Liu stepped forward and began rolling down his chest waders to produce pockets full of clam. I asked the fishermen if they had anymore clams. Tak Xue repeated my question. Tak Xue stated all the clams had been produced. Tak Xue recanted his statement and said his father had a little bit. I told Tak Xue that I knew that. Shan Xiang Xue stepped forward and produced two additional bags of processed clam. In total, the group possessed 52 whole, Pacific gaper clams, and 26 processed Pacific gaper clam "necks". The group had unlawfully come ashore with 38 Pacific gaper clams (Photograph 2).~~

I lifted an empty box of Shing Kee chili sauce from the bed of the truck (Photograph 3). I noted three, empty five gallon buckets of Kikkoman soy sauce. I asked Tak Xue if he worked at a restaurant. Tak Xue said no, then shook his head yes. I asked which restaurant. Tak Xue would not state his place of employment.

I informed all the fishermen they would be receiving a citation for violation of California Code of Regulations Title 14 section 29.25, Limit: Ten gaper clams. Tak Xue argued that he only took two clams. I refreshed his memory that he stated he dug ten when I first contacted the group. Tak Xue pointed to his foot and said that he couldn't dig. I explained to Tak Xue

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
Warden R. Thiem #732	09-15-2014	Lieutenant J. Jones #440	09-20-2014

PROSECUTING AGENCY — (WHITE) REGION — (GOLDENROD) ADMINISTRATIVE USE — (GREEN) OFFICER — (BLUE)

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE

NARRATIVE/SUPPLEMENTAL

WPD 6a p.2 (Rev 1/2013)

Region# NCLED Page 2

DATE OF INCIDENT/OCCURRENCE	TIME (2400)	CITY/COUNTY/JUDICIAL DISTRICT
09-08-2014	0930 Hrs.	Unincorporated/ Marin Co./ Marin Co. Superior Court

"X" APPLICABLE
☒ Narrative ☐ Arrest Report
☐ Supplemental ☐ Formal Complaint

TYPE OF REPORT *("X" APPLICABLE)*
☐ Commercial Fishing ☐ Hunting ☐ Inland Pollution ☐ Incident Report
☒ Recreational Fishing ☐ Trapping ☐ Marine Pollution ☐
Other:

Location/Subject/Incident Name	Arresting/Case Officer	Citation Number
Lawson's Landing/ Xue's & Liu/ Over limit of gaper clams.	Wdn. R.R. Thiem #732	AD2023139

that if he knew he couldn't dig for clams, yet allowed his father and the other two fishermen to dig clams for him, he was ultimately conspiring to break the law (P.C.sec.182(a)(2)). I told the fishermen that based on my observations, they had all contributed to the act of unlawfully taking an over limit of clams. Pursuant to Fish and Game Code section 2000, it is unlawful to "take" any clams in violation of the code or regulations made pursuant thereto. Possession of clams or parts thereof in or on the waters of this state, or while returning therefrom with fishing equipment is prima facie evidence the possessor took the clams or parts thereof. Furthermore, FGC section 2002 states it is unlawful to possess and clam or parts thereof, taken in violation of any provision of this code, or of any regulation made under it.

Tak Xue, Shan Xiang Xue, Shan You Xue, and Zeng Liu were all cited and released for C.C.R T14 section 29.25. I seized, photographed, and retained 38 Pacific gaper clams. I disposed of the clams that were unlawfully taken in an area where they might be consumed by other wildlife. The fishermen signed their citations in my presence.

Note: Shan Xiang Xue and Tak Xue were contacted the following day. Shan Xiang Xue had unlawfully taken a moon snail in violation of C.C.R T14 section 29.71(b). Warden Mark Ratley cited Shan Xue. However, Tak Xue offered Warden Ratley $400 to "make the problem go away." I later argued with Tak Xue that he would receive no breaks from myself or Warden Ratley after yesterday's attempt to break the law. Tak Xue stated, "Yesterday...we guilty. Today. Mistake." A female then offered clams if we wanted them. No bribes were accepted by either officer. No further action was taken.

Preparer's Name and Badge Number	Date	Reviewer's Name	Date
Warden R. Thiem #732	09-15-2014	Lieutenant J. Jones #440	09-20-2014

PROSECUTING AGENCY — (WHITE) REGION — (GOLDENROD) ADMINISTRATIVE USE — (GREEN) OFFICER — (BLUE)

PROOF OF SERVICE

I hereby declare as follows:

I am employed in the County of Sacramento, State of California. I am eighteen years of age or older and am not a party to the within entitled action. My business address is 1416 9th St., Sacramento, CA 95814.

On March 21, 2019, I caused to be served a letter from David Bess to the California Fish and Game Commission, dated March 21, 2019, by placing true copies thereof in the manner set forth below and addressed as follows:

Shan Xiang Xue

☐ By personal delivery in a sealed envelope addressed as indicated.

☐ By depositing in a sealed envelope via United Parcel Service Overnight Mail with postage fully paid thereon and addressed as indicated.

☑ Via United States Postal Service **Certified/Registered** Mail by depositing it in the mail at my business address with the postage fully prepaid.

☐ Via facsimile transmission at the facsimile number(s) indicated.

☐ Via electronic filing (e-mail) at the e-mail address indicated:

bcfloyd@floydlawfirm.net

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and this Declaration was executed at Sacramento, California on March 21, 2019.

Signature: Xochitl Miranda

Xochitl Miranda