# California Fish and Game Commission Meeting Binder

# Part 1 (Items 1-16)



# February 21, 2020 Sacramento

Note: We make every effort to ensure that documents we produce are compliant with Americans with Disabilities Act standards, pursuant to state and federal law; however, some materials included in our meeting binders that are produced by other organizations and members of the public may not be compliant.

- 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 150<sup>th</sup> 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 <u>https://videobookcase.com/</u>.
- 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, <u>www.fgc.ca.gov</u>, 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 <a href="https://fgc.ca.gov/Regulations/Petition-for-Regulation-Change">https://fgc.ca.gov/Regulations/Petition-for-Regulation-Change</a>.
- **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	Executive Director
Susan Ashcraft	Acting Deputy Executive Director
Mike Yaun	Legal Counsel
Elizabeth Pope	Acting Marine Advisor
Ari Cornman	Wildlife Advisor
Sherrie Fonbuena	Analyst
Craig Castleton	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	Regional 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) Commissioners Eric Sklar, President Saint Helena Jacque Hostler-Carmesin, Vice President McKinleyville Russell E. Burns, Member Napa Peter S. Silva, Member Jamul Samantha Murray, Member Del Mar STATE OF CALIFORNIA Gavin Newsom, Governor





www.fgc.ca.gov



Wildlife Heritage and Conservation Since 1870

#### REVISED\* MEETING AGENDA February 21, 2020, 8:00 AM

#### Natural Resources Building – Auditorium, First Floor 1416 Ninth Street, Sacramento, CA 95814

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

\*This agenda is revised to add Item D(III) to Executive Session; add details to Item 12(A) concerning Executive Director's report; revise Item 22(C) to clarify the action related to the March 5, 2020 Wildlife Resources Committee meeting; and delete Item 17 concerning experimental fishing permits phase I, as no comments within the scope of the 15-day notice were received.

- Note: 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. For 2020 when Commission meetings span two days, marine items will be heard on the first day and wildlife and inland fisheries items will be heard on the second day; administrative items will be divided as time permits.
- Invitation: The Commission invites members of the public to join commissioners and staff for a falconry demonstration sponsored by the California Hawking Club on Thursday, February 20 at 3:00 p.m. The demonstration will be held at Conaway Ranch, 45332 County Road 25 in Woodland; refreshments will be available starting at 2:30 p.m. Members of the public are welcome and must provide their own transportation.

Call to order/roll call to establish quorum

- 1. Consider approving agenda and order of items
- 2. Election of Commission president and vice president The commissioners annually elect one of their number as president and one as vice president, by a concurrent vote of at least three commissioners. (Pursuant to Section 102, Fish and Game Code)

# 3. Committee assignments

The Commission forms three committees from its membership, consisting of at least one commissioner: Marine Resources Committee, Tribal Committee and Wildlife Resources Committee. (Pursuant to sections 105, 106 and 106.5, Fish and Game Code)

#### 4. 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).

# **CONSENT ITEMS**

#### 5. Pacific leatherback sea turtle

- (A) Receive petition to list the Pacific leatherback sea turtle (*Dermochelys coriacea*) as an endangered species under the California Endangered Species Act (CESA) (Pursuant to Section 2074.6, Fish and Game Code)
- (B) Consider approving the Department's request for a 30-day extension to review the petition.

(Pursuant to Section 2073.5, Fish and Game Code)

#### 6. Riparian brush rabbit

Receive Department's five-year status review for riparian brush rabbit (*Sylvilagus bachmani riparius*), which is listed as an endangered species under CESA. (Pursuant to Section 2077, Fish and Game Code)

#### 7. Mountain lion

Receive Department's 90-day evaluation report for the petition to list mountain lion (*Puma concolor*) as a threatened or endangered species under CESA. (Pursuant to Section 2073.5, Fish and Game Code)

#### 8. Shasta snow-wreath

Receive Department's 90-day evaluation report for the petition to list Shasta snowwreath (*Neviusia cliftonii*) as a threatened or endangered species under CESA. (Pursuant to Section 2073.5, Fish and Game Code)

#### 9. Foothill yellow-legged frog

Consider ratifying findings for the listing decisions for foothill yellow-legged frog (*Rana boylii*) under CESA.

(Pursuant to Section 2075.5, Fish and Game Code)

- (A) Decision to list the Southwest/South Coast, West/Central Coast, and East/Southern Sierra clades as endangered
- (B) Decision to list the Northeast/Northern Sierra and Feather River clades as threatened
- (C) Decision *not* to list the Northwest/North Coast clade

# 10. Upper Klamath-Trinity spring Chinook salmon sport fishing emergency regulations (second 90-day extension)

Consider adopting a second 90-day extension of the upper Klamath-Trinity spring Chinook salmon emergency regulations. (Re-adopt subsection 7.50(b)(91.2), Title 14, CCR)

#### 11. Commission Designated Wild Trout Waters Policy Receive Department's recommendation and consider adopting proposed amendments

to the Commission Designated Wild Trout Waters policy. (Pursuant to Section 1727, Fish and Game Code)

# 12. Executive director's report

Receive an update from the executive director on staffing, legislation, and other information.

- (A) Staff report, including staff recruitment, sesquicentennial planning, website/document accessibility, California Law Revision Commission recommendation, delegations to staff, 2019 mountain lion necropsy report, and Dungeness Crab Task Force 2019 report
- (B) Legislative report
- (C) Report of lease termination by The Abalone Farm, Inc. for administrative kelp beds 204 and 207 following 30-day notice by the company, consistent with lease terms

# 13. Department informational items

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

- (A) Director's report
- (B) Marine Region
  - I. Update on automatic conformance of recreational ocean salmon and Pacific halibut regulations to federal regulations, and outcomes of International Pacific Halibut Commission and Pacific Fishery Management Council activities
  - II. Update on Marine Life Management Act (MLMA) master plan implementation and completion of a draft prioritization list of invertebrate fisheries for more focused management
- (C) Wildlife and Fisheries Division, and Ecosystem Conservation Division
- (D) Law Enforcement Division

# 14. Commission's annual tribal planning meeting

Discuss and potentially approve March 18, 2020 annual tribal planning meeting agenda.

# 15. Tribal Committee

Discuss updates and recommendations from the January 17, 2020 committee meeting. Consider approving new topics to address at a future committee meeting.

- (A) Receive January 17, 2020 meeting summary and consider adopting recommendations
- (B) Work plan development
  - I. Update on work plan and draft timeline
  - II. Discuss and consider approving new topics

# 16. Marine 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
- (B) Discuss and consider approving agenda topics for the March 17, 2020 meeting

# 17. Recreational purple sea urchin emergency

Discuss and consider adopting emergency regulations concerning recreational take of purple sea urchin at Caspar Cove, Mendocino County, to support recovery of kelp and species that depend on kelp.

(Amend Section 29.06, Title 14, CCR)

# 18. Recreational Dungeness crab marine life protection measures

Receive Department update on stakeholder outreach and provide direction regarding the Department's draft options for regulation change intended to provide additional whale and turtle protections in the recreational Dungeness crab fishery.

# 19. Strategic planning

Discuss and provide direction on potential revisions to the mission, vision and core values, receive and potentially adopt draft goals, and provide direction on a draft plan.

# 20. Petitions for regulation change

Consider requests 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 #2019-022: Increase shoreside possession limits to more than one daily recreational bag limit for multi-day fishing trips
  - II. Petition #2019-023 AM 1: Authorize hunting of ravens
  - III. Petition #2019-024 AM 1: Authorize hunting of blackbirds, cowbirds, grackles, crows, and magpies
  - IV. Petition #2019-025: Consider non-lethal beaver deterrence and listed species impacts prior to issuing depredation permits
  - V. Petition #2019-026: Reduce recreational trout bag limit for Caples Creek
- (B) Action on pending regulation petitions referred to staff or Department for review
  - I. Petition #2019-012: Prohibit hand operated water pumps for take of gaper and other clams
  - II. Petition #2019-014: Increase restrictions on recreational take of California grunion

# 21. Non-regulatory requests from previous meetings

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

- (A) Action on non-regulatory requests
- (B) Action on pending non-regulatory requests referred to staff or the Department for review

# 22. Wildlife Resources Committee

Discuss updates and recommendations from the January 16, 2020 committee meeting. Consider approving new topics to address at a future committee meeting. Discuss and consider approving draft agenda topics for the next committee meeting.

- (A) Receive January 16, 2020 meeting summary and consider adopting recommendations
- (B) Work plan development
  - I. Update on work plan and draft timeline
  - II. Discuss and consider approving new topics
- (C) Discuss and confirm current agenda topic for the March 5, 2020 meeting

#### 23. Draft Delta Fisheries Management Policy and Striped Bass Policy

Receive update on stakeholder discussions; discuss and consider adopting a Commission Delta Fisheries Management Policy and an amended Striped Bass Policy.

#### 24. Mammal hunting

Discuss proposed changes to mammal hunting tag quotas and seasons regulations. (Amend sections 360, 361, 362, 364, and 364.1, Title 14, CCR)

#### 25. Waterfowl hunting (annual)

Discuss proposed changes to waterfowl hunting regulations. (Amend sections 502 and 507, Title 14, CCR)

#### 26. Public use of Department lands

Discuss proposed changes to wildlife areas and ecological reserves regulations. (Amend sections 550, 550.5, 551, 552, 630, and 702, Title 14, CCR)

#### 27. Central Valley sport fishing

Discuss proposed changes to Central Valley sport fishing regulations. (Amend sections 2.35 and 7.00, and amend subsections 7.50(b)(5), (68), (124), and (156.5), Title 14, CCR)

#### 28. Klamath River Basin sport fishing

Discuss proposed changes to Klamath River Basin sport fishing regulations. (Amend subsections 5.87(f) and 7.50(b)(91.1), Title 14, CCR)

# 29. Upper Klamath-Trinity spring Chinook salmon sport fishing (certification of compliance)

Discuss proposed implementation of a certificate of compliance for the upper Klamath-Trinity spring Chinook salmon emergency regulations. (Add subsection 7.50(b)(91.2), Title 14, CCR)

#### 30. Baker's larkspur

Receive overview of the Department's five-year status review of Baker's larkspur (*Delphinium bakeri*), which is listed as an endangered species under CESA. (Pursuant to Section 2077, Fish and Game Code)

# 31. Clara Hunt's milkvetch

Consider and potentially act on the Department's five-year status review of Clara Hunt's milkvetch (*Astragalus claranus*), and consider recommendation and comments received to determine whether a change to the listing status from threatened to endangered under CESA may be warranted.

(Pursuant to sections 2074 and 2077, Fish and Game Code)

# 32. Commission administrative items

- (A) Next meeting April 15-16, 2020 in Sacramento
- (B) Rulemaking timetable updates
- (C) New business
- Adjourn

# EXECUTIVE SESSION

(Not Open to 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 Department of Fish and Wildlife, and California Fish and Game Commission (revocation of Dungeness crab vessel permit No. CT0544-T1)
  - II. Public Interest Coalition v. California Fish and Game Commission (CEQA compliance during adoption of dog collar regulation)
  - III. Aaron Lance Newman v. California Fish and Game Commission (revocation of hunting and sport fishing privileges)
  - IV. Almond Alliance of California et al. v. California Fish and Game Commission and California Department of Fish and Wildlife (bumble bees California Endangered Species Act determination)
- (B) Possible litigation involving the Commission
- (C) Staffing
- (D) Deliberation and action on license and permit items
  - I. Consider the Proposed Decision in Agency Case No. 18ALJ04-FGC, the accusation filed against Keith Langman regarding revocation of a commercial fishing license, commercial trap permit, lobster operator permit, and southern rock crab trap permit.
  - II. Consider the appeal filed by Michael Anderson in Agency Case No. 19ALJ14-FGC regarding his request to renew his salmon vessel permit.
  - III. Consider the appeal filed by Douglas Dirkse in Agency Case No. 19ALJ16-FGC regarding his request to renew his salmon vessel permit.

# California Fish and Game Commission 2020 Meeting Schedule

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

Meeting Date	Commission Meeting	Committee Meeting	Other Meetings
March 5		Wildlife Resources* Natural Resources Building Redwood Room 1416 Ninth Street, 14 <sup>th</sup> Floor Sacramento, CA 95814	
		(*Purpose of meeting is to discuss 2020 Simplification of Statewide Inland Fishing Regulations proposal)	
March 17		Marine Resources Justice Joseph A. Rattigan Building Conference Room 410 50 D Street, 4 <sup>th</sup> Floor Santa Rosa, CA 95404	
March 18			Annual Tribal Planning
April 15 - 16	Natural Resources Building Auditorium 1416 Ninth Street, 1 <sup>st</sup> Floor Sacramento, CA 95814		
May 14	<b>Teleconference</b> Arcata, Santa Rosa, Sacramento and San Diego		
May 14 May 14 May 14 May 14 May 14 May 14 May 14 Mildlife Resources Justice Joseph A. Rattin Building Conference Room 410 50 D Street, 4 <sup>th</sup> Floor Santa Rosa, CA 95404		Wildlife Resources Justice Joseph A. Rattigan Building Conference Room 410 50 D Street, 4 <sup>th</sup> Floor Santa Rosa, CA 95404	
June 24 - 25 Santa Ana area			
July 21	July 21 Marine Resources San Clemente area		
August 18		<b>Tribal</b> River Lodge Conference Center 1800 Riverwalk Drive Fortuna, CA 95540	

Meeting Date	Commission Meeting	Committee Meeting	Other Meetings
August 19 - 20	River Lodge Conference Center 1800 Riverwalk Drive Fortuna, CA 95540		
September 17		Wildlife Resources Natural Resources Building Redwood Room 1416 Ninth Street, 14 <sup>th</sup> Floor Sacramento, CA 95814	
October 14 - 15	Elihu M Harris Building Auditorium 1515 Clay Street Oakland, CA 94612		
November 9		Tribal Monterey area	
November 10		Marine Resources Monterey area	
December 9 - 10	San Diego area		

# OTHER 2020 MEETINGS OF INTEREST

#### Association of Fish and Wildlife Agencies

- March 8-13, Omaha, NE
- September 13-16, Sacramento, CA

#### **Pacific Fishery Management Council**

- March 3-9, Rohnert Park, CA
- April 3-10, Vancouver, WA
- June 11-18, San Diego, CA
- September 10-17, Spokane, WA
- November 13-20, Garden Grove, CA

#### Pacific Flyway Council

- March 10 Omaha, NE
- August 28 (location TBD)

#### Western Association of Fish and Wildlife Agencies

• July 9-14, Park City, UT

#### Wildlife Conservation Board

- February 26, Sacramento, CA
- May 20, Sacramento, CA
- August 26, Sacramento, CA
- November 18, 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, <u>www.fgc.ca.gov</u>, 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; delivery to California Fish and Game Commission, 1416 Ninth Street, Suite 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 February 9, 2020.** Written comments received at the Commission office by this deadline will be made available to Commissioners prior to the meeting.

The **Supplemental Comment Deadline** for this meeting is **noon on February 14, 2020** <u>has</u> <u>been extended to 5:00 p.m. on Monday, February 17, 2020</u>. Comments received by this deadline will be 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 **Supplemental Comment Deadline** (or heard during general 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 <a href="https://fgc.ca.gov/Regulations/Petition-for-Regulation-Change">https://fgc.ca.gov/Regulations/Petition-for-Regulation-Change</a>. To be received by the Commission at this meeting, petition forms must have been delivered by the **Supplemental Comment Deadline** (or delivered during general 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 **Supplemental 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 Supplemental 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.

# 2. ELECT COMMISSION PRESIDENT AND VICE PRESIDENT

Тос	day's Item	Information $\Box$	Action 🛛
Ele	ct an FGC president and vice presid	lent.	
Su	mmary of Previous/Future Actions	6	
•	Elected Eric Sklar as president and Willams as vice president	Anthony	Feb 7-8, 2018, Sacramento
•	Elected Eric Sklar as president and Hostler-Carmesin as vice president	l Jacque t	Feb 6, 2019; Sacramento
•	Today elect FGC president and v	vice president	Feb 21, 2020; Sacramento

#### Background

Pursuant to Section 102 of California Fish and Game Code, the commissioners shall elect one of their members as president and one as vice president. The code was recently amended by Senate Bill 809 (Chapter 521, Statutes of 2017) to allow commissioners to serve more than two consecutive terms.

Responsibilities of the president include:

- chair FGC meetings,
- represent FGC as a voting member of the Wildlife Conservation Board (four meetings per year),
- routinely provide guidance to FGC executive director and deputy executive director,
- primary contact with DFW director, and
- may be an ex officio member of the Migratory Bird Conservation Commission created by the Migratory Bird Treaty Act if there are any projects in California under consideration.

In the absence of the president, the vice president fulfills the duties of the president where permitted.

# Significant Public Comments (N/A)

#### **Recommendation (N/A)**

#### Exhibits (N/A)

#### **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission elects \_\_\_\_\_\_ as president and \_\_\_\_\_\_ as vice president.

#### 3. COMMITTEE ASSIGNMENTS

#### **Today's Item**

Information  $\Box$ 

Action 🛛

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

#### **Summary of Previous/Future Actions**

- MRC, TC and WRC assignments made
- Today's assignment of committee co-chairs

Apr 17, 2019; Santa Monica **Feb 21, 2020; Sacramento** 

# Background

FGC has three standing committees authorized in statute: MRC, TC and WRC. No more than two commissioners may co-chair each committee and there are no limits to how long a commissioner may serve on a particular committee. 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; and TC provides recommendations to FGC relative to matters associated with California's Native American tribes and tribal communities.

Committee assignments are generally identified at the beginning of each year. Current assignments were made in Apr of 2019:

- MRC: Peter Silva and Samantha Murray,
- TC: Jacque Hostler-Carmesin and Peter Silva
- WRC: Eric Sklar and Russell Burns

At this meeting, FGC will consider and potentially approve any changes to committee assignments for 2020.

# Significant Public Comments (N/A)

#### Recommendation (N/A)

# Exhibits (N/A)

#### **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission assigns:

- 1. \_\_\_\_\_ and \_\_\_\_\_ to the Marine Resources Committee;
  - 2. \_\_\_\_\_ and \_\_\_\_\_ to the Tribal Committee; and
- 3. \_\_\_\_\_ and \_\_\_\_\_ to the Wildlife Resources Committee.

# 4. 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 receive requests and comments Feb 21, 2020; Sacramento
- Consider granting, denying or referring

Apr 15-16, 2020; Sacramento

# 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 supplemental comments at the meeting (if received by supplemental 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) informationalonly comments. Under the Bagley-Keene Open Meeting Act, FGC cannot discuss or take action on 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 Apr 15-16, 2020).

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 2-3.
- 2. One request for non-regulatory action is provided in Exhibit 4.
- 3. Informational comments are provided as exhibits 5-14.

# Recommendation

*FGC staff:* Consider whether any new future agenda items are needed to address issues that are raised during public comment.

# Exhibits

- 1. <u>Summary of new petitions for regulation change received by Feb 9, 2020 at 5:00 p.m.</u>
- 2. <u>Petition #2019-027 AM 1:</u> Reopen San Miguel Island to commercial red abalone fishing.
- 3. <u>Petition #2020-001:</u> Emergency regulation for take of purple urchin at Tanker's Reef, Monterey.
- 4. <u>Email from Helen Ferguson, Lake Earl Grange #577 Environmental Policy and</u> <u>Procedure Committee</u>, requesting that FGC not renew Alexandre Eco Dairy Farms' five-year Private Lands Wildlife Habitat Enhancement and Management Area license renewal, received Feb 7, 2020
- 5. <u>Letter from Patrick Kittle, president of Kittle's Outdoor and Sport Co.</u>, concerning the importation of golden shiner minnows into California, received Dec 4, 2019
- 6. <u>Email from Brooks Taylor</u> concerning challenges of obtaining a big game hunting tag in California under the current points system structure, received Dec 9, 2019
- 7. <u>Email from Rikki Eriksen, California Marine Sanctuary Foundation</u>, transmitting a report on recent outreach efforts regarding marine protected areas in California, received Dec 11, 2019
- 8. <u>Email from Randy Robertson</u> in support of a proposed change to the license period for annual fishing licenses, received Dec 14, 2019
- 9. <u>Email from Walter Lamb, Ballona Wetlands Land Trust</u>, concerning parking use and DFW's environmental impact report for Ballona Wetlands Ecological Reserve, received Jan 3, 2020
- 10. <u>Email from Jon Holcomb</u>, concerning the cost of kelp and urchin data collection, received Jan 18, 2020
- 11. <u>Email from Paul Weakland</u>, providing a link to an article on U.S. Navy equipment in the ocean and interaction with commercial fishing gear, received Jan 18, 2020
- Email from Susan Tellem, executive director of American Tortoise Rescue, transmitting an editorial article on live food markets and risk of viruses, received Jan 27, 2020
- 13. <u>Email from Marko Mlikotin, executive director of California Sportfishing League</u>, transmitting an editorial article on fishing license reform, received Jan 28, 2020
- 14. <u>Email from Eric Mills, Action for Animals</u>, transmitting a link to an article in The Guardian concerning calls for global ban on wild animal markets amid coronavirus outbreak, received Jan 26, 2020
- 15. <u>Email from Eric Mills, Action for Animals</u>, transmitting a link to an article related to live animal markets and risk of diseases, received Jan 27, 2020
- 16. <u>Email from Eric Mills, Action for Animals</u>, transmitting a letter concerning live animal food markets and risk of coronavirus, received Feb 7, 2020

# Motion/Direction (N/A)

# 5. PACIFIC LEATHERBACK SEA TURTLE (CONSENT)

#### Today's Item

Information  $\Box$ 

Action 🛛

- (A) Receive a petition to list the Pacific leatherback sea turtle (*Dermochelys coriacea*) as an endangered species under the California Endangered Species Act (CESA).
- (B) Consider approving DFW's request for a 30-day extension to review the petition.

#### **Summary of Previous/Future Actions**

Received petition	Jan 23, 2020
FGC transmitted petition to DFW	Feb 3, 2020
Published notice of receipt of petition	Feb 14, 2020
Today's public receipt of petition and action on DFW's 30-day extension request	Feb 21, 2020; Sacramento
Receive DFW evaluation of petition	Jun 24-25, 2020; Santa Ana
Determine if petitioned action may be warranted	Aug 19-20, 2020; Fortuna
	Received petition FGC transmitted petition to DFW Published notice of receipt of petition <b>Today's public receipt of petition and action</b> <b>on DFW's 30-day extension request</b> Receive DFW evaluation of petition Determine if petitioned action may be warranted

# Background

- (A) A petition to list Pacific leatherback sea turtle as endangered under CESA was submitted by the Center for Biological Diversity and Turtle Island Restoration Network on Jan 23, 2020 (Exhibit A1). On Feb 3, 2020, FGC staff transmitted the petition to DFW for review. A notice of receipt of petition was published in the California Regulatory Notice Register on Feb 14, 2020.
- (B) California Fish and Game Code Section 2073.5 requires that DFW evaluate the petition and submit a written evaluation with a recommendation to FGC within 90 days of receiving the petition; under this section, DFW may request an extension of up to 30 days to complete the evaluation. DFW has requested a 30-day extension (Exhibit 2); if approved, the due date for DFW's evaluation would change from May 4, 2020 to Jun 3, 2020.

#### Significant Public Comments (N/A)

#### Recommendation

*FGC staff:* Receive the petition and approve DFW's request for an extension of 30 days under a motion to adopt the consent calendar.

# Exhibits

- 1. <u>Petition to list Pacific leatherback sea turtle as endangered</u>, received Jan 23, 2020
- 2. <u>DFW memo requesting an extension of 30 days</u>, received Feb 7, 2020

#### Motion/Direction

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission adopts the staff recommendations for items 5-11 on the consent calendar.

# 6. **RIPARIAN BRUSH RABBIT (CONSENT)**

#### Today's Item

Information 🛛

Action

Receive DFW's five-year status review for riparian brush rabbit (*Sylvilagus bachmani riparius*), which is listed as an endangered species under the California Endangered Species Act (CESA).

#### **Summary of Previous/Future Actions**

- Determined listing of riparian brush rabbit as endangered was warranted
   Today receive five-year status review
   Feb 21, 2020; Sacramento
- DFW presentation and potential FGC action

Apr 15-16, 2020; Sacramento

#### Background

Riparian brush rabbit has been listed as endangered under CESA since 1994 and is included in FGC's list of endangered animal found in Section 670.5. The species has been listed as endangered under the federal Endangered Species Act since 2000.

California Fish and Game Code Section 2077 mandates that the status of a species listed by FGC as threatened or endangered under CESA be reviewed every five years, if funding is available. New DFW funding was authorized in 2018 for purposes of completing reviews; the review scheduled for receipt at this meeting is the third to be conducted under the authorized funding. Additional status reviews are expected at future FGC meetings.

DFW has prepared a status review of riparian brush rabbit (Exhibit 2) to evaluate whether the conditions that led to the original listing are still present, or if conditions have changed to warrant a different listing status.

DFW finds there is sufficient scientific information to indicate that many of the conditions that led to the listing of riparian brush rabbit as endangered in 1994 have not changed and that it remains in danger of extinction in all or a significant portion of its range due to one or more causes. Therefore, DFW recommends that no change be made to the riparian brush rabbit's endangered status.

At the Apr 15-16, 2020 FGC meeting, DFW will provide a presentation regarding its status review.

# Significant Public Comments (N/A)

# Recommendation

*FGC staff:* Receive DFW's status review under a motion to adopt the consent calendar, accept any public comment, and schedule a presentation for the Apr 2020 FGC meeting. *DFW:* Retain the endangered status of riparian brush rabbit.

# STAFF SUMMARY FOR FEBRUARY 21, 2020

#### Exhibits

- 1. <u>DFW memo</u>, received Feb 6, 2020
- 2. DFW five-year status review, dated Feb 21, 2020, received Feb 6, 2020

#### **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission adopts the staff recommendations for items 5-11 on the consent calendar.

# 7. MOUNTAIN LION (CONSENT)

#### Today's Item

Information 🛛

Action

Receive petition evaluation report from DFW for the petition to list certain populations of mountain lion (*Puma concolor*) as a threatened or endangered species under the California Engangered Species Act (CESA).

#### **Summary of Previous/Future Actions**

•	Received petition	Jun 25, 2019
•	FGC transmitted petition to DFW	Jul 5, 2019
•	Published notice of receipt of petition	Jul 26, 2019
•	Public receipt of petition and approval of DFW's's request for 30-day extension	Aug 7-8, 2019; Sacramento
•	Today receive DFW's petition evaluation	Feb 21, 2020; Sacramento
•	Determine if the petitioned action may be	Apr 15-16, 2020; Sacramento

#### Background

warranted

A petition to list one or more evolutionarily significant units (ESU) of mountain lion in southern and central coastal California as threatened or endangered under CESA was submitted by the Center for Biological Diversity and the Mountain Lion Foundation (petitioners) on Jun 25, 2019. On Jul 5, 2019, FGC transmitted the petition to DFW for review. A notice of receipt of petition was published in the California Regulatory Notice Register on Jul 26, 2019.

California Fish and Game Code Section 2073.5 requires that DFW evaluate the petition and submit to FGC a written evaluation with a recommendation. DFW has completed its petition evaluation report, which delineates each of the categories of information required for a petition, evaluates the sufficiency of the available scientific information for each of the required components, and incorporates additional relevant information that DFW possessed or received during the review period. DFW transmitted its report with a cover memo to FGC on Feb 6, 2020 (exhibits 1 and 2).

Based on the petition and other information provided, possessed or received, DFW has determined that there is sufficient scientific information available to indicate that the petitioned action may be warranted and recommends that the petition be accepted and considered. However, this meeting is not intended for FGC discussion and FGC cannot consider the petition at this meeting. Fish and Game Code Section 2074 requires that consideration of the petition be scheduled not sooner than 30 days after receipt of the petition 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.

FGC is scheduled to determine if listing may be warranted at its Apr 15-16, 2020 meeting. If FGC determines in Apr that listing may be warranted, DFW will review the status of the species and provide FGC a written, peer-reviewed report before FGC makes a final determination about whether to list the species.

# **Significant Public Comments**

- A letter of support asserts that the proposed Southern/Central Coast ESU is in need of protection because in that area: (1) mountain lions are rare and the loss of one individual can harm the population; (2) threats to mountain lions are increasing; (3) protecting mountain lions protects ecosystem integrity; (4) there is no conflict between a CESA listing and Proposition 117; and (5) FGC is obligated to list the ESU if science shows that listing is warranted (Exhibit 3).
- 2. Over 4,500 members of the public submitted emails in support of listing mountain lion, citing habitat loss and fragmentation, genetic isolation, development, and other threats, and explaining the ecological benefits of mountain lion as an apex predator (see Exhibit 4 for a sample).
- 3. One letter of opposition urges FGC not to list mountain lion, stating that legislation already protects the species (Exhibit 5).

#### Recommendation

*FGC staff:* Receive the DFW petition evaluation under a motion to adopt the consent calendar, accept any public comment, and consider DFW's recommendation at the Apr 2020 FGC meeting.

DFW: Accept and consider the petition.

#### **Exhibits**

- 1. <u>DFW memo</u>, received Feb 6, 2020
- 2. DFW evaluation report, received Feb 6, 2020
- 3. Letter from the Humane Society of the United States, received Jan 16, 2020
- 4. Sample email from Kevin McAlister, received Feb 6, 2020
- 5. Email from Wendy Tochihara, received Feb 7, 2020

#### **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission adopts the staff recommendations for items 5-11 on the consent calendar.

# 8. SHASTA SNOW-WREATH (CONSENT)

#### Today's Item

Information 🛛

Action

Receive petition evaluation report from DFW for the petition to list Shasta snow-wreath (*Neviusia cliftonii*) as a threatened or endangered species under the California Endangered Species Act (CESA).

#### **Summary of Previous/Future Actions**

•	Received petition	Sep 30, 2019
•	FGC transmitted petition to DFW	Oct 10, 2019
•	Published notice of receipt of petition	Nov 22, 2019
•	Public receipt of petition and approval of DFW's request for a 30-day extension	Dec 11-12, 2019; Sacramento
•	Today receive DFW's petition evaluation	Feb 21, 2020; Sacramento
٠	Determine if the petitioned action may be	Apr 15-16, 2020; Sacramento

# Background

warranted

A petition to list Shasta snow-wreath as endangered under CESA was submitted by Kathleen Roche and the California Native Plant Society on Sep 30, 2019. On Oct 10, 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 Nov 22, 2019.

California Fish and Game Code Section 2073.5 requires that DFW evaluate the petition and submit to FGC a written evaluation with a recommendation. DFW has completed its petition evaluation report, which delineates each of the categories of information required for a petition, evaluates the sufficiency of the available scientific information for each of the required components, and incorporates additional relevant information that DFW possessed or received during the review period. DFW transmitted its report with a cover memo to FGC on Feb 6, 2020 (exhibits 1 and 2).

Based on the petition and other information provided, possessed or received, DFW has determined that there is sufficient scientific information available to indicate that the petitioned action may be warranted and recommends that the petition be accepted and considered. However, this meeting is not intended for FGC discussion and FGC cannot consider the petition at this meeting. Fish and Game Code Section 2074 requires that consideration of the petition be scheduled not sooner than 30 days after the receipt of the petition 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.

FGC is scheduled to determine if listing may be warranted at its Apr 15-16, 2020 meeting. If FGC determines in Apr that listing may be warranted, DFW will review the status of the species and provide FGC a written, peer-reviewed report before FGC makes a final determination about whether to list the species.

# Significant Public Comments (N/A)

#### Recommendation

*FGC staff:* Receive the DFW petition evaluation under a motion to adopt the consent calendar, accept any public comment, and consider DFW's recommendation at the Apr 2020 FGC meeting.

DFW: Accept and consider the petition.

# Exhibits

- 1. <u>DFW memo</u>, received Feb 6, 2020
- 2. DFW evaluation report, received Feb 6, 2020

#### **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission adopts the staff recommendations for items 5-11 on the consent calendar.

# 9. FOOTHILL YELLOW-LEGGED FROG (CONSENT)

#### Today's Item

Information

Action 🛛

Consider ratifying findings for the listing decision for foothill yellow-legged frog (*Rana boylii*) under the California Endangered Species Act (CESA).

#### **Summary of Previous/Future Actions**

•	Today potentially adopt findings	Feb 21, 2020; Sacramento
•	Determination that listing is warranted	Dec 11-12, 2019; Sacramento
•	Received DFW status review report	Oct 9-10, 2019; Valley Center
•	Approved DFW's request for 6-month extension	Jun 20-21, 2018; Sacramento
•	FGC determined listing may be warranted	Jun 21-22, 2017; Smith River
•	Received evaluation and recommendation	Apr 26-27, 2017; Van Nuys
•	Published notice of receipt of petition	Jan 20, 2017
•	FGC transmitted petition to DFW	Dec 22, 2016
•	Received petition	Dec 14, 2016

#### Background

On Dec 11, 2019, FGC made a determination pursuant to California Fish and Game Code Section 2075.5 that listing three clades of foothill yellow-legged frog as endangered and two clades of foothill yellow-legged frog as threatened under CESA is warranted. Specifically, FGC determined that:

- 1. listing the Southwest/South Coast, West/Central Coast, and East/Southern Sierra clades of foothill yellow-legged frog as endangered is warranted;
- 2. listing the Northeast/Northern Sierra and Feather River clades of foothill yellow-legged frog as threatened is warranted; and
- 3. listing the Northwest/North Coast clade of foothill yellow-legged frog is *not* warranted.

FGC staff has drafted a notice of findings substantiating FGC's action, for consideration today (Exhibit 1).

#### Significant Public Comments (N/A)

#### Recommendation

*FGC staff:* Under a motion to adopt the consent calendar, adopt FGC staff's proposed notice of findings that supports the three determinations made by FGC on Dec 11, 2019, as listed above.

#### Exhibits

1. Draft notice of findings

#### **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission adopts the staff recommendations for items 5-11 on the consent calendar.

#### 10. UPPER KLAMATH-TRINITY SPRING CHINOOK SALMON EMERGENCY REGULATIONS (SECOND 90-DAY EXTENSION; CONSENT)

# Today's Item

Information

Action 🛛

Consider adopting a second 90-day extension of the upper Klamath-Trinity spring Chinook salmon sport fishing emergency regulations.

#### **Summary of Previous/Future Actions**

•	Adopted emergency regulations authorizing take under Section 2084	Apr 17, 2019; Santa Monica
•	Re-adopted emergency regulations	Dec 11-12, 2019; Sacramento
•	Today's second re-adoption of emergency regulations	Feb 21, 2020; Sacramento
•	Potentially adopt certificate of compliance regulations authorizing take under Section 2084	Apr 15-16, 2020; Sacramento

# Background

As of Feb 2019, upper Klamath-Trinity river spring Chinook salmon (UKTSCS) is a candidate species under CESA, which confers CESA protections during candidacy. CESA also provides that FGC may adopt regulations to authorize take of certain threatened or endangered species or candidate species under California Fish and Game Code Section 2084. At its Apr 17, 2019 meeting, FGC adopted emergency regulations to allow limited take of UKTSCS at the end of the traditional spring season, while ensuring that substantial protection to UKTSCS is provided, consistent with Section 2084. The emergency regulations, codified in subsection 7.50(b)(91.2), went into effect Jun 26, 2019 and would have expired Dec 24, 2019 if not re-adopted. FGC re-adopted the emergency regulations at its Dec 2019 meeting. The regulations will now expire Mar 24, 2020 unless re-adopted.

At today's meeting, FGC staff recommends that FGC re-adopt the regulations for an additional 90-day period to prevent a lapse in regulatory coverage. The re-adopted emergency regulations supersede the Jan 1 opening dates for Klamath River Basin Chinook salmon prescribed in subsection 7.50(b)(91.1) and provide regulatory consistency to reduce potential confusion amongst anglers.

The emergency regulations will open spring Chinook salmon sport fishing, with a one-fish bag limit and a two-fish possession limit, on the lower Klamath River between Jul 1 and Aug 14, and on the upper Trinity River and New River between Jul 1 and Aug 31, in order to reduce adverse impacts to local economies resulting from the CESA protections for UKTSCS.

A certificate of compliance rulemaking is underway to make the emergency regulations permanent (see Agenda Item 29, this meeting); however, the conditions documented at the Apr 2019 meeting necessitating the initial adoption have not changed and today's extension is necessary to keep the emergency regulations in place until the permanent regulations are effective.

See staff summaries from the Feb and Apr 2019 meetings for additional background information (exhibits 4 and 5).

#### Significant Public Comments (N/A)

#### Recommendation

**FGC staff:** Under a motion to adopt the consent calendar, find, (1) 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; (2) determine, based on the record, that this approval is exempt from CEQA 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 California Code of Regulations, Title 14, Section 15307, and relying on Title 14, Section 15061(b)(3); (3) determine, pursuant to Section 11346.1 of the Government Code, that an emergency situation continues to exist and find the proposed regulation is necessary to address the emergency; and, therefore, (4) adopt the emergency regulation in subsection 7.50(b)(91.2), Title 14, California Code of Regulations, for an additional 90 days.

#### **Exhibits**

- 1. <u>Draft finding of emergency and statement of proposed emergency regulatory action for</u> re-adoption of emergency regulations
- 2. Draft Economic and Fiscal Impact Statement (std. 399)
- 3. Draft notice of exemption
- 4. Staff summary from Feb 2019 FGC meeting (for background purposes only)
- 5. Staff summary from Apr 2019 FGC meeting (for background purposes only)

#### **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission adopts the staff recommendations for items 5-11 on the consent calendar.

# 11. WILD TROUT WATERS POLICY (CONSENT)

#### Today's Item

Information  $\Box$ 

Action 🛛

Potentially approve proposed amendments to FGC's policy on Commission Designated Wild Trout Waters.

# **Summary of Previous/Future Actions**

- Consider designation of Wild Trout Waters
  Dec 11-12, 2019; Sacramento
- Today reconsider designation of wild trout waters
  F

Feb 6, 2019; Sacramento

# Background

California Fish and Game Code Section 1727 requires that DFW annually submit to FGC a list of no less than 25 miles of stream or stream segments and at least one lake deemed suitable for designations as "Wild Trout Waters". Wild Trout Waters: (1) must be open to the public; (2) must be able to support, with appropriate angling regulations, wild trout populations of sufficient magnitude to provide satisfactory trout catches; and (3) not be planted with domestic strains of catchable-size trout, though suitable hatchery-produced wild or semi-wild strains may be planted if necessary to supplement natural reproduction.

Further, Fish and Game Code Section 7260(c) gives FGC authority to designate "Heritage Trout Waters" to recognize the beauty, diversity, historical significance, and special values of California's native trout. Heritage Trout Waters are waters supporting populations that best exemplify indigenous strains of native trout within their historic drainages, and are able to provide anglers with the opportunity to catch native trout consistent with the conservation of the native trout present.

FGC also established a *Commission Designated Wild Trout Waters* policy to further define the criteria for eligible waters and for their management under the two designations (Exhibit 1). The policy includes the list of FGC-designated Wild Trout Waters and Heritage Trout Waters, and is amended annually if FGC designates waters recommended by DFW.

At FGC's Dec 2019 meeting, DFW proposed the addition of two new waters:

- 1. North Fork Smith River, from the confluence with Middle Fork Smith River upstream to the Oregon state line, including Stony Creek, Diamond Creek, North Fork Diamond Creek, and excluding all other tributaries (Del Norte County); and
- 2. Hilton Lake # 5 (Mono County).

DFW further proposed that the segment of the North Fork Smith River and its tributaries as described also be designated as a Heritage Trout Water. DFW provides in Exhibit 2 an overview of its rationale for each recommended designation.

At its Dec 2019 meeting, FGC received a comment from the Del Norte County Board of Supervisors expressing concerns with the proposed designation of Wild Trout Waters within the county (Exhibit 3). FGC requested that DFW consult with the county to better understand, and

potentially address, its concerns; FGC continued the agenda item to today's meeting to allow for the discussion.

Following the Dec meeting, DFW reached out to the county and discussions are ongoing. Therefore, FGC staff recommends that FGC only designate the Modoc County portion of DFW's recommendation at this time (see below).

# **Significant Public Comments**

As noted at the Dec 2019 FGC meeting, the Del Norte County Board of Supervisors expresses concerns regarding the designation of Wild Trout Waters on the portions of the Smith River, as proposed (Exhibit 2). The county ask that the reach be withdrawn from consideration.

#### Recommendation

*FGC staff:* Under a motion to adopt the consent calendar, approve the amendment to designate and add Hilton Lake #5 to the policy on Commission Designated Wild Trout Waters.

# Exhibits

- 1. Commission Designated Wild Trout Waters Policy
- 2. DFW memo and attachments, received Nov 22, 2019
- 3. Letter from Del Norte County Board of Supervisors, received Dec 10, 2019

#### **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission adopts the staff recommendations for items 5-11 under the consent calendar.

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

#### Today's Item

Information

Action □

Receive the executive director's staff report, including staff recruitment, sesquicentennial planning, website/document accessibility, California Law Revision Commission recommendation, delegations to staff, 2019 mountain lion necropsy report, and Dungeness Crab Task Force 2019 report.

#### Summary of Previous/Future Actions (N/A)

#### Background

#### Staffing and Recruitment

During the last year, several out-of-class assignments helped keep FGC operating. Last week Susan Ashcraft completed a year as the acting deputy executive director and returned to her position as FGC's marine advisor; as deputy she helped keep us moving forward in a multitude of ways, including for strategic planning and service-based budgeting. With Susan returning to her marine advisor position, Elizabeth Pope returned to DFW's Marine Protected Areas Management Program. We are grateful to DFW's Marine Region for loaning Elizabeth to us for the last year to support MRC and for allowing her to return the last two weeks to complete meeting materials and join us today. We want to acknowledge the great work of Susan and Elizabeth and thank them both for their valuable contributions.

Multiple recruitment efforts are currently in process; with limited staff, such efforts have been staggered.

*Deputy Executive Director.* After a competitive recruitment effort, staff is pleased to announce that Rachel Ballanti has been selected and accepted the offer to fill the position. Rachel joins the team from the California Department of Water Resources and brings a wealth of policy and program experience. We are fortunate she can join us today to assist with the meeting; her first official day with FGC is Mar 2.

Administrative Assistant: Interviews for filling the vacant position are complete and references are being checked; staff expects to make a hiring decision within the week.

*Regulatory Analyst*: Sheri Tiemann, a longtime member of the staff, unexpectedly retired last month. Recruitment efforts for her replacement are underway. Staff expects to hold interviews for this position in early Mar. Staff also plans to hold a proper farewell for Sheri when she is able and will notify commissioners when it is scheduled.

Sea Grant State Fellow: Rose Dodgen, our 2020 fellow, has joined FGC staff as of Feb 18. Rose is finalizing her master's in biological sciences from California Polytechnic State University, San Luis Obispo later this year. Her thesis is focused on abundance and length patterns of rockfish species from fisheries-independent and fisheries-dependent surveys on the central coast of California. She hopes that her research will help determine how best to integrate fisheries-independent data into stock assessments of rockfish.

# 150th Anniversary Celebrations

FGC and DFW turn 150 this year! The official anniversary date is Apr 2, 2020; initial preparations began last fall to commemorate the sesquicentennial. A number of activities will be scheduled throughout the year, beginning in Apr with a modest event on the north steps of the California State Capitol and a potential evening celebration at the Leland Stanford Mansion State Historic Park. Other activities include storytellers at future FGC meetings, a special issue of *Outdoors California*, a collection of historical public photos, a wildlife artwork competition, special tours at DFW wildlife areas and ecological reserves, and publications on the history of the two organizations. Another idea that has been suggested is creating a perpetual FGC award in recognition of outstanding conservation efforts. Staff will continue working with commissioners, DFW and stakeholders to advance the various activities.

#### Website / Document Accessibility

Meeting state-mandated accessibility standards continues to be a time-consuming challenge for staff, especially given the large volume of materials posted to the FGC website. To comply with website content accessibility standards, many staff members have taken an introductory course, but we have found that additional training is needed and ongoing. Challenges include trying to address software-specific requirements, tight deadlines and large volume of meeting materials, and the need to convert documents received by other agencies and the public. Staff continues to work to find solutions to this challenging situation.

#### California Law Revision Commission

Staff review of the California Law Revision Commission's (CLCR) tentative recommendation to revise the California Fish and Game Code, released last year, is still underway; the two-phase review process represents a significant workload. The recommendation includes a change in the name of the code book to the California Fish and Wildlife Code and, while not intended to be substantive, the proposal is a complete reorganization of the code. In the first phase, FGC staff is analyzing each CLRC comment and evaluating potential impacts to Title 14; our response is due no later than Jul 1, 2020. Consistent with the authority you granted the executive director in 2017, staff will develop and submit a response to CLRC on the first phase. The second phase response will focus on the reorganization and are due to CLRC no later than Jul 1, 2021.

# **Delegations to Staff**

FGC's authorities require daily actions to meet its responsibilities and, hence, it employs an executive director and other staff to assist in conducting FGC's operations. Staff reviewed its delegated authorities from FGC and determined that it would be advisable to develop a more complete list of delegated tasks (Exhibit 2). Staff brings this list to you as a draft for initial consideration and feedback, with the goal of returning in Apr 2020 with a revised version intended for adoption; at any time, FGC may amend the delegations.

# Mountain Lion Necropsy Report

To comply with Section 4807 of the California Fish and Game Code, DFW submitted its *2019 Mountain Lion Depredation Report* to FGC (Exhibit 3). As required, the report provides findings from necropsies conducted by FGC on any mountain lion taken for depredation and returned to DFW. FGC staff has submitted the report to the California State Legislature consistent with Section 4807 requirements.

# Dungeness Crab Task Force 2019 Report

Fish and Game Code Section 8276.4 requires the California Dungeness Crab Task Force (DCTF) to review and evaluate commercial Dungeness crab management measures and submit recommendations to the Joint Committee on Fisheries and Aquaculture, DFW, and FGC. The DCTF administrative team has submitted a 2019 report with specific recommendations, in partial fulfillment of that requirement (Exhibit 4).

# Significant Public Comments (N/A)

#### Recommendation (N/A)

#### Exhibits

- 1. <u>Staff Report on Staff Time Allocation and Activities</u>, dated Feb 12, 2020
- 2. Draft FGC delegations to staff, dated Feb 14, 2020
- 3. <u>DFW memo transmitting 2019 Mountain Lion Depredation Report</u>, received Feb 11, 2020
- 4. <u>Email from Rachelle Fisher and Kelly Sayce, on behalf of the DCTF Administrative</u> Team, transmitting the DCTF recommendations report, received Dec 11, 2019

#### Motion/Direction (N/A)
# 12B. EXECUTIVE DIRECTOR'S REPORT - LEGISLATIVE REPORT

# Today's Item

Information 🛛

Action

Review and discuss legislation 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 (below). DFW has provided a report on state bills it has identified as being of interest, including the current status of each (Exhibit 1).

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 Highlights for 2019-2020

- Jan 31, 2020: Last day for each house to pass bills introduced in that house in the odd-numbered year
- Feb 21: Last day for bills to be introduced in either house
- Apr 2-12: Spring recess (begins upon adjournment on Apr 2)
- May 8: Last day for policy committees to meet prior to Jun 1
- May 15: Last day for fiscal committees to meet prior to Jun 1
- May 29: Last day for each house to pass bills introduced in that house
- Jun 1: Committee meetings may resume
- Jun 15: Budget bill must pass by midnight

# Bills Introduced during the 2019-2020 Session

A number of the state assembly bills (AB) and senate bills (SB) identified in DFW's report (Exhibit 1, which provides the status and summary) may affect FGC's resources and workload or are potentially of interest:

- AB 1305 (Obernolte) Junior hunting licenses: eligibility: age requirement (introduced 2/22/2019)
- AB 1949 (Boerner Horbath) Fisheries: California Ocean Resources Enhancement and Hatchery Program (introduced 1/17/2020)
- AB 2028 (Aguiar-Curry) State agencies: meetings (introduced 1/30/2020)
- AB 2093 (*Gloria*) Public records: writing transmitted by electronic mail: retention (introduced 2/5/2020)
- SB 914 (Portantino) Firearms; hunting exemptions (introduced 2/3/2020)

A new bill that is not in Exhibit 1 that may be of interest is SB 937 related to agency websites and document accessibility.

• SB 937 (Hill) State agencies: web accessibility (introduced 2/6/2020).

Status: 2/7/2020: From printer. May be acted upon on or after March 8. Location: 2/6/2020 – S. RLS.

Summary: This bill would authorize a state agency to temporarily remove public documents from digital access if a justifiable impediment exists and the Director of Technology verifies the impediment prohibits full compliance and the state agency complies with certain requirements, including citing the reason for the document's removal and listing options and instructions for how to access the document offline. The bill would make any file or document removed after Oct 14, 2017, subject to these requirements.

#### Federal Legislation

• H.R. 30 (SAVES Act): Rep. Louie Gohmert (TX-1).

Status: House – 2/5/2019. Committeee on Natural Resources. Referred to the Subcommittee on Water, Oceans, and Wildlife.

Summary: Limits the protection of endangered and threatened species to species that are native to the United States, thus removing protection given to non-native species in the United States that are listed as threatened or endangered.

• H.R. 548 (FISH Act): Rep. Ken Calvert (CA-42).

Status: House – 2/4/2019. Committee on Natural Resources. Referred to the Subcommittee on Water, Oceans, and Wildlife.

Summary: 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 – 1/29/2020. House Natural Resources Subcommittee on Water, Oceans, and Wildlife – discharged.

Summary: Effort to preserve United States fishing heritage through a national program dedicated to training and assisting the next generation of commercial fishermen.

• H.R. 3742 (Recovering America's Wildlife Act (RAWA)): Rep. Debbie Dingell (MI-12).

Status: House – 12/5/2020. Discharged to committee; ordered to be reported (amended) by the Committee on Natural Resources.

Summary: Amends the Pittman-Robertson Wildlife Restoration Act to make supplemental funds available for management of fish and wildlife species of greatest conservation need as determined by State fish and wildlife agencies, and for other education and enforcement related purposes. The Secretary of the Treasury shall annually transfer \$1.3 billion to a fund established for the management and implementation of wildlife and habitat conservation and restoration programs.

• S. 2092 (Modernizing the Pittman-Robertson Fund for Tomorrow's Needs Act): Senator Jim Risch (ID).

Status: Senate – 7/11/2019. Read twice and referred to the Committee on Environment and Public Works.

Summary: Provides flexibility to state agencies to use Pittman-Robertson funds for the recruitment, retention, and reactivation of hunters and recreational shooters. The bill does not increase taxes or existing user fees, but would allow state fish and wildlife agencies to use existing revenues in new ways. This legislation is identical to H.R. 877 that was introduced earlier this year by Representatives Austin Scott (GA), Mark Veasey (TX), Debbie Dingell (MI), and Richard Hudson (NC).

# Significant Public Comments (N/A)

## Recommendation (N/A)

## Exhibits

1. DFW legislative report, dated Feb 10, 2020

## Motion/Direction (N/A)

# 12C. EXECUTIVE DIRECTOR'S REPORT – KELP LEASE TERMINATION

## Today's Item

Information 🛛

Action

Report of The Abalone Farm, Inc.'s termination of its lease for administrative kelp beds 204 and 207.

## Summary of Previous/Future Actions (N/A)

## Background

On Dec 2, 2019, FGC received written notice from Ray Fields, president of The Abalone Farm, Inc. (tenant) requesting termination for administrative kelp beds 204 and 207 (Exhibit 1).

The current lease agreement provides that if the tenant becomes unable to continue operating the lease for commercial kelp harvest for reasons beyond the tenant's ability to control, the tenant may terminate the lease after 30 days written notice to the State.

Based on correspondence and consultation with DFW, staff has determined that the termination notice was submitted as a result of the land owner's determination to not renew the shore-based facility lease for The Abalone Farm, Inc. and, therefore, the notice meets the requirements of Section 25 of the lease agreement. The lease has been terminated effective January 1, 2020.

# Significant Public Comments (N/A)

# Recommendation (N/A)

## Exhibits

1. Letter from Ray Fields, The Abalone Farm, Inc., received Dec 2, 2019

# Motion/Direction (N/A)

# 13. DEPARTMENTAL INFORMATION 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) Marine Region
- (C) Wildlife and Fisheries Division and Ecosystem Conservation Division
- (D) Law Enforcement Division

# Summary of Previous/Future Actions (N/A)

# Background

Verbal reports are expected at the meeting for items (A) through (D). DFW news releases of potential interest related to wildlife and inland fisheries are provided as exhibits C1-C5.

Under Item (B), the Marine Region report will include:

I. Update related to the Pacific Fishery Management Council, the International Pacific Halibut Commission (IPHC), annual recreational ocean salmon and Pacific halibut regulations, and automatic conformance to federal regulations.

IPHC held its annual meeting Feb 3-7 to determine area catch limits for the upcoming Pacific halibut season; the previous Washington-Oregon-California catch-sharing plan remains in effect.

DFW will hold its annual salmon information meeting on Feb 27 in Santa Rosa (Exhibit B1).

II. Update on Marine Life Management Act (MLMA) master plan implementation and completing a draft prioritization list of invertebrate fisheries for more focused management (see exhibits B2-B3).

# Significant Public Comments (N/A)

# Recommendation (N/A)

# Exhibits

- B.1 DFW 2020 salmon information meeting notice
- B.2 DFW presentation
- B.3 <u>MLMA master plan implementation work plan</u>, dated Feb 7, 2020
- C.1 <u>DFW news release: CDFW Awards \$11.35 Million for Greenhouse Gas Reduction</u> <u>Grant Project</u>, dated Dec 10, 2019
- C.2 <u>DFW news release: CDFW Awards \$10.1 Million for Fisheries Habitat Restoration and</u> <u>Forest Legacy Projects</u>, dated Dec 11, 2019
- C.3 <u>DFW news release: CDFW Releases Final Environmental Impact Report for Ballona</u> <u>Wetlands Ecological Reserve,</u> dated Dec 19, 2019

# STAFF SUMMARY FOR FEBRUARY 21, 2020

- C.4 <u>DFW news release: Roadkill Still Illegal to Possess on Jan. 1, Despite Passage of the</u> <u>"Wildlife Traffic Safety Act"</u>, dated Dec 23, 2019
- C.5 <u>DFW news release: Elk, Pronghorn Antelope Captures to Be Conducted in Northern</u> <u>California,</u> dated Feb 5, 2020

Motion/Direction (N/A)

# 14. ANNUAL TRIBAL PLANNING MEETING

## Today's Item

Information

Action 🛛

Discuss and potentially approve agenda for the March 18, 2020 annual tribal planning meeting.

## Summary of Previous/Future Actions (N/A)

## Background

In 2015, FGC adopted a policy on tribal consultation (Exhibit 1) that states, in part:

"Communication. Both FGC and tribes are faced with innumerable demands on their limited time and resources. In the interest of efficiency, FGC will annually host a tribal planning meeting to coordinate the upcoming regulatory and policy activities before FGC. The meeting will provide a venue for education about process, identifying regulatory and policy needs, and developing collaborative interests; this will include inviting sister agencies to participate."

Consistent with FGC's consultation policy, the first annual tribal planning meeting was held in Feb 2018 and included several agenda items related to FGC and its functions. A number of tribes and natural resource management agencies participated. The meeting was publicly noticed, which allowed members of the public to participate. FGC subsequently received feedback from tribal representatives that, from their perspective, the planning meeting was not as effective as it could be given public participation; it was suggested that FGC's policy is focused on tribes and sister agencies and, therefore, attendance should be limited to those entities and their representatives.

The second annual planning meeting was held in Feb 2019 and expanded upon the framework established in 2018. Unlike the first year, attendance in 2019 was limited to invited tribal representatives and natural resource management agencies. Feedback from the meeting was positive and tribal representatives indicated that the format was more amenable to a learning and collaborative environment; it was requested to continue the same format in future years.

For the 2020 annual tribal planning meeting, staff is prepared to send invitations to California's tribes and tribal communities as well as sister agencies, unless directed otherwise. Participation will be in person, by phone and by webinar. Proposed agenda topics are:

- FGC's Tribal Consultation Policy
- Recap of 2019 annual planning meeting
- Overview of FGC and its current 2020 rulemaking priorities
- Tribal priorities for 2020
- West Coast Ocean Alliance Tribal Caucus presentation
- FGC committee priorities
- Priorities for other natural resource management agencies
- FGC's adopted co-management vision statement and definition
- Opportunities for collaboration

# Significant Public Comments (N/A)

## Recommendation

*FGC staff:* Approve proposed agenda topics for FGC's Mar 18, 2020 annual tribal planning meeting.

# Exhibits

1. FGC's Tribal Consultation Policy

## **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission approves the agenda topics for its March 18, 2020 annual tribal planning meeting.

## 15. TRIBAL COMMITTEE

## Today's Item

Information

Action 🛛

Jan 17, 2020; TC, Los Alamitos

Aug 18, 2020; TC, Fortuna

Feb 21, 2020; FGC, Sacramento

Discuss updates and consider adopting the recommendation from the January 17, 2020 Tribal Committee (TC) meeting. Consider approving new topics to address at a future committee meeting.

## **Summary of Previous/Future Actions**

- Most recent TC meeting
- Today consider TC recommendation
- Next TC meeting

Background

## 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.

## **Meeting Summary**

TC met on Jan 17, 2020 in Los Alamitos. In addition to the regular staff, MRC, WRC and other agency updates, several topics were discussed: (1) Co-management definition, (2) FGC's annual tribal planning meeting, (3) levels of commercial kelp and algae harvest, (4) commercial kelp and algae harvest regulations, (5) pinniped predation studies, and (6) simplification of statewide inland sport fishing regulations.

## Co-Management Definition

The draft potential recommendation for a co-management definition was discussed at length by TC and meeting participants. Overall, there was support for the draft that was developed over two years, including from tribes participating in the meeting and through several letters from tribes received prior to the meeting. A coalition of northern California tribes suggested to strengthen the definition with several additions. Ultimately, TC chose to recommend the existing draft language (Exhibit 2), in part out of concern about timing and multiple tribes wanting to move forward with implementation.

## Annual Tribal Planning Meeting

TC reviewed topics discussed at the first two annual tribal planning meetings and provided feedback on what should be considered for this year's meeting. A suggestion was made to invite participation and a potential presentation from the West Coast Ocean Alliance Tribal Caucus. Proposed meetings topics are included under Agenda Item 14 for today's meeting.

## Commercial Kelp and Algae Harvest Levels and Proposed Changes to Regulations

Marine Region Manager Craig Shuman presented an overview of current and recent levels of commercial kelp and algae harvest, followed by a presentation about proposed changes to commercial kelp and algae harvest regulations.

#### Pinniped Predation Studies

DFW's Fisheries Branch Chief Kevin Shaffer provided an overview of pinniped predation studies. Kevin will complete a compilation of predation studies and return for the Aug 18, 2020 TC meeting for further discussion.

#### Statewide Inland Sport Fishing Regulations

Senior Environmental Scientist Karen Mitchell from DFW's Fisheries Branch presented the latest proposed changes to inland sport fishing regulations for purposes of simplification and increasing fishing opportunity.

#### **TC Recommendations**

Based on public comment and the meeting discussions, TC has one recommendation for FGC consideration:

1. Adopt the proposed definition of co-management as discussed and approved by TC on Jan 17, 2020.

## **New TC Topics**

No new topics are proposed at this time.

#### **Significant Public Comments**

- Two tribes wrote in support of the proposed definition, stating that it reflects respect among sovereigns, promotes collaboration, is long overdue, will help address the loss tribes have experienced to spiritual and physical well-being, and should be put in place in an expedited manner for the benefit of tribes and the environment (exhibits 3-4)
- 2. A consortium of 10 federally-recognized tribes in northern California supports retaining all language in the proposed definition of co-management, though suggests that, since the definition will set the tone of relationships for years to come, there are important concepts missing and recommends adding language related to co-management being a responsibility and commitment (in addition to being collaborative); specifically identifying California tribes and the state of California as the primary sovereigns participating in the co-management; articulating that each sovereign has its own unique roles, authorities and governance sructures; and acknowledging a shared value of promoting a respectful intergenerational relationship with nature (Exhibit 5).

#### Recommendation

*FGC staff:* Adopt the recommended definition, If FGC desires to include any additional language, add the topic of potential additions to the annual tribal planning meeting agenda.

*TC:* Adopt the recommended definition of co-management as approved at the Jan 17, 2020 TC meeting.

## Exhibits

- 1. <u>TC work plan,</u> dated Feb 13, 2020
- 2. Proposed definition of co-management from TC, dated Jan 17, 2020

- 3. <u>Email from Bo Mazzetti, Tribal Chairman</u>, Rincon Tribe of Luiseño Indians, received Jan 16, 2020
- 4. <u>Email from Erica M. Pinto, Chairwoman,</u> Jamul Indian Village of California, received Jan 29, 2020
- 5. <u>Email from Hawk Rosales, Executive Director,</u> InterTribal Sinkyone Wilderness Council, received February 11, 2020

## **Motion/Direction**

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission approves the definition of co-management as recommended by the Tribal Committee.

## OR

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission approves the definition of co-management as recommended by the Tribal Committee and adds the topic of potential additional language in the definition, as discussed today, to the annual tribal planning meeting agenda.

## 16. MARINE RESOURCES COMMITTEE (MRC)

#### Today's Item

Information  $\Box$ 

Action 🛛

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

#### **Summary of Previous/Future Actions**

٠	Most recent MRC meeting	Nov 5, 2019; MRC, Sacramento
•	Today consider approving draft MRC agenda topics	Feb 21, 2020; Sacramento
•	Next MRC meeting	Mar 17, 2020; MRC, Santa Rosa

## Background

#### MRC Work Plan and Draft Timeline

FGC directs committee work. The updated work plan (Exhibit 1) includes topics and timelines for items referred by FGC to MRC. In addition to standing agenda items (i.e., agency updates), draft agenda topics proposed for the Mar 2020 MRC meeting are:

- MLMA master plan: Implementation update
- Red abalone fishery management plan: Discussion and potential recommendation
- Programmatic environmental impact report (PEIR) for marine aquaculture: Discussion and potential recommendation
- Commercial kelp and algae harvest rulemaking: Discussion and potential recommendation
- Experimental fishing permit program (Phase II) development: Update and discussion
- Recreational Dungeness crab fishery: Update on draft options for regulation change intended to provide whale and turtle protections
- Cowcod recovery: Informational presentation and discussion

## **New MRC Topics**

DFW has requested to schedule for Mar 2020 a discussion on emerging management issues in the recreational swordfish fishery. FGC staff requests to initiate a discussion about placing a temporary moratorium on consideration of new state water bottom lease applications for the purpose of aquaculture.

## Significant Public Comments (N/A)

## Recommendation

*FGC staff:* Refer new MRC topics as recommended for Mar 2020 MRC meeting, and approve the draft agenda topics for the Mar 2020 MRC meeting.

## Exhibits

- 1. MRC meeting summary for Nov 5, 2019
- 2. MRC work plan, dated Feb 10, 2020

## **Motion/Direction**

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Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission approves the draft agenda topics for the Mar 2020 Marine Resources Committee meeting as proposed.

#### OR

Moved by \_\_\_\_\_\_ and seconded by \_\_\_\_\_\_ that the Commission approves the draft agenda topics for the Mar 2020 Marine Resources Committee meeting as proposed except

# CALIFORNIA FISH AND GAME COMMISSION RECEIPT LIST FOR PETITIONS FOR REGULATION CHANGE: RECEIVED BY 5:00 PM ON FEBRUARY 9, 2020 Revised 02/12/2020

Tracking No.	Date Received	Name of Petitioner	Subject of Request	Short Description	FGC Receipt Scheduled	FGC Action Scheduled
2019-027 AM 1	1/29/2020	Steven Rebuck	Reopen commercial abalone fishing at San Miguel Island	Reopen commercial red abalone fishing access for San Miguel Island.	2/21/20	4/15-16/2020
2020-001	1/20/2020	Keith Rootsaert	Emergency regulation for take of purple urchin in 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.	2/21/20	4/15-16/2020

# Petition 2019-027

Steve Rebuck Wed 01/29/2020 03:56 PM To:

• FGC <FGC@fgc.ca.gov>

Cc:

• Pope, Elizabeth@FGC <elizabeth.pope@fgc.ca.gov>

3 attachments (654 KB) FGC1\_Rev\_0619-3.docx; Rebuck edit-1-1-1-1-1.docx; Abalone-ARMP-appendix\_h31.pdf;

Ms. Melissa Miller-Henson Executive Director California Fish and Game Commission 1416 Ninth St. Sacramento, CA 95814

RE: Re-submission of Petition to for Regulatory Change, Tracking No. 2019-027

Dear Ms. Miller-Henson:

Attached are my attempts to meet your requirements, in regards to submission of a Petition for Regulatory Change. I want to thank you for your courteous letter of December 26, 2019 and allowing us to resubmit this petition. You and your staff have been very kind.

After 23 years of Moratorium, the 25 or so former commercial abalone divers who submitted petition back in December represent what may remain of the former 101 divers in 1997 who may still be equipped and and healthy enough to reengage in the commercial abalone fishery.

These men are ready to work with the Department of Fish and Wildlife and the Fish and Game Commission to reestablish California's fist commercial fishery.

I trust you will find our work satisfactory and qualified to to address the Fish and Game Commission in the near future concerning our request.

Thank you again.

Respectfully,

Steven L. Rebuck Agent, Former Commercial abalone Diver Members California – Fish and Game Commission **TO THE CALIFORNIA FISH AND GAME COMMISSION FOR REGULATION CHANGE** FGC 1 (Rev 06/19) Page 1 of 2

Tracking Number: (\_\_\_2019-027\_\_\_\_\_

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, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 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: i Steven L. Rebuck. 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 29.15. Abalone. 14 CCR, S. 45, 100, 200, 203, 205, 206, 209, 210, 211, 215, 218, 219, 220, 265, 3990
- **3. Overview (Required) -** Summarize the proposed changes to regulations: Restore recreational and Commercial harvest of red abalone Regulations, south of San Francisco, to pre-1998 status.
- **4. Rationale (Required) -** Describe the problem and the reason for the proposed change: See attachment: Rationale.

# **SECTION II: Optional Information**

- 5. Date of Petition: k Dec. 2019/Resubmitted Jan. 2020
- 6. Category of Proposed Change
  - □X Sport Fishing
  - □X Commercial Fishing
  - □ Hunting
  - Other, please specify: Click here to enter text.

State of California – Fish and Game Commission FILE N TO THE CALIFORNIA FISH AND GAME COMMISSION FOR REGULATION CHANGE FGC 1 (Rev 06/19) Page 2 of 2

7. The proposal is to: (To determine section number(s), see current year regulation booklet or <a href="https://govt.westlaw.com/calregs">https://govt.westlaw.com/calregs</a>)

 $X \square$  Amend Title 14 Section(s): Section 29.15. Abalone

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 2019-027. Or 
  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: July, August, September 2020.
- **10. Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents: See Rationale, Citations, and Supportive Literature.
- 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: Creates funding for DFW, jobs for citizens and coastal communities
- **12. Forms:** If applicable, list any forms to be created, amended or repealed:

Click here to enter text.

# SECTION 3: FGC Staff Only

Date received: Click here to enter text.				
FGC staff action: □ Accept - complete □ Reject - incomplete □ Reject - outside scope of FGC authority				
Tracking Number				
Date petitioner was notified of receipt of petition and pending action:				
Meeting date for FGC consideration:				
FGC action:				
□ Denied by FGC				
Denied - same as petition				
Tracking Number				
$\Box$ Granted for consideration of regulation change				

Rationale: Former Commercial Abalone Diver Support for Abalone Recovery and Management Plan, Appendix H (Submitted by and petitioned by "Former Commercial Abalone Diver Members", aka "Abalone Commercial Constituents", title page A-H, Steven L. Rebuck, Agent, January 2020.).

" A biomass estimate of 3 million emergent abalone indicate a harvestable population of 75,000 to 150,000 red abalone at SMI (San Miguel Island). An initial total allowable catch (TAC) of 15,000 red abalone is proposed at SMI. Harvesting 10-20% of those abalone falls within the slot size should have a negligible effect on the population as a whole." Abalone Recovery and Management Plan, Appendix H, Page H-9

#### QUALIFIERS

- This rationale is not for an "Experimental Fishery" although this term has been used throughout language development. We propose to re-establish fishing regulations to pre-1998 status: F&G Sections, 8300, 8300.1, 8305, 8305.5, 8305.8 to 8305.11, 8306 to 8306.3, 8306.7, 9306.9, 8308, 8309, 8310, 8311, 8312, 8313, 8314. And/or as renumbered.
- 2) The range of red abalone, Haliotis rufescens, is Sunset Bay, Oregon to Bahia Tortugas, Baja, Mexico.\_1/.
- 3) Red abalone, <u>Haliotis rufescens, are not a State or Federal</u> <u>threatened or endangered species.</u>
- 4) Following passage of the Marine Life Protection Act (MLPA) in 1999, two Marine Protected Areas (MPAs) have been established at SMI:

"MPAs for the Channel Islands have been implemented by the Fish and Game Commission. There are two that will effect abalone populations at SMI. The Judith Rock MPA will enclose the area from Judith Rock to near Point Bennett. This area, which includes Adams Cove, contains prime abalone habitat and former harvest ground. It figured large in the former fishery and continues to show large populations of red abalone. An MPA in this location will meet the MPA objective of protecting representative southern shore SMI habitat and inshore species like red abalone." Appendix H page H-6.

5) We propose using Abalone Advisory Group (AAG) Fishery Management Option A: Red Abalone Demonstration Fishery. \_2/

- 6) 25 of the former 101 commercial abalone divers of California support, by petition (on file) the use of the Abalone Recovery and Management Plan Appendix H (A-H)\_3/ as written, an appropriate management vehicle to reopen San Miguel Island, Santa Barbara County, for commercial and recreational red abalone diving.
- 7) Multiple studies have been produced demonstrating the possibility of reestablishing commercial and recreational fisheries at San Miguel Island. \_2,3, 4, 5, 6, 7, 8, 9, 10, 11/.
- 8) The Marine Life Management Act (MLMA) of 2008 establishes and cites an "adaptive management" protocol that allows fishermen to inform management utilizing "fishery dependent" and "fishery independent" data collection methods. This red abalone fishery represents a first in collaborative effort that invokes the spirit and intent of the MLMA. Funding for data collection can come from the fishery itself in the form of resource rents. Other potential net positive opportunities that could be integrated are collaborative habitat monitoring , kelp forest restoration and purple urchin removal.
- 9) The SMI red abalone fishery has been in moratorium for 23 years:

" *SMI has been shown to have a viable population (red abalone) able to withstand continued commercial and recreational harvest for 45 years* (Note: Approx. 2010. Now 55 years). *The commercial fishery at SMI consisted of 125,000 pounds of red abalone of approximately 32,000 red abalone per year (CDFG conversion rate of 3.75 pounds per red abalone. In 5 years* (Note: 2002) *since closure an estimated 600,000 pounds or 160,000 abalone have remained unharvested at SMI."* (Note: As of 2020 and 23 years of closure, extrapolated data could represent 2,760,000 pounds and/or 147,200 red abalone not harvested since 1997). Appendix H page H-6.

# HISTORY

Drafting of what became A-H began in August 19, 2005 with the submission of a plan titled: "Components of an Experimental Commercial Red Abalone Fishery", Steven L. Rebuck, to the California Fish and Game Commission (Commission). Commissioner Michael

Flores requested CDFG staff (John Ugoretz) include this submission into the ARMP draft, Alternative 1. By September 2005, the California Abalone Association (CAA) had created a subcommittee to explore and draft a plan for San Miguel Island. A DRAFT of this plan was submitted to the Commission September 30, 2005. At this meeting, Executive Director, Robert Treanor acknowledged the Commission had directed staff to include our "experimental fishery" into the ARMP. SMI surveys occurred 2006, 2007, 2008\_4, 5, 6/. This effort became Alternative 8. Within a couple years, a Technical Panel (TP) was formed and began drafting language for what became Appendix H, including a Review Committee\_7/. This effort coincided with the appointment of the Abalone Advisory Group (AAG) and their 2010 report.

## JUSTIFICATION

A-H, as crafted, and included with the ARMP, offers a Fishery Management Plan (FMP) for SMI. A-H contains the following:

\* Suggests use of ARMP required Index Sites, in coordination with California Department of Fish and Wildlife (DFW), Director's Abalone Advisory Committee (DAAC), National Park Service (NPS)/Kelp Forest Monitoring Program (KMP), and the California Abalone Association.

\* Identifies Collaborative Abalone Research Program (CARP) and Adams Cove, Castle Rock, and Crooks Point as Index Sites. CAA had previously installed on monitoring site at Tyler Bight, monitored by NPS/KMP.

\*Identifies a Total Allowable Catch (TAC) for both commercial and recreational abalone fishing for red abalone only.

\* Fisheries Management: Integrates Marine Protected Areas (MPAs) at SMI: Judith Rock, near Pt. Bennett, which includes Adams Cove.

\* Use of Position Indicating Transponders (PIT).

\* Identifies Landing Taxes and Resource Rents

\*Creates Fishery Dependent and Fishery Independent data which DFW does not currently have.

\* Creates a financial stream for DFW, which they currently does not have.

## SUPPORTING LITERATURE

- 1. Cox, Keith, 1962, California Abalones, Family Haliotidae, Fish Bulletin 118, California Department of Fish and Game.
- 2. Abalone Advisory Group Report, January 29, 2010, Management Options for Establishing a Potential Red Abalone Fishery at San Miguel Island, For Presentation to the Marine Resources Committee of the California Fish and Game Commission, February 16, 2010.
- 3. Appendix H. Proposed Amendment to Alternative 1 in the ARMP as submitted by Abalone Commercial Constituents to the Fish and Game Commission, An Amendment to the Abalone Recovery and Management Plan's Alternative 1.
- 4. Components of Proposed Experimental Fishery Plan for Red Abalone, Draft 4, October 9, 2005.
- 5. Taniguchi, Ian, D. Stein, K. Lampson, The San Miguel Island Red Abalone Resource: Results of Survey Conducted from July-October 2007, Marine Invertebrate Management Project, DFG.
- Appendix B: DFG San Miguel Island Red Abalone Surveys (2006, 2007, 2008).J
- 7. Jlao, Yan, L. Rogers-Bennett, P. Crone, J. Butler, April 10, 2009, Appendix H.
- 8. Prince, Jeremy, California Abalone Marketing Association, February 6, 2012/Revised May 30, 2012, Proposal for Red Abalone Research Fishery at San Miguel Island (SMI).
- 9. Bren School, 2010, Economic Viability and Sustainable Management of a California Red Abalone Fishing Cooperative.
- San Miguel Island Red Abalone Fishery Considerations-Recommendation, December 2012, Marine Region, California Department of Fish and Ga
- 11.Braje, Todd, J. Erlandson, TC Rick, RL Vellano, 2008, Human Impacts on Ancient Shellfish: 10,000 year record from San Miguel Island, California, Journal of Archaeological Science.

#### Appendix H. Proposed Amendment to Alternative 1 in the ARMP as submitted by Abalone Commercial Constituents to the Fish and Game Commission

# H.1 An Amendment to the Abalone Recovery and Management Plan's Alternative 1

## H.1.1 Introduction

California Department of Fish and Game (CDFG) biologists have the responsibility of managing the state's spatially complex abalone populations. Due to minimal financial resources, collecting the data necessary for successful management makes their task impossible. Other than by continued closure, the framework for management proposed in the Abalone Recovery and Management Plan (ARMP) will be unable to address the challenge of assessing and managing Southern California's spatially intricate renewable abalone resource.

There is an opportunity to manage red abalone stocks at San Miguel Island (SMI) with an experimental fishery modeled after a successful program in Australia. In Western Australia, Cape Leeuwin abalone divers rehabilitated an area of approximately 1,500 hectares and have raised their Total Allowable Catch (TAC) from 7 tons to 30 tons. This program shows what can be done by fishers if proper incentives for the fishers are in place. This program is described by Dr. Jeremy Prince in *Proceedings of the North Pacific Symposium on Invertebrate Stock Assessment and Management* 1998, and *The Bare-foot Ecologist's Toolbox*, 2001.

Prince's published findings on the Western Australian success show what might be done at San Miguel Island in the Northern Channel Islands. He refers to "Tyranny of Scale" in his papers on optimizing Australia's abalone management. This term describes the mistake of managing discrete stocks sometimes comprised of less than a square mile with management strategies applied over a scale of hundreds of miles. A "Tyranny of Scale" operates in California's abalone management today with continued area depletions occurring within a management zone comprising half the state. Unfortunately, the Abalone Recovery and Management Plan (ARMP) and a lack of funding will perpetuate this "tyranny."

The information to micro-manage the Channel Island abalone stocks is available and can be gathered from and by the fisher/divers who formerly harvested abalone in this area. These fishers, many of whom are still diving the area for sea urchins, have intimate knowledge of SMI; the reefs, habitats and habits of red abalone, including biology, spawning, and the effects of temperature and food availability. This information has not been accessed and made available to managers.

As has been shown at Cape Leeuwin, it is economically feasible to manage abalone populations intensively. While the intensive assessment needed to manage SMI is beyond the level of resources available to CDFG biologists, the infrastructure (boats, equipment, and divers) required for such assessment is already in place and used daily by the diver/fishers.

## H.1.2 Proposal

Initially, the index sites called for in the Abalone Recovery and Management Plan (ARMP) would be placed at SMI. The monitoring sites at SMI would be installed by the California Abalone Association (CAA) using Abalone Resources Restoration and Enhancement Program funds administered by the Director's Abalone Advisory Committee (DAAC). These sites would conform to National Park Service Kelp Forest Monitoring (NPS KFM) and CAA site already in place and follow the KFM Handbook data gathering protocols. Sites would be chosen by CAA divers to reflect areas of good abalone habitat. Additionally, these sites would be chosen from areas that were formally "heavily fished." Such "heavily fished" sites are currently being used by CDFG in Northern California to monitor and manage abalone populations. While in Southern California, other than the one SMI CAA site, there are no sites placed specifically for monitoring red abalone.

Data has been gathered at the existing CAA SMI Tyler Bight site as a joint effort between NPS and CAA. Future data gathering efforts for red abalone at SMI from CAA sites would involve collaboration between CDFG biologists and possibly university biologists.

It is proposed that the installation of these monitoring sites be initiated using DAAC funds. In the future, such monitoring sites could also be installed at Santa Rosa Island (SRI) and Santa Cruz Island (SCI). As discussed below in the section on MPAs, these sites would also aid in tracking the efficacy of proposed MPAs and could be placed inside or outside of MPAs to augment existing monitoring sites.

When data indicates that red abalone densities and size frequencies warrant and while continued protection remains in place for all species in all other areas, an experimental Total Allowable Catch (TAC) harvest would be allowed for Red Abalone at SMI.

## H.1.3 Discussion

The harvest of red abalone at SMI was consistent over time (Figure 1).



It is postulated that the slower growing abalone at SMI were successfully protected by the 7 <sup>3</sup>/<sub>4</sub> inches (197 mm) commercial size restriction and the exploitation rate which was influenced by many factors. Red abalone

populations at islands to the east of SMI exhibit faster growing characteristics which effectively shortened the time available for breeding opportunities of individual abalone (Prince, personal communication). The remoteness of SMI inhibited added detriment of a large sport take as occurred at the Channel Islands further to the east. SMI was affected less by the onset of Withering Syndrome (WS) which was a major factor in the declines at the eastern Channel Island abalone populations. Those eastern islands experienced warmer water in the 1980's and 1990's which caused subsequent greater loss of food sources for abalone increasing stress, reproductive dysfunction and the occurrence of WS (Tegner et al., 2001).

The Pacific Decadal Oscillation Index, an index of ocean temperature, (Figure 2) correlates with the failure of red abalone stocks at SCI, which occurred after the onset of much warmer ocean temperatures after 1977.



The red abalone population decline at SCI is indicated here in graph of commercial red abalone landings from SCI (Figure 3). These figures demonstrate the inability of red abalone stocks to recover from unrelenting sport and commercial harvest compounded by warm water perturbations.



The conditions that drove the failure of stocks at SCI did not occur at SMI. At the time of the closure in 1997, there were still abundant populations of red abalone at SMI and harvest continued until the day the fishery was closed. Colder ocean temperatures since the 1997-1998 El Nino have facilitated recruitment and growth there. The ARMP deems management changes

predicted by population density and size frequency; however at this time there is insufficient data available to manage with confidence, other than with fishery closure.

FG Code 5522(6)(C) stipulates that the ARMP shall contain, "The reproductive importance of the entire ecosystem of those areas proposed for reopening to harvest and the potential impact of each reopening on the recovery of abalone populations in adjacent areas."

The question, "How far can larvae travel?" is of interest to biogeographers and others interested in colonization occurring on geologic time scales. Fishery managers, who should be interested in time scales approximating human life, might better ask, "Where will most of the recruitment occur?" Should a fishery be managed for the minority of individuals and larvae that might travel record distance or should it be managed for the majority that don't travel far at all (Prince 1989)?

The exact reproductive importance of a proposed harvest of 15,000 individuals from an estimated population of 3 million emergent abalone at SMI is difficult to assess. The areas to remain closed adjacent to SMI are a minimum of 3 miles from the island. Prince et al. (1987, 1988) measured larval dispersal of *H. rubra* at less than 50 meters. McShane et al. (1988) concluded recruitment must derive principally from local parents. In a review of abalone ecology (McShane, 1992) considered that wider dispersal was possible. Shepherd et al (1992a) concluded larval transport of *H. laevigata* of hundreds of meters was possible. Tegner (1992) concluded that *H. fulgens* larvae were transported hundreds of meters to kilometers. All of these studies implied local recruitment (Shepherd and Brown, 1993).

Considering the literature cited above and the small percentage of the estimated population harvested, the risk to recruitment and impact on stocks at Santa Rosa Island, Santa Cruz Island, and mainland areas from such a harvest at SMI would be low.

# H.1.3.1 San Miguel Island Experimental Red Abalone Fishery

## Monitoring

It is proposed that DAAC funds be used to set up permanent abalone monitoring sites at Adams Cover, Castle Rock, and Crook Point. These sites would be consistent with the CAA site at Tyler Bight which was constructed to conform with the NPS Kelp Forest Monitoring sites. While CAA's concern is with abalone, the protocols exist in the NPS KFM Handbook to monitor many species from such sites. Since an MPA has been established at Adams Cove a monitoring site there would be an experimental control that would supply data from an unfished area.

The NPS monitoring site at Hare Rock is within the MPA on the east side of SMI. A monitoring site was proposed for the east side in an area of similar habitat outside MPA boundaries. However, the east side reserve at SMI has taken the whole area so this is not feasible.



Figure 4. SMI showing maximal extent of surface kelp canopy(stippled area) and existing and proposed monitoring sites. Grid is one nautical mile.

CAA has installed one monitoring site at Tyler Bight (California Abalone Association, 2002). That project showed the ability of fisher/divers to construct such sites at reduced cost and work with NPS divers to collect data over time. The CAA recently assisted in the construction of sites modeled after NPS KFM sites at San Clemente Island for the Navy's environmental monitoring program.

#### Collaborative Abalone Research Program (CARP)

Index sites at Castle Rock, Adams Cove, Tyler Bight (in place), and Crook Point would be installed by CAA. These sites would anchor the CARP's activities. Monitoring of size frequency and density would be augmented with Artificial Recruitment Modules and other experiments to help answer basic questions concerning aspects of red abalone population structure, habits, and limits.

Experiments including growth/tagging, settlement tracking, and basic oceanographic condition monitoring could be accomplished. Government agencies and academia could use the monitoring sites for their research and would be encouraged to do so. The CAA/DAAC could provide basic logistics and In-Kind support for a wide range of projects.

The CAA has already installed a site at Tyler Bight on SMI. This site is being monitored by the NPS Kelp Forest Monitoring team in conjunction with CAA divers. They recently acquired data for the second year from the site.

It is proposed that the installation of these monitoring sites be initiated using DAAC funds regardless of the decision concerning the proposed experimental fishery. Such monitoring sites should also be installed at Chickasaw Wreck, Santa Rosa Island and Forney's Cove, Santa Cruz Island. As discussed in the section on MPAs, such sites would also aid in tracking the efficacy of MPAs and could be placed inside or outside of MPAs to augment existing monitoring sites.

#### Management Plan

When densities warrant and while continued protection remains in place for all species in all other areas, a Total Allowable Catch (TAC) harvest would be allowed for Red Abalone at SMI. SMI has been shown to have a viable population able to withstand continued commercial and recreational harvest for *forty-five years*. The commercial fishery at SMI consisted of 125,000 pounds of approximately 32,000 red abalone per year (CDFG conversion rate of 3.75 pounds per red abalone). In the five years since closure an estimated 600,000 pounds or 160,000 abalone have remained unharvested at SMI (see Figure 1).

Size frequency data from SMI indicate 2.5% - 5% of emergent abalone are harvestable using a slot limit of 197mm-203mm (CDFG cruise reports, CAA San Miguel Island Red Abalone Project). A biomass estimate of 3 million emergent abalone indicate a harvestable population of 75,000 to 150,000 abalone in the slot size range of 197mm-203mm.

This alternative would allow a harvest to occur at SMI when data indicates sufficient density. The harvest would be restricted by a TAC. A slot size would be used, i.e. maximum as well as minimum size restriction. Position indicating transponders would be used on all vessels participating in the harvest. Trip plans would be telephonically recorded and logbooks detailing fishing effort would be kept. A method of recording and keeping track of individual fishermen and their contribution to filing the TAC would be styled after the abalone fishery plan for Tasmania where such methods have been in use for many years (Review of the Management Plan of the Tasmanian Abalone Fishery, 1999). A "resource rent" of 10% would be levied on the ex-vessel value of the harvest. These funds would pay not only for the maintenance of the fishery but also for a program of collaborative monitoring and research involving the harvesters.

A portion of the harvest at SMI could be allocated to the sport sector. It could be administered with a special tag sale and reporting system. The sport size limit would be the same as the commercial.

Restarting the fishery will serve to maintain the fishing community, which can help in increasing understanding of the fishery through data collected during harvest and collaborative research sponsored by the "resource rent." The incentive of a restarted fishery will encourage fishermen's participation in the program and invest them with a stake in the outcome of successful abalone fishery management. A restarted fishery will also provide funds to operate the research program necessary to sustainably harvest this valuable resource.

## Marine Protected Areas (MPAs)

MPAs for the Channel Islands have been implemented by the Fish and Game Commission. There are two MPAs that will effect abalone populations at SMI. The Judith Rock MPA will enclose the area from Judith Rock to near Point Bennett. This area, which includes Adams Cove, contains prime abalone habitat and former harvest ground. It figured large in the former fishery and continues to show large populations of red abalone. An MPA in this location will meet the MPA objective of protecting representative southern shore SMI habitat and inshore species such as red abalone. The other MPA at SMI is on the Eastern side. The area of this MPA, while containing some abalone does not enclose large red abalone populations and was not a large factor in the former fishery. NPS Kelp Forest Monitoring data for Hare Rock, a monitoring site which lies within the boundary of the MPA, has never shown emergent red abalone (David Kushner, personal communication).

One of the stated purposes of MPAs is fisheries management. In the case of abalone fishery management the efficacy of no-take areas is questionable. Benthic, sedentary species such as abalone that have little larval dispersal are good candidates for achieving near virgin biomass levels inside reserves. However, they are not likely species for improvement of fishery yields outside reserves through reserve or closed-area management (Parrish, 1999). Nonetheless, these reserves can provide needed data from an unfished area and assurance against population collapse should overfishing occur outside of reserves in a restarted fishery.

#### Management Measures

Harvesting only the zone comprised of SMI would be assured by the installation of a Position Indicating Transponder (PIT) aboard vessels participating in the fishery. The cost of PITs, their installation and monitoring would be borne by the participants.

#### Species-specific Considerations

Only red abalone at SMI would be harvested under this plan.

## Gear Restriction

Hookah gear would be used by the commercial sector and SCUBA or breath hold by recreationalists. Former restrictions on abalone picking bars would remain.

## Size Limits

For both commercial and sport sectors the minimum size would be 7 <sup>3</sup>/<sub>4</sub> inches (197 mm) while the maximum size would be 8 inches (203 mm). Such a "slot size limit" would ensure conservation of both small and large individuals within aggregations, while still allowing harvest.

The reproductive capacity of large abalone is well known. While there may be an issue of fecundity of such large, old abalone it is believed that the presence of large individuals helps create conditions conducive for settlement and recruitment.

Another option for determining harvest size is "concept fishing" as practiced by ab divers in the Cape Leeuwin area of Western Australia. These fishers only harvest abalone that have finished their rapid growth phase (in terms of both shell length and volume), which is judged by shell depth and roundness. The use of such a size index allows more breeding time for individual abalones. The "concept fishers" only harvest an area once a year and refrain from harvesting if the aggregation has not rebuilt since the previous year. They also harvest no more than 30% of an aggregation. They harvest abalone from across the size range available rather than just taking the largest. These concepts were developed by the fishers themselves and demonstrate the sophistication possible from such home-grown ideas (Prince, 1988).

#### Seasonal Closures

A three month season in the summer (July, August, and September) would allow for ample time to fill the TAC, facilitate monitoring of the TAC, and allow for an orderly fishery.

#### Total Allowable Catch, San Miguel Island

There are 3.57 square nautical miles of macrocystis kelp canopy during maximum coverage at SMI. Using maximum kelp canopy as a proxy for rocky substrate and adding another square mile of rocky substrate not covered with *macrocystis* gives 4.57 square nautical miles of red abalone habitat at SMI.



Figure 4. SMI showing maximal extent of surface kelp canopy(stippled area).

The former fishery harvested 20,000 to 35,000 red abalone per year from this area. Data from fishery independent research (CDFG cruise reports, 97-M-5 and 97-M-1) shows 1% of red abalone at SMI were of legal size (193 mm) in early 1997 at the end of the fishery. Landings from SMI in the three months (March, April and May) that were fished in 1997 were 113,000 pounds or 30,000 (3.75 pounds per red abalone, CDFG conversion rate). It should be noted that the assessment cruises made by CDFG in 1997 were accompanied by CAA members and that the areas surveyed were all heavily-fished areas.

The landing records and size frequency data indicate there were 3,000,000 emergent red abalone at SMI in 1997. In the five years since closure approximately 120,000 individual abalone were not harvested. Data from CDFG cruise report, 99-M-5, and Artificial Recruitment Modules at the Tyler Bight monitoring site indicate that recruitment has been occurring. Today 11.6% of

emergent red abalone at SMI are commercial legal size (197 mm) or greater (CDFG cruise report, 01-M-3).

Size frequency data from SMI (CDFG cruise reports, CAA San Miguel Island Red Abalone Project) indicate 2.5%-5% of emergent abalone are harvestable with a slot size limit of 197 – 203 mm. A biomass estimate of 3 million emergent abalone indicate a harvestable population of 75,000 to 150,000 red abalone at SMI. An initial total allowable catch (TAC) of 15,000 red abalone is proposed for SMI. Harvesting 10-20% of those abalone falling within the slot size should have a negligible effect on the population as a whole.

## **Allocation**

If there is interest from the recreational sector these divers could be allocated 3,000 abalone at SMI. The sport sector would gain access to the TAC by a special tag sale.

The commercial sector could divide its TAC equally, an Individual Fishery Quota (IFQ), among those fishers who held a permit in 1997 and wish to participate. Alternatively, quota could be initially distributed amongst the participants several different ways. Transferability of quota could be an added mechanism to reduce the number of participants by allowing consolidation of quota shares if desirable. Harvest rights of some form would be decisive in the success of any future fishery plan by providing the incentives necessary to invest the fishers with a stake in the outcome of successful fishery management. Such issues should be decided by the fishers themselves with government oversight and approval.

# Abalone Take Reporting System

Commercial participants would notify CDFG to lodge a recorded phone message of intention to fish before leaving on a fishing trip. Fishers would also report 1-2 hours prior to reaching port/unloading, giving estimated weights and estimated time of arrival. This would make fishers subject to spot checks and would encourage a higher degree of compliance. Logbooks containing information on specific location fished, conditions encountered and time spent diving would be sent to fishery managers within one week. Normal CDFG fish landing tickets, including price paid, would also be required. All red abalone taken commercially at SMI would be landed at Santa Barbara Harbor.

All abalone harvested would have a plastic tag (Scan Systems, Canada) attached upon harvest. Different color tags would be used for commercial and sport catches. The tags would carry a tracking number relating to fisher information. This tag would be attached to the gill hole apertures of the abalone when boated. The tracking number of each tag would be recorded on the commercial fish landing receipt, commercial logbook and sport catch report slips.

Sport sector participants would return report slips issued for each tag detailing area fished, conditions encountered, and time spent making catch within one week.

#### Resource Rent

*Commercial sector* - In addition to the 0.0125 cents and 19.5 cents per pound already required on commercial abalone landings (FG Code 8051 and 8051.3), an additional "resource rent" of ten percent of the landed value will be collected. This money would first be used to administer the commercial segment of the fishery. Any funds left over would be deposited in the Fish and Game Preservation Fund and be used in the Abalone Resources Restoration and Enhancement Program defined by FG Code 8051.4.

The estimated ex-vessel price of \$60 per abalone would yield \$6 per abalone. A commercial catch of 12,000 abs at SMI would produce \$72,000 in "rent."

Sport Sector - For any sport sector a flat fee for each tag purchased would be assessed. Any participant would also possess a sport fishing license with abalone stamp. Proceeds from sport sector tag sales would be used to administer the fishery. Funds left after administration costs would be deposited in the Abalone Restoration and Preservation Account within the Fish and Game Preservation Fund and used as defined by FG Code 7149.9.

A similar charge of \$6 per abalone would yield \$18,000 for administration of tag sale for 3,000 sport-caught red abalone from SMI.

## Appendix H – Literature Cited

California Abalone Association, Installation of a monitoring transect and artificial recruitment modules, and collection of data for Red Abalone (Haliotis rufescens) at Tyler Bight, San Miguel Island. 2002. Jim Marshall, jmarsh@silcom.com Report available at www.cisanctuary.org/cmrp/pdf/marshall2.pdf

California Department of Fish and Game, *Cruise Reports, Nearshore Invertebrates*, 1993-2001.

McShane, P., Black, K., and Smith, M. 1988. *Recruitment processes in Haliotis rubra and regional hydrodynamics in southeastern Australia imply localized dispersal of larvae.* J. Exp. Mar. Biol. Ecol. 124; 175-203

McShane, P, 1992. *The early life history of abalone, a review.* p. 120-138. *In* Shepherd, Tegner, and Guzman del proo [eds.] Abalone of the World: biology, fisheries, and culture. Blackwell Scientific Pubs. Ltd., U.K. 608 p.

Parrish R., 1999. *Marine Reserves for Fisheries Management: Why Not?* CalCOFI Rep., Vol. 40, 1999

Prince, J., Sellers, T., Ford, W., and Talbot, S. 1988. *Confirmation of a relationship between the localized abundance of breeding stock and recruitment for Haliotis rubra.* J. Exp. Mar. Biol. Ecol. 122; 91-104.

## Appendix H – Literature Cited, cont.

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Prince, J., Walters, C., Ruiz-Avila, R. and Sluczanowski, P. 1998. *Territorial user's rights and the Australian abalone fishery. In* Proceedings of the North Pacific Symposium on Invertebrate Stock Assessment and Management. Can. Spec. Publ. Fish. Aquat. Sci. 125. pp. 367-375.

Prince, Jeremy D. *The Bare-foot Ecologist's Toolbox.* 2001 Biospherics P/L PO Box 168, Southe Fremantle, WA 6162, Australia

*Review of the Management Plan of the Tasmanian Abalone Fishery, 1999.* Department of Primary Industries, Water and Environment GPO Box 44A, Hobart TAS 7001.

Shepherd, S., Lowe, D., and Partington, D. 1992. *Studies on southern Australian abalone.* XIII. Larval dispersal and recruitment. J. Exp. Mar. Biol. Ecol. 164; 247-260.

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Tegner, M. 1992. *Brood stock transplants as an approach to abalone stock enhancement.* p. 461-473 *In* Shepherd, Tegner, and Guzman del proo [eds.] *Abalone of the World: biology, fisheries, and culture.* Blackwell Scientific Pubs. Ltd., UK. 608 p.

Tegner, M., Haaker, P., Riser, K., Vilchis, I., 2001. *Climate variability, kelp forests, and the southern California abalone fishery.* Journal of Shellfish Research, Vol. 20, No. 2, pp. 755-763.

Personal communication

David Kushner, National Park Service, Kelp Forest Monitoring Program, Channel Islands National Park, 805-658-5773

Dr. Jeremy Prince, Biospherics P/L, PO Box 168, South Fremantle, WA 6162, Australia. biospherics@ozemail.com.au

# **Central Coast Urchin Petition**

#### Keith Rootsaert <keith.rootsaert@salasobrien.com>

Mon 01/20/2020 11:01 AM

To: FGC <FGC@fgc.ca.gov> Cc: Ray, James@Wildlife <James.Ray@wildlife.ca.gov>; Rogers-Bennett, Laura@Wildlife <Laura.Rogers-Bennett@wildlife.ca.gov>

1 attachments (163 KB)FGC1\_Rootsaert submitted.docx;

Dear FGC,

Please find attached my petition for regulatory language change.

I would like to have this on the agenda for the February 20 meeting.

Thanks,

Keith Rootsaert Construction Project Manager SOBe Construction, Inc. | expect a difference | www.salasobrien.com 877.725.2755 (o) | 408.899.3101 (d)



State of California – Fish and Game Commission **PETITION TO THE CALIFORNIA FISH AND GAME COMMISSION FOR REGULATION CHANGE** FGC 1 (Rev 06/19) Page 1 of 3

Tracking Number: (2020-001)

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, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 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: Keith Rootsaert Address: Telephone number: Email address: keith.rootsaert@salasobrien.com

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Section 200 and 205, Fish and Game Code

Overview (Required) - Summarize the proposed changes to regulations:

Request to add Section 29.12, Title 14, CCR, as follows:

#### § 29.12. Sea Urchin

- (a) The daily bag limit for sea urchin taken while skin or SCUBA diving at Tanker's Reef and the Doc Ricketts Marine Conservation Area 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) Edward F. Ricketts SMCA is bounded by straight lines connecting the following points in the order listed:[3] 36°36.50'N 121°53.37'WCoordinates: 36°36.50'N 121°53.37'W, 36°37.25'N 121°53.78'W, and 36°37.10'N 121°54.09'W,then the mean high tide line along the coast back to the breakwater of Monterey Harbor.
- (d) There is no possession limit for sea urchin.



State of California – Fish and Game Commission **PETITION TO THE CALIFORNIA FISH AND GAME COMMISSION FOR REGULATION CHANGE** FGC 1 (Rev 06/19) Page 2 of 3

Authority cited: Sections 200 and 205, Fish and Game Code. Reference: Sections 200 and 205, Fish and Game Code.

3. Rationale (Required) - Describe the problem and the reason for the proposed change: The urchin barren problem in the central coast was brought before the Commission previously and was publicly noticed as 2019-003. Petition 2019-003 is referenced as justification for this petition. I believe that the denial of this petition by CDFW was not based on objective scientific criteria. The primary reason for denial was due to Southern sea otters at the site, which is not a factual condition and a miscalculation. The second reason for denial was because this was not considered an emergency, even though this opinion was shared by Sonke Mastrup, CDFW. The emergency condition designation was perhaps more subjective, so I am submitting this as a regular rulemaking petition.

It has been a year since this matter was brought before the commission and the condition has only worsened and become more desperate. Reef Check data shows that the number of purple urchins on the Monterey Peninsula have doubled in 2019 from 10 urchins /m<sup>2</sup> to 21 urchins/m<sup>2</sup>. There is a new cohort of urchins in the 2cm size class. An experiment conducted by Reef Check California reveal that removing only purple urchins is insufficient to restore kelp and red urchins must be removed as well for kelp restoration. This is no longer a single species issue and that is significantly different from what was proposed previously. It is time to ask for regulatory language change again, but for a larger area to preserve what little kelp remains in Monterey Bay.

#### **SECTION II: Optional Information**

- 4. Date of Petition: 1-20-20
- 5. Category of Proposed Change
  - Sport Fishing
  - □ Commercial Fishing
  - □ Hunting
  - $\Box$  Other, please specify:
- 6. The proposal is to: (To determine section number(s), see current year regulation booklet or <u>https://govt.westlaw.com/calregs</u>)
  - $\Box$  Amend Title 14 Section(s)
  - $\boxtimes$  Add New Title 14 Section(s): 29.12
  - □ Repeal Title 14 Section(s):
- 7. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition 2019-003 Or □ Not applicable.
- 8. 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: April 2020



State of California – Fish and Game Commission **PETITION TO THE CALIFORNIA FISH AND GAME COMMISSION FOR REGULATION CHANGE** FGC 1 (Rev 06/19) Page 3 of 3

- **9. Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents: See submitted FG-1 2019-003
- **10.** 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 submitted FG-1 2019-003
- **11.** Forms: If applicable, list any forms to be created, amended or repealed:

n/a

## SECTION 3: FGC Staff Only

Date received: Click here to enter text.

FGC staff action:

- □ Accept complete
- □ Reject incomplete
- □ Reject outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action:

Meeting date for FGC consideration:

FGC action:

- □ Denied by FGC
- □ Denied same as petition \_\_\_\_

Tracking Number
### Alexandre Eco Dairy Farms 5-year renewal PLM"

Fri 02/07/2020 09:23 PM To:

FGC <FGC@fgc.ca.gov>

We were able to obtain a copy of the "Alexandre Eco Dairy Farms 5-year renewal PLM" late this afternoon Feb 7, 2020. Realizing today was the deadline for comments, our Lake Earl Grange #577 Environmental Policy and Procedure Committee wishes to go on record opposing the renewal of the Alexandre Eco Dairy Farms 5-year renewal PLM. We will follow up with specific reasons for our opposition at a later date. Our position remains the same as we stated in our comments opposing the original establishment of this particular PLM. Comments were submitted to the regional office of the CA Dept of Fish and Game. (Redding Office). Unfortunately the CA Dept of Fish and Game DID NOT forward those comments to the Commission as they said they had. We received a letter of apology from Richard Calas on behalf of the Department. As a result our Comments were not considered by the Commission and the PLM was established.

Thank you for your consideration. I can be reached at and would be happy to answer any questions you may have. Sincerely, Helen Ferguson Chair Lake Earl Grange #577 Environmental Policy & Procedure Committee

CC: Del Norte County Farm Bureau The Smith Firm. Kelly Smith

Sent from my Verizon LG Smartphone



2019 DEC -4 2012

FIREARMS - AMMUNITION BAIT & TACKLE

CDFW Director Charlton H. Bonham

11/25/2019

Dear Mr. Bonham,

First, I realize you have a job which is extremely demanding. Your direction and leadership must cover many fronts in this vast State of California. Balancing the political tides with the right thing to do must be a constant challenge.

I want to bring up the issue of importation of Golden Shiner Minnows. As a retailer of sporting goods and a CA License Agent since 1999, I have seen the supply of Golden Shiner Minnows go from a free market to what I believe to be a State directed Monopoly which may have violated a Federal Anti-Trust Act. I would like to get some answers to the questions that follow. If the answers result in the continued monopoly that Golden State Bait has on Golden Shiner Minnows, I request that you consider the complete ban on importing these bait fish into California.

Attached is a copy of our 2020 application for importation of Golden Shiner Minnows. This has been submitted. As I understand it the reason others have been denied the permit to import these minnows, according to Dr. Mark Adkison, is due to a tape worm found in the supply coming from out of State. Is the real reason for denying others from importing due to the tape worm? Doesn't this tape worm already exist in CA fish?

> 888 Market Street, Colusa California 95932 • (530) 458-HUNT (4868) www.kittlesoutdoor.com

I also understand that Golden State Bait is importing from States where others are being turned down. Does the CA DFW have an accurate track on exactly where the all of the Golden Shiner bait fish are originating which Golden State Bait imports? What supplier(s) is Golden State getting their seemingly pure Golden Shiners from?

Our company and others that sell bait in California see a large demand for the Golden Shiner Bait fish. The monopoly that the CA DFW has created, limited the supply and possibly puts controls on the price. If the monopoly cannot be broken, I request the Golden Shiner be banned from importation by all.

Sincerely,

Patrick T. Kittle

President, Kittle's Outdoor ° C rt Co. Lac.

CC: California Fish and Game Commission P.O. Box 944209, Sacramento, CA 94244-2090

Office of Assemblyman Gallagher, 1130 Civic Center Blvd., Suite F

Yuba City, CA 95993

State of California – Department of Fish and Wildlife 2019 APPLICATION FOR IMPORTATION PERMIT DFW 789 (REV. 12/13/18)		
Pursuant to Section 236, Title 14, California Code of Regulations		
Applicant Name: Patrick T. Kittle Business Name: Kittle's Outdoor & Sportlo Tuc.		
Mailing Address: 888 Market St. Email:		
City: Colusa State: CA Zip Code: 25932		
Phone: <u>530-458-4868</u> Fax: <u>530-458-2988</u> Cell:		
Check all that apply		
□ Stocking Permit 🖓 Live Bait License □ Aquaculture Registration □ Live Market Sales		
Permit Number:Expiration Date:12/3//2020		
Transporter Business Name: IFed Ex 🗍 UPS 🗍 Air		
Contact Name: Email:		
Phone:Fax:Cell:		
Supplier Business Name I.F. Anderson Forms Inc.		
Contact Name: James Neg (Anderson Jr.		
Source Facility Address 4377 Hwy 70 West		
City: Lonoke State: AR Zip Code: 7208 Ce		
Phone: <u>501-676-2716</u> Fax: <u>501-676-2718</u> Cell:		
All suppliers are required to provide the Department with two consecutive health certifications.		
Recipient		
Shipment Information: Shipment Date:		
Destination Address: 888 Markef 54 Contact Phone: 530-458-4868		
Destination City: Colusa Route		
Species Information (continue on back of application if more lines needed):		
Gelde State (Cool State		
Object On Hel 2000 105 STINGER INGS		
Applicant SignatureDate		
<ul> <li>A. Eggs (unfertilized)</li> <li>B. Eggs (fertilized)</li> <li>C. Fingerlings (16 or more per pound)</li> <li>D. Broodstock</li> <li>E. Sub catchable (6 to 16 fish per pound)</li> <li>F. Catchable (&gt;0.5 pounds each)</li> <li>G. Trophy (&gt;2 pounds each)</li> <li>H. Shellfish Larvae I. Shellfish Seed J. Shellfish adult/broodstock</li> </ul>		
Erachwater Applications: Importation Permit Program Department of Eich and Wildlife, 220 S Street, Secremente, CA 05044		

**Freshwater Applications:** Importation Permit Program, Department of Fish and Wildlife, 830 S Street, Sacramento, CA 95811 **Marine Applications:** Importation Permit Program, Department of Fish and Wildlife, 4665 Lampson Avenue, Suite C, Los Alamitos, CA 90720

### California Big Game Permit/Point system

**brooks taylor** Mon 12/09/2019 02:12 PM To:

• FGC <FGC@fgc.ca.gov>

Cc:

• Benedet, Jennifer(Jen)@Wildlife <Jennifer.Benedet@Wildlife.ca.gov>

Dear President Sklar and Members of the Commission,

I am writing because I want to discuss the current California big game point system. I know the state is currently trying to increase hunter participation through the Recruit, Retain and Reactivate program, as such I have also CC'd 3R coordinator Jen Benedet. I would fall into the category of hunters you are trying to retain. I am an avid hunter and I really love hunting deer and elk as well as most other big game species. It is becoming harder and harder to justify spending money on a big game tag in California. I do not have maximum points for any species and because of that I have no realistic chance of drawing a tag for a quality hunt for any big game animal here. Yes I can always get a deer tag, in fact I can get two of them. Unfortunately those for the most part are in zones with extremely low success rates and zones that truly lack any quality deer hunting. There are 6 or 7 western states where I know i can go get a tag and know I have a much better chance at a quality deer or elk hunting experience. I know we do not have the numbers of deer that those states have. I get that. What is making it hard to even apply for a tag in California is the extreme unlikeliness of ever drawing one of the premier tags. I looked at how much money I spend annually on my two deer tags and the applications for sheep,elk and antelope. I think I like my odds of putting that money toward lottery tickets so I can win the lottery and buy out of state tags with my winnings better than my odds of ever getting a decent big game tag here. If you happened to miss a year or if you just happened to be born too late you really have no chance at those tags. The one or two random drawing tags are so impossible to draw they are for all purposes statistically irrelevant. At this point about the only reason I continue to apply is because of the hope that some day the system changes and my points will carry over into a system where they give me a chance at a tag.

The system Nevada uses of squaring the total points acquired and having that many chances at a tag seems to me to be the most fair. Everyone has a chance at every tag. The people who have the most points simply have the best chance. This gives even new hunters an opportunity to draw premier tags. Sadly he way the California population continues to grow and our wildlife habitat, especially winter deer range continues to decrease I really do not think we will ever see a significant increase in deer populations. Our elk populations will likely continue to grow for awhile but they will reach their full carrying capacity soon. I do not see a time when hunter opportunity for either species will increase greatly. For me to continue to want to purchase big game

tags in California I will want to at least think I have a reasonable chance at a quality tag. I am past the point in my life of just wanting to kill any deer. I want a quality hunt for quality deer. I happen to have almost the maximum points available for 3 of the big game species (I am one point short). Right now the way the point system is implemented that may as well be zero points. I do not think there will be a time in my hunting lifetime that will change under the current structure. I cannot imagine anyone with less than one or two points less than maximum ever wanting to participate in those drawings because they have no realistic opportunity of ever reaching a point total that will give them a legitimate chance at a tag. So many hunters I know feel the same way as me. We are all frustrated. What needs to be done to change the system? There seems to be enough hunters discouraged about the system that a change would be welcomed. Maybe I am completely wrong but it sure does not seem that way.

**Brooks Taylor** 



"You cannot be unhappy in the middle of a big beautiful river." Jim Harrison

From: Rikki Eriksen <<u>rikki@californiamsf.org</u>>
Sent: Wednesday, December 11, 2019 11:32 AM
To: FGC <<u>FGC@fgc.ca.gov</u>>
Subject: Distribution summary for Fish and Game commission

Hi Melissa-

Attached please find a document, which summarizes distribution of marine protected areas toolkits and materials across the state of California in 2019. This may be of interest for your meeting on Thursday. We have only just completed this so apologies for the late email but if possible, feel free to share.

This outreach across the entire state was funded by OPC to increase awareness of the statewide network of MPAs. We reached over 500 High priority target locations, visiting primarily in person to establish relationships and hear from the boating, fishing and ocean recreation audiences that enjoy the ocean. 99.6% of high priority sites received materials, and critical feedback was provided.

Feel free to distribute and share widely with your partners and Council members. We will sending some hard copies in the mail to you as well. We are submitting this to the Fish and Game Commission today.

Thank you.

Regards, Rikki and the CMSF team

Rikki Eriksen, Ph.D. California Marine Sanctuary Foundation Marine Ecologist Director, California MPAs Program 831 331 6113

Unless someone like you Cares a whole awful lot Nothing is going to get better Its simply not..

Dr. Seuss, The Lorax

Please note new email address: <u>rikki@californiamsf.org</u> and change of last name.

Please visit the California MPAs website for more information and resources to support marine protected areas education and outreach: <u>www.californiampas.org</u>

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# 2019 California MPA Outreach Report





www.californiampas.org | 99 Pacific St., Monterey



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### **Marine Protected Area Outreach**

#### ANNUAL OVERVIEW REPORT



#### SUMMARY

Access to information about the California network of MPAs was identified as a critical need during the 2018 MPA Education and Outreach Needs Assessment. To fill this crucial gap, the Ocean Protection Council (OPC) provided funding to the California Marine Sanctuary Foundation (CMSF) to distribute MPA materials to priority locations across California.

In this report, we summarize efforts to infuse bait & tackle shops, ocean recreation businesses, harbors, marinas, aquaria, interpretive outlets and more with regulatory and interpretive MPA resources.

1191 NUMBER OF POSSIBLE OUTREACH LOCATIONS IN CA IDENTIFIED

# 527

NUMBER OF LOCATIONS IDENTIFIED AS HIGH PRIORITY

# 99.6%

OF HIGH PRIORITY LOCATIONS RECEIVED TOOLKITS

## MPA Outreach At A Glance

#### DISTRIBUTION OF MPA TOOLKITS ACROSS CALIFORNIA'S FISHING, OCEAN RECREATION BUSINESS AND INTERPRETIVE COMMUNITIES



#### RANKING HIGH VALUE OUTLETS

CMSF staff conducted a rigorous review of coastal California organizations and businesses who operate in the fishing, ocean recreation and interpretive communities. A location was ranked as high priority if it reached the target audience (fishing or interpretive), was located in close proximity to a MPA, and/or had room for or was receptive to receiving content.

In person visits to each coastal county allowed us to refine and add to the extensive outreach list.

FISHING COMMUNITY

In general, the fishing community was excited to receive materials and often requested more. Overall, attitudes from the fishing community seem more positive than in the past.

### INTERPRETIVE & OCEAN RECREATION COMMUNITY

Members of this community are always eager to implement MPA materials into their programming. Due to high staff and volunteer turnover in these outlets, routine outreach is necessary and appreciated!



"Thank you very much for the box of materials you sent to the harbor. The Ocean Recreation Guide, the Guide to Fishing and MPAs, brochures and the laminated signs are outstanding resources. Thanks again for sending us your MPA treasure box!"

#### - Crescent City Harbor District

"Thank you so much for the wonderful outreach materials! They are excellent and will last for a long time. I will bring them this weekend to our beach cleanup at the Russian River mouth, and hopefully discuss the importance of removing flood debris and trash from the estuary and beach."

- Russian RiverKeeper

### 2019 OUTREACH PROCESS

### STEP 1: IDENTIFY AND RANK HIGH-VALUE TARGETS FOR DISSEMINATING MPA TOOLKITS

CMSF conducted an extensive investigation across the state, focusing on coastal counties, to identify high priority locations to receive MPA materials. The investigation required identifying bait and tackle shops, harbors, marinas, fish license sales locations, dive shops, whale watching charters, kayak shops, sporting goods stores, popular waterfront stores, visitor and information centers, chambers of commerce, and other ocean recreation and interpretive outlets. The locations are compiled in a database that is modified as outreach is conducted to refine targets for future distribution efforts.

Across the state, a total of 1,191 locations were identified and ranked HIGH, MEDIUM or LOW. In each county, roughly 30-60 locations were ranked as high priority. Many sites were added during outreach trips, while others were re-ranked after visits to the sites and subsequent communications. A site was listed as HIGH priority if it reached the target audience (fishing or interpretive), was located in a frequently visited site close to a MPA, and had room for or was receptive to receiving content. Efforts were made to ensure that costly MPA toolkits and printed materials were not distributed to sites where the resources would not be displayed or made available to the intended audience.



#### **STEP 2: COMPILE MPA TOOLKITS**

MPA toolkits consisting of printed materials for display and distribution were tailored to each geographic area and target audience. Using previously produced resources, each MPA toolkit was tailored for the specific geographic area and business or organization visited. We reached out to local MPA Collaboratives to receive their materials if they had extras, and if there weren't, we requested access to print their resources.

Toolkits included materials such as:

- Harbor and marina signs with boundaries, regulations and other information that were reduced in size and laminated for display in windows and outdoor displays.
- Waterproof regulatory brochures, with maps of nearby MPAs, information on fishing and anchoring, and a QR code that provides an online link to specific fishing regulations.
- Laminates of an eye-catching, hand-water colored poster illustrating California's network of MPAs and CDFW's poster depicting key habitats and species protected by California's MPAs.
- Ocean Recreation Guides: waterproof ~30-page guidebooks highlighting local MPAs, wildlife and recreation opportunities (available for every coastal county except Orange and San Diego).
- Local content produced by MPA Collaborative Network Partners.



#### **STEP 3: DISTRIBUTION**



MPA toolkits were distributed to high priority sites in all coastal counties. Toolkits were distributed in person, to build and strengthen relationships with key partners and gain a better understanding of the physical space. Conversation and feedback that results from site visits is critical to refining the distribution list, as well as for understanding the value of different products disseminated. Based on the intel from these site visits, we are able to refine the number and type of resources distributed to each high priority location. In certain areas, there were enough materials to provide outreach to some medium priority locations.

In-person site visits occur in targeted time periods ahead of and during the fishing season, while follow up conversations occur throughout the year so that we can improve and make MPA outreach more effective in the 2020 season. Distribution is an ongoing process, with requests for additional materials being received consistently by new and existing partners. Additional requests for materials after in-person outreach trips were addressed via mail.

**Tolowa Dunes State Park** CGC Dorado Sandie's Marine & Sport

Big Lagoon County Park d Rancheria Trinidad Bay Charters tuna Chambe, of Commerce umboldt Redwoods State Park

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# **MPA TOOLKIT** DISTRIBUTION

### A COUNTY BY COUNTY **OVERVIEW OF 2019 OUTREACH**

Oceang, andels Hill Rig Creek Re

San Simeon Chamber of Commerce Morro Bay Visitor Center nerce Visitor Information Center Center for Coastal Marine Scienes

> **(DICK'S Sporting Goods** San Luis Yacht Club

Gaviota SP Dannys Bait and Tacklanglers Den Wishtoyo Chumash Foundation Ventura Port District Office Harbor Breeze Cruises logan's Bait & Tackle Cabrillo Marina A California Yacht Marina LP Fishing Supply SAN DIEGO DIVERS (Barnacle B West Marine- Chula Vista **OCEAN ENTERPRISES Tijuana Estuary Visitor Cen** 

## **Del Norte County**

In Del Norte County, 29 sites were identified as targets, with 14 ranked as high priority receiving outreach materials.



The communities of Smith River, Klamath, and Crescent City were targeted. Specific recipients of toolkits are listed below.





#### HIGH PRIORITY FISHING OUTLETS

Crescent City Harbor Crescent City Redwoods KOA Englund Marina Pacific West Coast Guide Service Tidewind Sportfishing Klamath River RV Park Friends of CC Harbor

#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Crescent City Information Center Del Norte Chamber of Commerce Del Norte County Historical Society Hiouchi Visitor Center Jedediah Smith Visitor Center Tolowa Dunes State Park Port O' Pints







## **Humboldt County**

In Humboldt County, 67 sites were identified as targets, with 34 ranked as high priority and 51 total receiving materials.



Targeted communities included Gold Bluffs, Arcata, Eureka, Trinidad, Fields Landing, Loleta, Fortuna and Shelter Cove. Examples of recipients are below.



#### HIGH PRIORITY FISHING OUTLETS

Salty's Fish Company Coastline Fishing Charters Eureka Public Marina Englund Marine Bucksport Sporting Goods Full Throttle Fishing Shelter Cove General Store

#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Trinidad Rancheria Live2Dive Arcata Chamber of Commerce Fortuna Chamber of Commerce Wiyot tribe Bureau of Land Management Humboldt Coastal Nature Center









## **Mendocino County**

In Mendocino County, 54 sites were identified as targets, with 32 ranked as high priority and 40 total receiving outreach materials.



Outreach extended from Westport Beach down to Gualala. Targeted communities include Gualala, Fort Bragg, Point Arena, Albion, Mendocino, and Noyo Harbor. Examples of recipients are below.

#### HIGH PRIORITY FISHING OUTLETS

Fort Bragg Fishing Hooked on Mendo Telstar Charters Anchor Charter Boats All Aboard Adventures Mendocino Coast Tackle Point Arena Pier

#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS Point Cabrillo Lighthouse

MacKerricher State Park Cove Coffee Noyo Science Center Wesport Campground Noyo Harbor Tours Point Arena Lighthouse





### Sonoma County

In Sonoma County, 64 sites were identified as targets, with 32 ranked as high priority and 38 total receiving outreach materials.



#### OF HIGH PRIORITY LOCATIONS RECEIVED TOOLKITS

Outreach ranged from Sea Ranch down to Lawson's Landing and targeted the communities of Guerneville, Jenner, Bodega Bay, Fort Ross, Timber Cove, and Dillon Beach. Examples of recipients are below.





### HIGH PRIORITY FISHING OUTLET

Outdoor Pro Shop Bodega Bay Sportfishing Center Gualala Sport & Tackle Jenner Boat Launch King's Sport & Tackle Lawson's Landing

#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Jenner Visitor Center Doran Park Visitor Center Fort Ross Visitor Center Gualala Point Visitor Center Bodega Bay Kayak Bodega Bay Marine Labs







### San Francisco Bay Area

In the San Francisco Bay Area, 91 sites were identified as targets, with 49 ranked as high priority and 48 total receiving outreach materials.





OF HIGH PRIORITY LOCATIONS RECEIVED TOOLKITS

Outreach spanned the communities of Tomales Bay, Pt Reyes, Emeryville, Oakland, Redwood City, Marin and San Francisco. Examples of recipients are below.

#### HIGH PRIORITY FISHING OUTLETS

Berkeley Marina Oakland Marina Hi's Tackle West Marine (multiple locations) Blue Runner Sportfishing California Fisheries Fund Freedom Boat Club of SF HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

The Marine Mammal Center Limpets Beach Watch Sea Bird Protection Network Gulf of the Farallones NMS Bear Valley Visitor Center Pt. Reyes Ocean Exploration Center









## San Mateo County

In San Mateo County, 54 sites were identified as targets, with 31 ranked as high priority receiving outreach materials.



Outreach extended inland to San Bruno and Redwood City to the coast at Pillar Point, Montara, and Pigeon Point to the south. Examples of recipients are below.

#### HIGH PRIORITY FISHING OUTLETS

San Mateo County Harbor District Salty Lady Riptide Charters Princeton Fishing Gear New Coastside Bait & Tackle Captain Peets Sportfishing Mooch Better Fishing

#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Fitzgerald Marine Reserve Año Nuevo State Park Half Moon Bay Coastside Museum San Mateo County Parks SCUBA Fusion Mavericks Surf Shop Montara Lighthouse







### Santa Cruz County

In Santa Cruz County, 71 sites were identified as targets, with 29 ranked as high priority receiving outreach materials.





OF HIGH PRIORITY LOCATIONS RECEIVED TOOLKITS

Outreach spanned from Año Nuevo State Park south to Watsonville and parts of Elkhorn Slough . Examples of recipients are below.

#### HIGH PRIORITY FISHING OUTLETS

Bayside Marine Santa Cruz Harbor Stagnaros Fishing Trips Outdoor World Moss Landing Harbor Go Fish Santa Cruz Charters HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Friends of Santa Cruz State Parks Natural Bridges State Park Kayak Connection Pro Scuba Aqua Safaris O'neill Sea Odyssey









## **Monterey County**



In Monterey County, 94 sites were identified as targets, with 48 ranked as high priority and 52 total receiving outreach materials.



LOCATIONS RECEIVED TOOLKITS

Outreach was concentrated in the communities of Watsonville, Marina, Seaside, the Monterey Peninsula and all the way to Big Creek. Examples of recipients are below.

#### HIGH PRIORITY FISHING OUTLETS

CDFW Marine Region Monterey Chris' Fishing Dicks Sporting Goods Hunter's Supply J & M Sportfishing Kahuna Sportfishing HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Adventures By the Sea BayNet Big Creek Natural Reserve Camp SEA Lab Carmel Chamber of Commerce Pacific Grove Museum



## San Luis Obispo County

In San Luis Obispo County, 66 sites were identified as targets, with 39 ranked as high priority and 46 total receiving outreach materials.



#### OF HIGH PRIORITY LOCATIONS RECEIVED TOOLKITS

Outreach was concentrated in the communities of Avila Beach, San Luis Obispo, Morro Bay, Cayucos and Cambria. Examples of recipients are below.

#### HIGH PRIORITY FISHING OUTLETS

Morro Bay Marina Morro Bay Landing Virg's Landing Patriot Sportfishing Olde Port Boat Launch Morro Bay Yacht Club 

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#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Morro Bay Nat. History Museum Central Coast Aquarium Coastal Discovery Center Friends of the Elephant Seal Kayak Shack Morro Bay Visitor Center





## Santa Barbara & Ventura Counties

In Santa Barbara and Ventura Counties, 103 sites were identified as targets, with 37 ranked as high priority and 38 total receiving outreach materials.





OF HIGH PRIORITY LOCATIONS RECEIVED TOOLKITS

Outreach occurred in the communities of Ventura, Santa Barbara, Carpinteria, and Oxnard. Examples of recipients are below.



#### HIGH PRIORITY FISHING OUTLETS

Blue Water Hunter Danny's Bait & Tackle Eric's Tackle Shop Hook, Line & Sinker Hyun's Tackle Shop The Angler's Den

#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Sea Landing Environmental Defense Center Santa Barbara Adventure Company Ty Warner Sea Center Santa Barbara Sea Charters Truth Aquatics





## Los Angeles County

In Los Angeles County, 115 sites were identified as targets, with 61 ranked as high priority and 59 total receiving outreach materials.





Outreach was concentrated in the communities of Malibu, Santa Monica, Marina Del Rey, Redondo Beach, Los Angeles, and Long Beach. Examples of recipients are below.

#### HIGH PRIORITY FISHING OUTLETS

22ND Street Landing Ace Fishing Tackle Cabrillo Way Marina Del Rey Fuel Island Fishing Tackle Long Beach Fishing Supply

#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Aquarium of the Pacific Blue Holic Scuba Dive N' Surf Eco Dive Center Go Surf LA In 2 Deep Diving





### **Orange County**

In Orange County, 112 sites were identified as targets, with 55 ranked as high priority and 56 total receiving outreach materials.



# 100%

OF HIGH PRIORITY LOCATIONS RECEIVED TOOLKITS

Outreach occurred in the communities of Newport Beach, Huntington Beach, Laguna Beach, San Clemente, and Dana Point. Examples of recipients are below.



#### HIGH PRIORITY FISHING OUTLETS

Charkbait Bongos Sport Fishing Angler's Center Fisherman's Access Freedom Boat Club- Huntington Hogan's Bait & Tackle

#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Anglers Center OC Coastkeeper Bolsa Chica Conservancy All Water Charters and Rentals Back Bay Science Center Ocean Institute



### **Catalina Island**

On Catalina Island, 38 sites were identified as targets, with 21 ranked as high priority and 25 total receiving outreach materials.



OF HIGH PRIORITY LOCATIONS RECEIVED TOOLKITS

Outreach was conducted across Catalina, from Avalon to Two Harbors and select mainland locations.

#### HIGH PRIORITY FISHING OUTLETS

Afishionados Catalina Coastal Fishing Joe's Rent A Boat



HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Catalina Sea Camp Corsario Ocean Adventures Eco Dive Center Snorkeling Catalina Mountain & Sea Adventures







## San Diego County

OCEANSIDE AD

In San Diego County, 231 sites were identified as targets, with 60 ranked as high priority and 62 total receiving outreach materials.



LOCATIONS RECEIVED TOOLKITS

Outreach occurred in communities from Oceanside all the way to the Tijuana border. Examples of recipients are below.

#### WERT WATERSPORTS Partie Oordinistic DICKSSBORTING.COODS.B132; Partie Coast Bait & Tarkle Hardie U.S.Sbortinks.CoodD.S.B132; Partie Coast Bait & Tarkle Hardie U.S.Sbortinks.CoodD.S.B132; Partie Coast Bait & Tarkle Hardie U.S.Dood Nature Center Build Lagoon Nature Center Build Lagoon Nature Center Build Lagoon Nature Center Build Lagoon Nature Center Build Mart Partie Partie Batershinks.Supplies. Soland Back Harder Parter Partie State Natural Reserve Visitor Center Build Mart Partie State Natural Reserve Visitor Center Build Mart Partie State Natural Reserve Visitor Center Build Mart Parter State Natural Reserve Visitor Center Build Mart Parter State State Natural Reserve Visitor Center Build Mart Parter State State Natural Reserve Visitor Center Build Mart Parter State State Natural Reserve Visitor Center Build Mart Parter State State Natural Reserve Visitor Center Build Mart Parter State State Natural Reserve Visitor Center Build Mart Parter State State Natural Reserve Visitor Center Build Marter State State Natural Reserve Line State St

#### HIGH PRIORITY FISHING OUTLETS

Angler's Choice Barnacle Bill's Bait & Tackle Blue Water Tackle Coast Guard Auxillary Freedom Boat Club Crystal Pier Bait & Tackle Point Loma Sportfishing

#### HIGH PRIORITY OCEAN RECREATION & INTERPRETIVE OUTLETS

Beyond Land Adventures Everyday California House of Scuba La Jolla WaterSports Oceanside Adventures North County Scuba Center OEX Mission Beach







### MAJOR FINDINGS & COMMUNITY FEEDBACK

### THIS SECTION INCLUDES VALUABLE TAKEAWAYS FROM COMMUNITY FEEDBACK THAT OCCURED DURING OUTREACH.

#### THE BENEFIT OF IN-PERSON OUTREACH

The majority of MPA outreach was conducted though in-person site visits. During casual conversations with store owners, program staff and stakeholders, we identified specific needs, priorities and the capacity that individual outlets have for communicating about MPAs. These site visits and conversations bring invaluable insights, allowing us to tailor the content in the toolkits they received with materials appropriate for their particular audience and scope other opportunities to integrate MPA content into existing programming.

#### A SHIFT IN ATTITUDE

There has been a major shift in the attitude of the boating and fishing community toward MPAs. Almost ubiquitously across the state, attitudes have trended toward positive, or at the very least neutral about the existence and outcomes from California's protection efforts. In particular, the recreational fishing community is recognizing the need to protect their way of life and are interested in receiving routine, easily understandable updates and information.

#### MAJOR FINDINGS & COMMUNITY FEEDBACK CTD.

#### EYES ON THE WATER

The recreational charter fleet is very interested in the marine conservation outreach materials. Many expressed interest in serving as "eyes on the water" to increase compliance with the protection efforts and regulations and are keen to report to officials about violations.

#### COMPLAINTS OF LOCAL POACHING

Locations where local poaching is occurring in limited take or No-Take SMCAs were identified through conversations with locals and land owners. Examples include Saunders Reef SMCA, Salt Point SMCA and Mackerricher SMCA. Those that expressed concern are extremely interested in signage and increased law enforcement presence to improve compliance.

#### STOREFRONT LOCATIONS

Bait and tackle shops, sporting goods stores, campgrounds, visitors' centers and interpretive centers are excellent outlets for distributing materials and communicating to key audiences about fishing regulations and MPAs. Almost all of the locations visited in person were highly receptive to the maps and simplified graphics that point to easily understandable information about California's effort to protect the ocean, especially the CDFW species and habitats likely to benefit poster.

#### FLAWED GEOGRAPHY

In certain areas, the materials we had to offer were not appropriate to the geographical range of the outlet. For instance, businesses located around Oceanside Harbor provided feedback that the San Diego materials they received do not have some of the information they need. They requested materials that combine northern San Diego and southern Orange counties. We are modifying toolkits and should consider creating new content for places, such as Pt. Reyes, Pt. Arena, Ft. Bragg and other small harbors and communities that service a specific geographic range.

### THE FUTURE OF MPA OUTREACH

In Spring 2020, CMSF will be conducting another round of MPA outreach to all coastal counties.

In preparation, CMSF is working with partners across the state including the MPA Collaborative Network to refine the outreach distribution list and identify new materials for distribution.

### If you are interested in getting involved, please contact CMSF MPA Program Staff.

RIKKI ERIKSEN: RIKKI@CALIFORNIAMSF.ORG DANIELLE BROWN: DANIELLE@CALIFORNIAMSF.ORG KATELYN SPROFERA: KATELYN@CALIFORNIAMSF.ORG



### **Annual License**

Sat 12/14/2019 08:27 AM To:

• FGC <FGC@fgc.ca.gov>

Hello,

I am writing this in regards to annual fishing license purchases. I wanted to confirm if the measure to have a license good for one year from date of purchase was voted down? If that is the case my self and several others will not be purchasing an annual license again this year. I have a hard time justifying the cost of an annual license when I generally like purchase my license in late spring. I hope if it was voted down you all would reconsider the measure and push it through.

Thanks, Randy Robertson Cell Work Cell

### New information in final EIR regarding parking in the Ballona Wetlands Ecological Reserve

Walter Lamb <landtrust@ballona.org> Fri 01/03/2020 04:52 PM

- Cornman, Ari@FGC <Ari.Cornman@FGC.ca.gov>;
- FGC <FGC@fgc.ca.gov>

Cc:

- Bonham, Chuck@Wildlife <Chuck.Bonham@wildlife.ca.gov>;
- Lewis, Kari@Wildlife <Kari.Lewis@wildlife.ca.gov>;
- Burg, Richard@Wildlife <Richard.Burg@wildlife.ca.gov>;
- Brody, Richard@Wildlife <Richard.Brody@wildlife.ca.gov>;
- Takei, Kevin@Wildlife <Kevin.Takei@wildlife.ca.gov>

Dear Ari and Melissa,

I hope you enjoyed the holiday break and that your new year is off to a good start. As you are likely aware, the California Department of Fish and Wildlife released its final EIR on December 19. That document contains significant new information regarding proposed parking uses within the Ballona Wetlands Ecological Reserve that is inconsistent with the information provided to the Fish and Game Commission by the Department when the Commission voted to deny our Petition (#2019-001) in June. Examples include:

- Despite the Department indicating that it would not include a three-story parking garage in the final EIR, this feature was retained. Members of the Commission had previously expressed concerns about this parking structure being proposed for the wetlands.

- Despite President Sklar strongly suggesting to the Department that the final EIR include analysis of an alternative which did not include a parking structure and which explored the environmental benefits of reducing some of the existing paved parking area, the final EIR neglects to provide any analysis of how the reduction of existing paved areas could improve the ecological function of the reserve.

- Despite numerous comments from various stakeholder organizations, including strong supporters of the proposed restoration project, requesting a parking needs analysis for the reserve, the final EIR includes no such analysis. Instead, the public (and the Commissioners) are being asked to believe that the exact same parking plan expressly designed primarily for County use, including commercially-related parking, is now needed for the ecological reserve, even though it will still be managed by the County.

The only reason the Land Trust did not challenge the Commission's denial of our petition is because the Department sent strong signals to the public and to the Commission that the

petition was moot because it had backed off the parking garage proposal and removed commercial parking from the ecological reserve. These recent developments show that the Department fully intends to proceed with a parking design created by the County to serve the County's interests.

I am sure that all of us would prefer not to go through the petition process again. If you have any interest in discussion other ways to address this issue, please contact me. Otherwise we will submit another petition based on this substantial change in information.

Regards,

Walter

\_\_\_\_\_

Walter Lamb Ballona Wetlands Land Trust

**Facebook**
### 'Oversight and science; the 'proof', and the cost...

jon Holcomb Sat 01/18/2020 03:08 PM

To:

- Joshua Russo
- Tristin McHugh <tmchugh@reefcheck.org>;
- Ray, James@Wildlife <James.Ray@wildlife.ca.gov>;
- Esgro, Michael@CNRA <Michael.Esgro@resources.ca.gov>;
- Mastrup, Sonke@Wildlife <Sonke.Mastrup@wildlife.ca.gov>;
- Kashiwada, Jerry@Wildlife <Jerry.Kashiwada@wildlife.ca.gov>;
- Rogers-Bennett, Laura@Wildlife <Laura.Rogers-Bennett@wildlife.ca.gov>;
- FGC <FGC@fgc.ca.gov>

Cc:

- Doug Jung
- Michelle Holcomb
- Michael Holcomb
- Floyd Damschen
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- Jack Likins
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- Callahan, Mary <mary.callahan@pressdemocrat.com>;
- Michelle Blackwell
- California S.U. divers <californiaseaurchindivers@googlegroups.com>;
- Erik Owen
- lyle Davis
- Dirk Ammerman
- Ken Gerken

If I don't speak against 50% 'cost of records/science/ whatever' in proposed funding for Kelp restoration plans this year I'll be criticized for misleading those who believed as I did, "... we'll be funded for 'work only'.

If I support that 50% 'expected' overhead cost I'll be admonished for supporting the government and the system that eats half of every dollar spent...same 'ol same 'ol.

The problem seems to be 'cost of science and oversight', "necessary to prove results". As with the MPA funds, HALF or more goes to the Universities, who charge that for 'handling' the funds, nothing more! That's UNETHICAL ! There must be a way to save money and record effort at the same time.

The 'public', who actually pays for this proposed work, deserves better; a public notice of an outline of cost proposed at the very least. I'd like to see the State act more like a money manager w/ the people's money, work while savings are in mind. Record keeping shouldn't cost half of any effort!

There should be a requirement to 'see' what urchins exist/need to be removed. Video is perfect for a record and transparency of results. Public observation free -uploaded to youtube. That's cheap and effective!

Reef Check, using video before work in a grid, parallel line compass pattern. One days work, clear water only, 50 passes minimum, one area covered, two cameras at one time, wide angle. I'll supply the 'scooter power' by air motor and 300-600' hoses from my boat any time you wish, I'm building one air motor power unit now, will test and assure safety, and for almost nothing we save time and money. I'll agree to \$100.00 for my day plus fuel. Anyone who wishes to underbid me is welcome, more than welcome. This isn't difficult.

There will be another record requirement for the same video grid, overlay on original for 'proof'. Again, I'll volunteer, but only if the State will match my cost saving attitude for the sake of all.

All else, 'estimated sizes & pounds landed', and some record keeping by F&G supplied by boat operators would be expected/ standard, unless we are 'allowed' to record the loads on the boats, grind up the shells and return them on the spot to the ocean. Desirable in my opinion. Imagine the savings !

Are 'measurements' necessary? Please understand I'm not anti science, just frugal, honest and result focused !

'Pounds', unloaded and estimates of all sizes can be part of the processors pay (if absolutely necessary) who unload the boats. Measurements taken painfully slow are an estimate anyway. Who cares what sizes, and why? ... we're taking them all !

What else need be added to the cost of this effort? Wasn't the Waterman's Alliance a perfect, PRICELESS example of a team effort, selfless, exemplary - a precedent setting gift to all? That leadership 'model' for cost, though the Waterman's Alliance needs to be held up for others, copied by the state, with some compensation for this effort 'this time' by them needs to be addressed.

If we can eliminate ALL superfluous costs we stand as a small group WITH the F&G to set a presidence. The State of California needs a lesson in economics, "BY EXAMPLE" !

If not, we are no better than the government that grows on public funding, feeds on its self inflated agenda with each additional expenses at the unseen cost to the public, too future work, loss to production and credibility.

Can't we work as a group to eliminate all additional fluff 'just for once'?

I rest my case.

Cheers, Jon

### Coronavirus

#### American Tortoise Rescue <info@tortoise.com>

Mon 01/27/2020 10:26 AM

To:

- Office of the Secretary CNRA <secretary@resources.ca.gov>;
- FGC <FGC@fgc.ca.gov>;
- Wildlife DIRECTOR <DIRECTOR@wildlife.ca.gov>

1 attachments (191 KB) Editorial - Close the California Live Food Markets FINAL (2).docx;

For years, we have told you that the California live food markets are a cesspool of viruses to no avail. Here's an Op-Ed I did a number of years ago that went unheeded by your departments. Susan Tellem

Susan M. Tellem, RN, BSN Executive Director American Tortoise Rescue 30745 PCH, #243 Malibu, CA 90265 <u>www.tortoise.com</u> <u>www.worldturtleday.org</u> Facebook: American Tortoise Rescue and World Turtle Day Twitter and Insta: @tortoiserescue @worldturtleday



# **Editorial - Close the Live Food Markets**

#### They No Longer Serve the Original Purpose When There Was No Refrigeration

<u>American Tortoise Rescue (ATR)</u>, along with several other animal welfare groups, has been trying to close down the "wet" live food markets for the same reasons that the SARS epidemic closed the live markets in China. There, as in the U.S., animals are kept in horrendous and unsanitary conditions before they are eaten...no shade, upside down, crowded beak to beak and claw to claw, with no food or water. Some of these animals are threatened or endangered species. We cringe at the obvious mistreatment of these creatures.

Blood and feces tests and necropsies on these animals, including rabbits, turtles, frogs and fish reveal salmonella, TB, leprosy and a range of other zoonotic diseases easily transmitted to humans. ATR repeatedly brought evidence since 1997 to a variety of local, state and federal agencies to no avail.

California Fish & Wildlife, USDA, Los Angeles County and California Health Depts. among others have deliberately stayed away from this political hot potato because closing them would mean angering Chinese voters. The USDA official I spoke to said, "Lady. We don't inspect fish. Why would we inspect turtles?"

The argument used by the vendors and buyers is that live markets are a Chinese tradition (o.k. before refrigeration in China and elsewhere, live food markets made sense, but that excuse no longer holds water). "Culture" and "tradition" justify nothing. To quote a good friend of mine, Action for Animal's Eric Mills, "There's a lot of crime done against animals in the name of diversity." Should we defend human slavery or female genital mutilation on the same grounds of tradition and culture? They've been around for a long time, too.

Our reason for closing the live markets is two-fold – to prevent Chinese and other shoppers from getting sick with serious and sometimes fatal symptoms resembling the flu, and to prevent the inhumane treatment of helpless animals. Overlooking these logical reasons for our concern, we have been labeled racists throughout California and elsewhere. It is not surprising that when there is no legitimate defense, pulling the race card is always easy.

We call on government officials to close live markets here in the states. Please help us in our efforts – contact your congressman or senators via email and ask that live markets in your city and others be closed immediately based on the outright cruelty to animals. Further, we ask that you inform your veterinary associations, as members in good standing, to consider this a critical issue that must be addressed now. Thank you.

#### About Us

American Tortoise Rescue is a nonprofit founded in 1990 for the protection of all species of turtles and tortoises. We have rescued more than 4,000 since our inception. Foundlings that cannot be adopted because of ill health remain in the care of ATR for the remainder of their lives. ATR acts as a clearinghouse for information about turtle care. We work to abolish "live market" slaughter of turtles in the US, the sale of reptiles on sites like Craig's List and the cruel importation and exploitation of a variety of species. Celebrate World Turtle Day every year on May 23<sup>rd</sup>!

https://www.wpri.com/news/local-news/providence/dem-responds-to-market-forced-to-stop-selling-live-turtles-frogs/1194425682

https://www.treehugger.com/green-food/eating-frogs-and-turtles-in-california-just-got-easier.html

### Contact american tortoise rescue

info@tortoise.com 30745 PCH, #243 Malibu, CA 90265 http://www.tortoise.com www.worldturtleday.org Facebook: American Tortoise Rescue and World Turtle Day Twitter @tortoiserescue YouTube AmericanTortRescue Instagram: TortoiseRescue



### **Documents & Links**

<u>The clock is ticking slide show</u>

### **Quick facts**

- Live food markets where animals are sold for food exist throughout the US.
- Necropsies on turtles and frogs reveal salmonella, TB, leprosy and a range of other zoonotic diseases easily transmitted to humans.
- Animals are kept in horrendous and unsanitary conditions before they are sold.

# Popular Mechanics: Fisherman Accidentally Caught a U.S. Navy Microphone Planted on the Ocean Floor

paul weakland Sat 01/18/2020 08:26 PM To:

• FGC <FGC@fgc.ca.gov>

**Fisherman Accidentally Caught a U.S. Navy Microphone Planted on the Ocean Floor** The EARS system was designed to record ocean sounds for undersea warfare.

Read in Popular Mechanics: <u>https://apple.news/ADapYO7ovRl2pnzg8Oi-NiA</u>

Shared from Apple News

Sent from my iPad

## **Op-Ed on the need for fishing license reform**

Marko Mlikotin <marko@savefishing.com>

Tue 01/28/2020 10:36 AM To:

• FGC <FGC@fgc.ca.gov>

1 attachments (58 KB) 1.21.20EDITORIAL-Will 2020betheYearofReform.docx;

Hello Ms. Miller-Henson -

Thank you in advance for sharing this op-ed with the commissioners at their next commission meeting. Please accept our best wishes for the new year.

### Marko Mlikotin marko@savefishing.com



0: 916-936-1777 www.savefishing.com

Follow us



## EDITORIAL: FISHING LICENSE REFORM

Will 2020 Be the Year for Fishing and Hunting License Reform?

MARKO MLIKOTIN/SPECIAL TO WESTERN OUTDOOR NEWS Published: Jan 21, 2020

The following is a guest editorial provided by Marko Mlikotin, Executive Director, California Sportfishing League, savefishing.com

Recreational fishing in California generates over \$4.6 billion in economic activity each year. For this reason, an impressive coalition of state and national organizations representing anglers, hunters, boaters and the outdoor tourism industry continues to champion the need for real and meaningful fishing license reform.

The most significant news of 2019 was the California Department of Fish and Wildlife's (DFW) recognition that its fishing and hunting licenses programs were failing and with this come consequences. Sales have been declining for decades, threatening DFW's funding for critical conservation and fishery programs.

Now, as a new year begins, it's time for DFW to show some real leadership by fulfilling its pledge to reform the department's costly and antiquated licensing program. Any day now, DFW will be releasing a final R3 report (Recruitment, Retention, Reactivation), which is part of a national movement to develop policies aimed at reversing declining fishing and hunting participation rates. The department's recommendations can then be amended into Assemblymember Jim Wood's (D-Santa Rosa) 365-day fishing license bill, AB 1387, legislation that passed the State Assembly unanimously and rests in the State Senate today.

As an association that champions the interests of anglers in our state capitol, the California Sportfishing League (CSL) has and will continue to underscore the need for reform. The fact that fishing licenses sales have declined over 55 percent since 1980 is indisputable. The major contributors to declining sales continue to be a calendar-based fishing license that is not valid a full 12 months from the date of purchase and the high cost of fishing.

Long ago, Californians soured on the notion of purchasing a calendar-based fishing license that expires on Dec. 31 of every year, no matter when purchased. As a consequence, sales plummet during the late spring and early summer months when Californians and tourists are outdoors in record numbers — when sales should be exploding, but they are not. Remarkably, anglers have not shifted their preference from long-term to short-term licenses. Poor offerings and high prices reveal that far too many have simply just abandoned fishing altogether.

In the 1980s, annual fishing licenses cost a mere \$5. Now, at \$56.68 (fresh and saltwater, plus ocean enhancement), California has the distinction of being the costliest state in the country to fish, as the state participation rate has fallen to the lowest (per capita) in the country. The primary reason why both hunting and fishing are so costly is that licenses are not determined by any reasoned market analysis, but rather by some archaic cost of living formula known as a "consumer price deflator." The name itself is a misnomer since there is no record of prices ever being "deflated."

No other state uses this methodology, and no one can say how it came to be in the first place. However, the consequences of autopilot fee increases are declining participation rates and diminishing economic benefits for communities dependent on outdoor tourism for jobs. No one benefits, not even DFW. License fees once supported 40 percent of the department's budget. Today, it is estimated to be 20 percent.

To add insult to injury, state law requires the California State Legislature and the California Fish and Game Commission to review licensing fees every 5 years, presumably to prevent runaway price increases. Unfortunately, a public record request submitted by CSL reveals that no such audit has ever taken place.

It is for this reason, and many others, that there are growing calls to abolish the so-called consumer price deflator and for California to follow the lead of reform minded states that have a proven record of restructuring their licensing programs to include a 365-day fishing license, increased offerings and even reducing fees without placing their wildlife budgets at risk.

Such measures are exactly what a group of hunting and fishing stakeholders have advised DFW to do and we are guardedly optimistic that the Director will listen. If so, this will be revealed in DFW's R3 Plan. Once this occurs, the only question remaining is will DFW have the political will to put their plan to work? We hope so. The future of outdoor recreation depends on it.

Marko Mlikotin, Executive Director, California Sportfishing League, www.savefishing.com

https://www.wonews.com/t-Editorial FishingLicenseRefore 012120.aspx

### **CORONAVIRUS OUTBREAK & LIVE ANIMAL FOOD MARKETS**

#### afa@mcn.org <afa@mcn.org>

Sat 01/25/2020 12:41 PM

To:

- Office of the Secretary CNRA <secretary@resources.ca.gov>;
- FGC <FGC@fgc.ca.gov>;
- Wildlife DIRECTOR <DIRECTOR@wildlife.ca.gov>;
- Cornman, Ari@FGC <Ari.Cornman@FGC.ca.gov>

Cc:

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- jloda@biologicaldiversity.org <jloda@biologicaldiversity.org>;
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- kerry@savethefrogs.com <kerry@savethefrogs.com>;

------ Original Message ------Subject: CORONAVIRUS OUTBREAK & LIVE ANIMAL FOOD MARKETS From: afa@mcn.org Date: Sat, January 25, 2020 12:38 pm To: afa@mcn.org

https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.theguardian.com%2 Fscience%2F2020%2Fjan%2F24%2Fcalls-for-global-ban-wild-animal-markets-amid-coronavirusoutbreak&data=02%7C01%7Cfgc%40fgc.ca.gov%7C0f4e0e93a65b4f6b424708d7a1d6e6c0% 7C4b633c25efbf40069f1507442ba7aa0b%7C0%7C1%7C637155816689294840&sdata=YNa URJcX3ovdn%2BiGXdNDWrtt0pydzXvOh4MsfRJ10FE%3D&reserved=0

### [Fwd: LIVE ANIMAL FOOD MARKETS & THE CORONAVIRUS]

afa@mcn.org <afa@mcn.org>

Mon 01/27/2020 12:38 PM

To:

- Office of the Secretary CNRA <secretary@resources.ca.gov>;
- FGC <FGC@fgc.ca.gov>;
- Wildlife DIRECTOR < DIRECTOR@wildlife.ca.gov>;
- Cornman, Ari@FGC <Ari.Cornman@FGC.ca.gov>

Please do the obvious! 25 years and counting....

x Eric Mills ACTION FOR ANIMALS Oakland

------Original Message ------Subject: LIVE ANIMAL FOOD MARKETS & THE CORONAVIRUS From: afa@mcn.org Date: Mon, January 27, 2020 10:54 am To: afa@mcn.org

https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.voanews.com%2Fsci ence-health%2Fcoronavirus-outbreak%2Flive-animal-markets-worldwide-can-spawn-diseasesexperts-

<u>say&amp;data=02%7C01%7Cfgc%40fgc.ca.gov%7Cbe2f1d1aece14497907e08d7a368e3ab%7C4b</u> <u>633c25efbf40069f1507442ba7aa0b%7C0%7C1%7C637157543205608758&amp;sdata=dnaTvKD</u> <u>h14Rc0chLvZtcQ3YWm%2FvP1Zyy4CmHExefAQs%3D&amp;reserved=0</u>

## [Fwd: CORONAVIRUS & LIVE ANIMAL FOOD MARKETS]

afa@mcn.org <afa@mcn.org>

Fri 02/07/2020 11:16 AM

To:

- Office of the Secretary CNRA <secretary@resources.ca.gov>;
- FGC <FGC@fgc.ca.gov>;
- Wildlife DIRECTOR < DIRECTOR@wildlife.ca.gov>;
- Cornman, Ari@FGC < Ari.Cornman@FGC.ca.gov>

Letter below was sent to some 25 newspapers around the state. x em AFA

------Original Message ------Subject: CORONAVIRUS & LIVE ANIMAL FOOD MARKETS From: afa@mcn.org Date: Wed, February 5, 2020 5:39 pm To: letters@latimes.com

February 5, 2020

Letter to the Editor LOS ANGELES TIMES

#### CORONAVIRUS & LIVE ANIMAL FOOD MARKETS

The chickens, as they say, have come home to roost. Again. This new coronavirus--like the 2003 SARS epidemic--originated in China's live food markets, where animals, both wild and domestic, are crammed cheek-to-jowl with the human population: a disaster waiting to happen.

We have very similar markets here in California, in Los Angeles, Oakland, San Francisco, San Jose, Sacramento and elsewhere, posing serious threats to all concerned. Animals are routinely stacked four-and-five deep, without food or water; many butchered while fully conscious.

California annually imports some TWO MILLION non-native American bullfrogs for human consumption. Most are commercially-raised in China and Taiwan. God only knows what these frogs have been exposed to before shipment. Most of the frogs are imported by Oakland wholesalers for distribution throughout California. Many are released into local waters, where they prey upon and displace the native species. The majority of the bullfrogs carry the dreaded chytrid fungus (Bd), which has caused the extinctions of 200+ amphibian species worldwide. Some 30 necropsies on the market frogs and turtles document that ALL these animals are diseased and/or parasitized, though it is illegal to sell such products--diseases such as E. coli, salmonella and pasturella (all potentially fatal in humans), plus cases of giardia, blood parasites, even one case of malaria.

Horrendously cruel and hazardous to human health, these markets should be closed-down nationwide, as they now are in China.

Sincerely,

Eric Mills, coordinator ACTION FOR ANIMALS P.O. Box 20184 Oakland, CA 94620

Received Jan 23, 2020. Original date stamped copy on file.

### PETITION TO LIST THE PACIFIC LEATHERBACK SEA TURTLE (*DERMOCHELYS CORIACEA*) AS AN ENDANGERED SPECIES UNDER THE CALIFORNIA ENDANGERED SPECIES ACT



Photo Credit: Peter Winch

CENTER FOR BIOLOGICAL DIVERSITY AND TURTLE ISLAND RESTORATION NETWORK

January 9, 2019

#### NOTICE OF 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: Pacific leatherback sea turtle Scientific name: (Dermochelys coriacea)

#### II. **RECOMMENDED ACTION:** List as endangered

The Center for Biological Diversity and Turtle Island Restoration Network submit this petition to list the Pacific leatherback sea turtle as endangered throughout its range in California pursuant to the California Endangered Species Act (California Fish and Game Code §§ 2050 et seq.). This petition demonstrates that the Pacific leatherback sea turtle clearly warrants listing based on the factors specified in the statute.

#### III. **AUTHOR OF PETITION**

Catherine Kilduff Center for Biological Diversity 1212 Broadway, Suite 800 Oakland, CA 94612 (202) 780-8862 ckilduff@biologicaldiversity.org

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

Signature: \_\_\_\_\_Calluniu [ibuff

Date: January 9, 2020

The Center for Biological Diversity is a national, nonprofit conservation organization with more than 1.6 million members and online activists dedicated to the protection of endangered species and wild places.

The Turtle Island Restoration Network is a nonprofit conservation organization with over 100 thousand members dedicated to the protection of vulnerable marine species worldwide.

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#### **EXECUTIVE SUMMARY**

The Center for Biological Diversity and Turtle Island Restoration Network submit this petition to list the Pacific leatherback sea turtle as endangered throughout its range in California pursuant to the California Endangered Species Act (California Fish and Game Code §§ 2050 et seq.).

The leatherback sea turtle in the Pacific Ocean has declined by more than 90% over the past four decades, primarily as a result of drowning in industrial longline and gillnet fisheries targeting swordfish, sharks and tunas. The primary cause of the leatherback decline, and the greatest threat to its continued existence, is entanglement and drowning in longline fishing gear (Tiwari et al. 2013). Such fishing is largely banned in the waters off the California coast during the spring, summer and fall when leatherbacks are present, making these waters a rare refuge for this highly imperiled species. In October 2019, however, longline fishing off the California Coast began for the first time in decades under an "exempted fishing permit" issued by the Trump administration.

In addition, entanglement in vertical lines of groundfish pots, Dungeness crab traps, and numerous other impacts including marine debris, pollution, shipping, and global warming threaten to render this important area unsafe and unsuitable for leatherbacks. As recently as October 18, 2019, a dead leatherback was found entangled in fishing gear off southern California.

The waters off California comprise one of the most important foraging areas identified for the critically endangered Pacific leatherback sea turtle. Each year from mid-summer through the fall, leatherback sea turtles, having completed a journey of thousands of miles from their nesting beaches in Indonesia, arrive off the U.S. West Coast to feed on seasonably abundant jellyfish in the California Current ecosystem. California has named the Pacific leatherback sea turtle as the official state marine reptile and designated October 15 as Pacific Leatherback Sea Turtle Conservation Day.

Two decades ago in its Recovery Plan for the U.S. Pacific populations of the leatherback turtle, the National Marine Fisheries Services (NMFS) acknowledged that prompt, long-term protection of identified foraging habitat is necessary to prevent the extinction of the species. In a 2007 study, NMFS scientists concluded that "the waters off central California are a critical foraging area for one of the largest remaining Pacific nesting populations." Although leatherback sea turtles have been listed on the federal Endangered Species Act for decades, and California's waters have been designated as critical habitat under the federal Endangered Species Act for seven years, the population of Pacific leatherbacks has not rebounded. In 2016, NMFS named the Pacific leatherback as one of eight marine species most likely to go extinct.

The protection of the leatherback sea turtle under the California Endangered Species Act will complement protections under the federal Endangered Species Act and is essential to ensure the continued existence of this critically endangered species. As one example, state listing will prohibit catch of leatherback sea turtles incidental to fishing; vessels participating in California-managed fisheries may apply for an incidental take permit, which would be required unless a federal incidental take statement exists. This will increase state and federal cooperation in addressing threats to leatherback sea turtles.

Scientific evidence indicates that leatherbacks in the Pacific are in imminent danger of extinction. While leatherbacks in the Western Atlantic Ocean have substantially increased in population abundance because of protections under the federal Endangered Species Act and the designation of critical habitat around the U.S. Virgin Islands, the Pacific leatherback turtles are doing extremely poorly.

The Center for Biological Diversity and Turtle Island Restoration Network request that the California Fish and Game Commission list the Pacific leatherback sea turtle as endangered throughout its range in California pursuant to the California Endangered Species Act (California Fish and Game Code §§ 2050 et seq.).

#### 1. THE CALIFORNIA ENDANGERED SPECIES ACT LISTING PROCESS AND STANDARD FOR ACCEPTANCE OF A PETITION

The California Legislature enacted the California Endangered Species Act recognizing that certain species of plants and animals have become extinct "as a consequence of man's activities, untempered by adequate concern for conservation"; that other species are in danger of, or threatened with, extinction because their habitats are threatened with destruction, adverse modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors; and that "[t]hese species of fish, wildlife, and plants are of ecological, educational, historical, recreational, esthetic, economic, and scientific value to the people of this state, and the conservation, protection, and enhancement of these species and their habitat is of statewide concern" (Cal. Fish & Game Code § 2051 (a)-(c)).

The purpose of the California Endangered Species Act is to "conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat..." (Cal. Fish & Game Code § 2052). To this end, it provides for the listing of species as "threatened" and "endangered." "Threatened species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter (Cal. Fish & Game Code § 2067). "Endangered species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Cal. Fish & Game Code § 2062).

The California Fish and Game Commission ("Commission") is the administrative body that makes all final listing decisions, while the California Department of Fish and Game ("Department") is the expert agency that makes recommendations as to which species warrant listing. The listing process may be set in motion either when "any person" petitions the Commission to list a species, or when the Department on its own initiative submits a species for consideration. In the case of a citizen proposal, the California Endangered Species Act sets forth a process for listing that contains several discrete steps.

Upon receipt of a petition to list a species, a 90-day review period ensues during which the Commission refers the petition to the Department, as the relevant expert agency, to prepare a detailed report. The Department's report must determine whether the petition, along with other relevant information possessed or received by the Department, contains sufficient information indicating that listing may be warranted (Cal. Fish & Game Code § 2073.5). During this period interested persons are notified of the petition and public comments are accepted by the Commission (Cal. Fish & Game Code § 2073.3). After receipt of the Department's report, the Commission considers the petition at a public hearing (Cal. Fish & Game Code § 2074). At this time the Commission is charged with its first substantive decision, to determine whether the petition, together with the Department's written report, and comments and testimony received, present sufficient information to indicate that listing of the species "may be warranted," (Cal. Fish & Game Code § 2074.2). This standard has been interpreted by the courts as the amount of information sufficient to "lead a reasonable person to conclude there is a substantial possibility the requested listing could occur." *Natural Resources Defense Council v. California Fish and Game Comm.* 28 Cal.App.4th at 1125, 1129.

If the petition, together with the Department's report and comments received, indicates that listing "may be warranted," then the Commission must accept the petition and designate the species as a "candidate species" (Cal. Fish & Game Code § 2074.2). "Candidate species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Commission has formally noticed as being under review by the Department for addition to either the list of endangered species or the list of threatened species, or a species for which the Commission has published a notice of proposed regulation to add the species to either list (Fish & Game Code § 2068).

Once the petition is accepted by the Commission, a more detailed level of review begins. The Department is given 12 months from the date of the petition's acceptance to complete a full status review of the species and recommend whether such listing "is warranted." Following receipt of the Department's status review, the Commission holds an additional public hearing and determines whether listing of the species "is warranted." If the Commission finds that the species is faced with extinction throughout all or a significant portion of its range, it must list the species as endangered (Cal. Fish & Game Code § 2062). If the Commission finds that the species is likely to become an endangered species in the foreseeable future, it must list the species as threatened (Cal. Fish & Game Code § 2067).

Notwithstanding these listing procedures, the Commission may adopt a regulation that adds a species to the list of threatened or endangered species at any time if the Commission finds that there is any emergency posing a significant threat to the continued existence of the species (Cal. Fish & Game Code § 2076.5).

The California Endangered Species Act is modeled after the federal Endangered Species Act and is intended to provide an additional layer of protection for imperiled species in California. The California Endangered Species Act may be more protective than the federal Endangered Species Act. Fish and Game Code § 2072.3 states:

To be accepted, a petition shall, at a minimum, include sufficient scientific information that a petitioned action may be warranted. Petitions shall include information regarding the population trend, range, distribution, abundance, and life history of a species, the factors affecting the ability of the population to survive and reproduce, the degree and immediacy of the threat, the impact of existing management efforts, suggestions for future management, and the availability and sources of information. The petition shall also include information regarding the kind of habitat necessary for species survival, a detailed distribution map, and any other factors that the petitioner deems relevant.

#### 2. INTRODUCTION

Leatherback sea turtles are critically endangered in the Pacific and face numerous threats to their continued existence including incidental take by gillnet and longline fisheries, pollution, marine debris, and habitat destruction. Listing the Pacific leatherback sea turtle under the California Endangered Species Act will provide crucial and complementary protection against many of these threats and would aid in ensuring the continued survival and eventual recovery of the species in the Pacific.

This petition reviews the natural history and status of leatherback sea turtles, focusing largely on trends and threats to the critically endangered Pacific population. The petition describes the importance of protecting this population under the California Endangered Species Act and explains why this is crucial for the survival and recovery of the population.

Though the leatherback sea turtle has been federally protected under the Endangered Species Act since 1970 (35 Fed. Reg. 8491), it is still one of the marine animals most at-risk of extinction in the United States. NMFS developed a recovery plan for the Pacific population in 1998 (65 Fed. Reg. 28359). Upon a petition by the Center, NMFS designated critical habitat along the U.S. West Coast in 2012, which include waters off California with sufficient condition, distribution, diversity, abundance and density of prey species necessary to support growth, reproduction, and development of leatherbacks (77 Fed. Reg. 4170). This designation illustrates the importance of waters off California for leatherback foraging success, and the need to conserve those waters through both federal and state efforts. The leatherback sea turtle is listed as endangered also by Oregon and Washington State (Oregon 2018, Sato 2017).

#### 3. LIFE HISTORY

#### **3.1.** Species Description

The leatherback sea turtle's slightly flexible, rubbery-textured carapace, for which *D. coriacea* is named, distinguishes the species from other sea turtles (NMFS & USFWS 1998). Leatherbacks are the largest turtle species in the world and the fourth largest living reptile (McClain et al. 2015 p. 39). Although their size varies regionally, the curved carapace length of adult leatherbacks commonly exceeds 1.5 meters (McClain et al. 2015 p. 41). Adult males and females can reach 2 meters in length while weighing up to 900 kilograms (McClain et al. 2015 p. 39). The largest known leatherback by mass was 916 kg (McClain et al. 2015 p. 39). There are body-size differences between mature turtles from the eastern (smaller) and western Pacific (larger) nesting

colonies, which are distinguished on the basis of genetic differentiation discussed in detail below.

The unique characteristics of the leatherback's carapace contribute to broad thermal tolerance in adults and enables the species to forage in water temperatures far lower than the leatherback's core body temperature (NMFS & USFWS 1998 p. 5). Adults have been reported in the Pacific as far north as the Bering Sea in Alaska and as far south as Chile and New Zealand (NMFS & USFWS 1998 p. 5). Previous studies have shown that the core body temperature in adults while in cold waters are several degrees Celsius above ambient, evidence of endothermy (warm blood) in a mostly poikilothermic (cold blood) class, Reptilia (Bostrom et al. 2010). In fact, satellite tagging studies have shown that leatherbacks can dive continuously for several weeks in waters as cold as 0.4°C (James et al. 2006). Several features such as thermal inertia (due to large body mass and exercise), insulating layer of sub-epidermal fat, countercurrent heat exchangers (in front and back flippers), brown adipose tissue that could generate heat, and high lipid concentration with low freezing point, contribute to extreme cold thermal tolerance (James et al. 2006; Bostrom & Jones 2007; Bostrom et al. 2010).

Leatherbacks have several morphological adaptations advantageous to extraordinary large-scale ocean migrations (Benson et al. 2011), deep dives (Eckert et al. 1989), and sustained residence in the open ocean (NMFS & USFWS 1998 p. 5) (Figure 1). Leatherbacks have strong front flippers that are proportionally longer than those of other sea turtle species and may span up to 270 cm wide in adults (NMFS & USFWS 1998 p. 4). Carapaces of adult leatherbacks are 4 cm thick on average, constituted mainly of tough, oil-saturated connective tissue with seven prominent ridges (NMFS & USFWS 1998 p. 4) (Figure 1). Below the leathery outer skin of the carapace, a quasi-continuous layer of small dermal bones is present (NMFS & USFWS 1998 p. 5).

Leatherbacks have a predominately black coloration with varying degrees of pale spotting that covers the scaleless skin and the sculpted ridges of the carapace (NMFS & USFWS 1998 p. 4) (Figure 1). The underside is often mottled, white to pinkish and black, and the degree of pigmentation is variable (NMFS & USFWS 1998 p. 4). The upper jaw has two tooth-like projections flanked by deep cusps that help in capturing jellyfish, their main food source (NMFS & USFWS 1998 p. 5).

Leatherback hatchlings are mostly black with mottled undersides, and covered with small polygonal bead-like scales. Flippers have a white margin and white scales are present as stripes along the back (Figure 1). In contrast to other sea turtle species, leatherbacks lack claws in both front and rear flippers (NMFS & USFWS 1998 p. 4).



**Figure 1**. Leatherback sea turtle adult (left) at the Virgin Islands National Park and hatchling at Cape Lookout National Seashore (right). Photo credit: Caroline Rogers (adult leatherback), Sea Turtle Conservancy (hatchling).

#### 3.2. Taxonomy

The generic name *Dermochelys* was introduced by Blainville in 1816 (NMFS & USFWS 1998 p. 4). The specific name coriacea was initially used by Vandelli in 1761 and was later adopted by Linnaeus in 1766 (NMFS & USFWS 1998 p. 4). The species name refers to the unique leathery texture and scaleless skin of adults (NMFS & USFWS 1998 p. 4). The leatherback turtle is the only surviving species of the taxonomic family *Dermochelyidae* (NMFS & USFWS 1998 p. 4). All other sea turtles belong to the family *Cheloniidae* and have bony carapaces plated and covered with horny scutes.

Behavioral, morphological, biochemical and genetic studies have determined that the leatherback bears some relationship to other sea turtles (NMFS & USFWS 1998 p. 4). However, the skeletal morphology of leatherbacks is unique among turtles and karyological studies support the taxonomic classification segregating sea turtle species into two distinct families (Bickham & Carr 1983). For a detailed discussion of taxonomy and synonymy, see Pritchard (1997).

#### 3.3. Population Genetics

Pacific leatherbacks are divided into two genetically distinct eastern and western populations; while both could be present off California, the West Pacific leatherback is far more commonly found feeding in waters off California (Dutton et al. 2007 p. 48). The West Pacific population is known to nest in least at 28 different sites along the tropical shores of Indonesia, Papua New Guinea, the Solomon Islands and Vanuatu. These nesting colonies all share a unique, common haplotype<sup>1</sup> (Dutton et al. 2007). Because of this, plus the lack of differentiation in haplotype frequency among the nesting colonies, the West Pacific population is considered a metapopulation composed of a single genetic stock (*id.*).

<sup>&</sup>lt;sup>1</sup> A haplotype is a group of genes that tend to be inherited together from a single parent.

#### 3.4. Reproduction and Growth

Leatherbacks reach sexual maturity at ~9-15 years and reproduce seasonally. (Zug & Parham 1996 p. 244; Dutton et al. 2005 p. 191). Mating takes place in the open ocean, and despite being seldom observed, researchers believe that mating occurs in coastal waters adjacent to nesting beaches, based on studies on Atlantic leatherback sea turtles (James et al. 2005 p. 848). Gravid (pregnant) females then migrate to nest on the same tropical shores where they were born.

Over the course of a single nesting season, female leatherbacks lay an average of five nests (Dutton et al. 2007 p. 48; Hitipeuw et al. 2007 p. 30) at an interval of ~9.3-9.5 days (Reina et al. 2002 p. 658). In the West Pacific, leatherback females nest primarily from June to September and lay roughly 85-95 eggs per nest (PFMC & NMFS 2006 p. 66). The typical interval females spend between migrating to foraging and to breeding grounds for female leatherbacks is every two to seven years, based on studies in the Atlantic, but can vary widely in response to ecological conditions in the foraging areas and interannual climate variability such as La Niña / El Niño events, particularly for sea turtles that nest in the eastern Pacific (Dutton et al. 2005 p. 189; Saba et al. 2007 pp. 398, 401).

Leatherbacks prefer to nest on unobstructed, mildly sloped, sandy, continental shores accompanied by deep offshore waters (NMFS & USFWS 1998 p. 15). Leatherback nesting activity, as in other sea turtles, includes a beach landing, a terrestrial crawl to the selected nest site usually above the high tide line, excavation of a body pit and nest chamber, egg-laying, filling and concealing the hole, and return to the sea (NMFS & USFWS 1998 p. 15). From landing to surf reentry, the total sequence lasts between 80 and 140 minutes (NMFS & USFWS 1998 p. 15).

Hatchling sex depends on the temperature of the nest environment during the 55-75 day incubation period (NMFS & USFWS 1998 p. 15). Studies have found the pivotal temperature to be 29.4° C with females becoming increasingly dominant with increasing temperature (Binckley et al. 1998). Once hatched, leatherback hatchlings cooperatively tunnel out of the submerged nest (NMFS & USFWS 1998 p. 15). This process typically begins in the evening and goes on for several days (NMFS & USFWS 1998 p. 15). Leatherback hatchlings measure approximately 5.64 cm and weigh an average of 41.2 g (NMFS & USFWS 1998 p. 15).

### 3.5. Diet and Foraging Ecology

Leatherback sea turtles typically feed on marine invertebrates including jellyfish (cnidarians, specifically medusae and siphonophores) and tunicates (pyrosomas and salps) (Bjorndal et al. 1997 p. 209; Wallace et al. 2006). Gelatinous zooplankton, known to develop in aggregations in temperate and boreal latitudes, is the preferred prey of leatherbacks (Houghton et al. 2006). While foraging in the pelagic, leatherbacks are known to exploit convergence zones and areas of upwelling waters where aggregations of prey commonly occur, such as off California (Benson et al. 2007b).

Nematocysts from deep water siphonophores found in leatherback stomach samples suggest that foraging at depth is likely (Den Hartog 1979 p. 6). Leatherbacks can dive in excess of 1,200 meters deep and over one hour in duration (Houghton et al. 2006), yet most recorded leatherback

dives range between 50 and 200 meters (Houghton et al. 2006 p. 2568). Leatherbacks spend most of their time at sea submerged and display patterns of continual diving that suggest frequent surveying of the water column for gelatinous prey (Houghton et al. 2006).

Dense aggregations of jellies (scyphomedusae) are common in the summer and fall months throughout the nearshore regions from Central California to Northern Oregon (Graham et al. 2010). Oceanographic retention zones and upwelling shadows, such as those in the neritic waters off Central California, are particularly favorable habitat for leatherback prey (Graham et al. 2010). Leatherbacks are most frequently observed feeding on *Chrysaora fuscescens*, *Chrysaora colorata*, and *Aurelia* spp. which are especially common in retention areas between Point Reyes and Monterey Bay, California (Benson et al. 2007b p. 345). Leatherback predation on high densities of readily-captured jellyfish results in high energy intake at a certain time of the year, consistent with sea turtles gaining weight while in that location (Heaslip et al. 2012).

Studies have shown a positive relationship between leatherback abundance in neritic waters off California and the average annual Northern Oscillation Index (NOI) (Benson et al. 2007b p. 345). Years of positive NOI values appear to correspond with conditions favorable to upwelling along the California coast. This upwelling leads to phytoplankton and zooplankton (including jellyfish) production, which in turn draws in leatherbacks (Benson et al. 2007b p. 345).

#### 3.6. Migration

Leatherbacks spend nearly their entire lives in the ocean's pelagic zone (*i.e.*, the water column). Some females may forage year-round in tropical habitats near nesting beaches; others undertake a lengthy migration to exploit temperate foraging habitats like that off central California (Benson et al. 2011; Lontoh 2014). The latter turtles forage in temperate waters except during the nesting season, when gravid female leatherbacks migrate to tropical beaches to lay eggs (NMFS & USFWS 2013).

The details of lengthy leatherback migrations were largely unknown until recently when researchers discovered distinct migratory corridors followed by the West Pacific leatherback population (Benson et al. 2007a, 2011). Those West Pacific leatherbacks that embark on a trans-Pacific migration to the temperate continental shelf of the U.S. West Coast forage on the seasonally abundant aggregations of gelatinous zooplankton (Benson et al. 2007b p. 345; Block et al. 2011 p. 87; Bailey et al. 2012 p. 739) (see Figure 2). Here, coastal upwelling creates a highly productive and dynamic ecosystem that they efficiently exploit (Benson et al. 2007b). The leatherbacks that forage in California have greater body size than tropical foragers (Benson et al. 2011; Lontoh 2014).

The eastern Pacific population occurs along the coast of California and exhibits some overlap in distribution with the western Pacific population (Tiwari et al. 2013). Eastern Pacific leatherbacks are known to migrate south from the shores of Mexico, Costa Rica and Nicaragua, where they nest, through the Galapagos to feeding sites throughout the southeast Pacific off South America's West Coast (Shillinger et al. 2008 p. 1410; Block et al. 2011 p. 87; Bailey et al. 2012 p. 740).



**Figure 2.** West Pacific leatherback sea turtles' migration and areas of primary foraging habitat (Data source: Benson et al. 2011; photo credit: NMFS 2017a).

#### 4. POPULATION TREND, DISTRIBUTION, AND ABUNDANCE

#### 4.1. Population Trend

The critically endangered West Pacific leatherback turtle population has suffered a catastrophic decline over the last three decades. This population faces extinction mainly as a result of incidental bycatch in commercial and artisanal fisheries, overharvest of eggs and killing of adults at nesting beaches, as well as commercial and residential development on nesting beaches (Kaplan 2005; Tapilatu et al. 2013).

In the Pacific Ocean, leatherback populations have drastically plummeted at all major nesting beaches resulting in more than 95% decline in leatherbacks from the eastern and western populations combined over the last 30 years (Spotila et al. 2000; Tapilatu et al. 2013). If current trends continue, Pacific leatherbacks are predicted to go extinct within the next few decades (Spotila et al. 2000; Tapilatu et al. 2013).

The number of Pacific leatherback sea turtles in California waters has declined consistently with the decline observed in the Pacific population. Scott Benson, NMFS staff and author of *Large-scale movements and high-use areas of western Pacific leatherback turtles*, in 2015 estimated the number of Pacific leatherbacks in California waters from 2005–2014 averaged 54 individuals annually (Benson, *pers. comm.* 2015). The prior estimate, using data from 1990-2003, indicated an annual average of 178 leatherback sea turtles off California (Benson et al. 2007b).

#### 4.2. Historical and Current Distribution

Leatherbacks have the largest geographic range of any living marine reptile, spanning the temperate and tropical waters in all oceans (Hays et al. 2004; James et al. 2006; Benson et al. 2007a, 2011). Adults have been reported in the Pacific as far north as the Bering Sea in Alaska and as far south as Chile and New Zealand (NMFS & USFWS 1998 p. 5).

West Pacific leatherbacks are a highly migratory species and are known to swim over 10,000 km within a single year (Benson et al. 2007a, 2011; Shillinger et al. 2008). The incomparable migratory ability is made possible by the leatherback's morphological adaptations noted above. These adaptations equip leatherbacks for sustained residence at sea and enable them to traverse enormous ocean basins such as the Pacific (Benson et al. 2007a, 2011).

While there exists a small probability that a stranded leatherback off California could be from the eastern Pacific population, satellite tagging studies and genetic analyses of tissue samples thus far (e.g., of stranded leatherbacks on California beaches or incidentally caught in the California swordfish drift gillnet fishery) indicate that individuals foraging in waters off California originate from nesting beaches in the West Pacific (Benson et al. 2007b, 2011 p. 6; Dutton et al. 2007; Harris et al. 2011; Bailey et al. 2012 p. 739).

#### 4.3. Historical and Current Abundance

The Pacific leatherback population has declined dramatically in abundance from historical levels. Population declines have been documented at nesting beaches throughout the Indo-Pacific region (Chan & Liew 1996; Spotila et al. 2000; Hitipeuw et al. 2007; NMFS & USFWS 2013). The total West Pacific leatherback population was estimated in 2007 to include 2,700-4,500 breeding females with 1,100-1,800 female leatherbacks nesting annually (Dutton et al. 2007 pp. 47, 51). More recently, deriving abundance estimates from nest counts gives a conservative West Pacific population estimate of 562 nesting females (NMFS 2017b p. 108). There are expected to be half that amount by 2040, which is too small a population to recover (Tiwari et al. 2013; Wallace et al. 2013).

One of the leatherback's most important nesting areas in the West Pacific (at Terengganu, Malaysia) was virtually eradicated by the mid-1990s from fisheries interactions on the high seas and around Malaysia plus egg exploitation, with nesting populations representing less than 2% of the levels recorded in the 1950s (Chan & Liew 1996). The nesting population in this region declined from 3,103 female leatherbacks estimated in 1968 to only two nesting females in 1994 (Chan & Liew 1996). Currently, leatherback nesting in this region may be close to extirpation (Chan 2006).

The only remaining major nesting areas for the West Pacific leatherback population, which migrates across the Pacific to feed on the rich aggregations of jellyfish off the U.S. West Coast (Benson et al. 2007a, 2011), are on the Bird's Head Peninsula beaches of Jamursba-Medi and Wermon in the Indonesian province of Papua (Hitipeuw et al. 2007; Tapilatu & Tiwari 2007). Yet even at these beaches, leatherback nesting has declined significantly over the last thirty years and no recovery has been observed despite protection efforts of nesting areas initiated in 1992 (Hitipeuw et al. 2007). Counts of leatherbacks at nesting beaches in the West Pacific indicate

that the population has been declining at a rate of almost six percent per year since 1984 (Tapilatu et al. 2013).

At one of these remaining leatherback rookeries, Jamursba-Medi, studies estimated that 300-900 female leatherbacks nested annually in 2004, down from 1,000-3,000 prior to 1985 (Hitipeuw et al. 2007 p. 31). The leatherback population on Jamursba-Medi continued to decline after 1993, when scientists first began to consistently record data (Hitipeuw et al. 2007 p. 31). Yet the population has not collapsed to the extent of others in the Pacific basin (Hitipeuw et al. 2007 p. 31).

#### 5. IMPORTANCE OF CALIFORNIA WATERS FOR LEATHERBACKS

The waters off the coasts of California, Oregon, and Washington within the California Current ecosystem comprise one of the most important foraging areas for leatherback sea turtles in the eastern North Pacific Ocean (Benson et al. 2007b; Harris et al. 2011 p. 333). In this region, coastal upwelling creates a dynamic and highly productive ecosystem, ideal for foraging adults (Benson et al. 2007b; Graham et al. 2010). In California, leatherbacks typically forage seasonally, from July to November, on large aggregations of jellyfish (*Scyphomedusae*) along the central coast when sea surface temperatures are 14-17°C (Benson et al. 2007b p. 345).

Leatherbacks' presence off California is strongly related to seasonal upwelling that spatially drives food availability. The California Current ecosystem exhibits stronger seasonal upwelling between Point Conception and Cape Mendocino between July and October (Huyer 1983 p. 267). Previous studies have shown that leatherback distribution and occurrence in waters off California have been linked to sea surface temperature of 15-16°C during late summer and early fall (Starbird et al. 1993). For example, sightings of leatherback turtles are often reported in Monterey Bay during August by recreational boaters, whale-watching operators, and researchers (Benson et al. 2007b p. 338). The greatest densities of leatherbacks off central California consistently have been found where upwelling creates favorable habitat for jellyfish production, their main prey (Benson et al. 2007b p. 337).

In the 1998 Recovery Plan, NMFS stated that "the waters off the west coast of the United States may represent some of the most important foraging habitat in the entire world for the leatherback turtle" (NMFS & USFWS 1998 p. 14). Studies have documented substantial numbers of leatherbacks from West Pacific nesting beaches traveling thousands of miles to feed on seasonally abundant aggregations of jellyfish in the California Current ecosystem (Benson et al. 2007b p. 346). The significance of these waters as foraging grounds for West Pacific leatherback cannot be overstated (Benson et al. 2007b p. 346).

Protection of foraging grounds off California is crucial to conserve leatherback turtles. From 1963 to 2016, there have been 151 reported leatherback sea turtle strandings along the U.S. West Coast, including Alaska, Washington, Oregon and California (Eguchi et al. 2017a). From 2013 to 2017, six leatherbacks stranded on the U.S. West Coast, and all occurred in California (NMFS 2018a). This is consistent with the historical trends, which show that nearly all stranded leatherback sea turtles with evidence of human interaction strand in California (Eguchi et al. 2017a, Figure 3). Successful conservation efforts for leatherback turtles must include protecting migration corridors and reducing/eliminating threats in foraging areas off California (Figure 4).

Studies have highlighted that waters off central California are a critical foraging area for one of the largest remaining Pacific nesting populations (Benson et al. 2007b p. 346). Therefore, protecting foraging leatherback sea turtles off California waters from lethal threats such as oil spills, ship strikes and incidental bycatch in commercial and recreational fisheries is of critical importance for the survival and recovery of the species.



Figure 3. The number of stranded leatherback turtles (excluding those released alive) along the U.S. West Coast from 1963 through 2016. No strandings occurred outside California after 1993. Years without stranding records were omitted from the plot to make it concise (Source: Eguchi et al. 2017a).

Stranded leatherback turtles with human interaction



**Figure 4. California distribution map of leatherback sea turtles.** Black dots are leatherback sea turtle telemetry data. Pink or dark shaded area indicates the leatherback sea turtle critical habitat designation in California (not pictured: critical habitat in Oregon and Washington). "PLCA" is the Pacific Leatherback Conservation Area that excludes the drift gillnet fishery for three months each year (Source: NMFS 2017a).

#### 6. FACTORS AFFECTING THE ABILITY OF THE POPULATION TO SURVIVE AND REPRODUCE

#### 6.1. Present or Threatened Modification or Destruction of Its Habitat

West Pacific leatherbacks expend tremendous time and energy migrating to and along the California coast to forage on jellyfish, demonstrating the importance of this habitat. Among 37 adult leatherbacks tagged in coastal waters off California, the majority moved north and spent time in areas off northern California and Oregon before moving towards the equatorial eastern Pacific, then eventually westward, presumably towards West Pacific Ocean nesting beaches (Benson et al. 2011). While in coastal waters off California these leatherbacks are highly vulnerable to anthropogenic impacts.

Most threats to leatherback sea turtles occur in nearshore marine areas. The cumulative impact of anthropogenic activities on leatherback sea turtles are higher nearshore and within the national marine sanctuaries (Maxwell et al. 2013, Figure 5). Because California maintains jurisdiction offshore to 3 nm – wherein occurs the vast majority of human activities in the marine environment (e.g., fishing, swimming, boating) – it is uniquely situated to mitigate these threats.



**Figure 5.** Combined tracking data and cumulative impact data (underlying human stressors weighted by species vulnerability) for leatherback sea turtles, marine mammals and seabirds (Source: Maxwell et al. 2013).

In recognition of the magnitude of coastal impacts, state activities, brochures, maps, and educational resources emphasize actions to protect habitats in California's nearshore coastal zone used by leatherbacks. For example, the California Coastal Commission has active public education and outreach efforts focused on coastal beaches and waters, including an "Adopt-a-Beach" program and "California Coastal Cleanup Day" that annually draws tens of thousands of participants; the California Department of Fish and Game is actively involved in implementing the state's Marine Life Protection Act and the identification of Marine Protected Areas. *Id.* Yet California has established none of these measures on the basis of criteria specifically intended to improve leatherback sea turtle survival.

In part because no state measures specifically protect leatherback prey quality or density, the federal government identified California's offshore waters between the 200- and 3000-meter isobaths from Point Arena to Point Sur, and waters between the coastline and the 3000-meter isobath from Point Sur to Point Arguello, as leatherback critical habitat. *Id.* at 4183, 4186-87. Areas of coastal upwelling produce abundant and dense aggregations of leatherback prey; thus it is critically important to not only protect leatherback prey in these areas but also the sea turtles' ability to get to the prey from hundreds of miles away.

Leatherbacks and their preferred prey are in danger from oil and gas extraction activities on and around the California Coast, aquaculture facilities, coastal development, entanglement by and ingestion of marine debris, and beach erosion. Leatherbacks are also in immediate danger from overexploitation by fisheries, primarily through entanglement and ingestion of marine debris. The State of California is in a unique situation to protect leatherbacks from these threats, which are discussed in greater detail below.

#### 6.1.1. Oil and Gas Activities in California

Juvenile and adult leatherback sea turtles may encounter oil, tar, and spill-related chemicals in the water column, at the surface, and through contaminated prey. Such exposure can lead to declining red blood cell counts and increased white blood cell counts; impaired ability to regulate the internal balance of salt and water; and sloughing of the skin that can lead to infection (NMFS 2003 at 40-43). Sea turtles inhale very deeply before diving and thus can inhale large concentrations of toxic fumes at the surface of an oiled area, which in turn can lead to respiratory impairment (NMFS 2003 at 40). Because sea turtles generally do not avoid oil-contaminated areas, they are very vulnerable to harmful contact with oil and its byproducts. Turtles are particularly prone to ingest oil and tar. Sea turtles are known to indiscriminately ingest tar balls that are about the size of their normal prey. Ingested tar interferes with digestion, sometimes leading to starvation, and can cause buoyancy problems, rendering the turtle more vulnerable to predation and less able to forage. In addition, tar and oil remain in the digestive system for several days, increasing the turtle's absorption of toxins (NMFS 2003 at 39-40).

Oil spills also affect sea turtles in less direct ways. Oil spills can reduce food availability, and ingestion of contaminated food can expose turtles to harmful hydrocarbons. Oil exposure may render turtles more vulnerable to fibropapilloma, a condition that can degrade the turtle's overall health and interfere with feeding and other behaviors (NMFS 2003 at 44). The potential impacts from oil spills are particularly troubling given the highly imperiled status of leatherback sea turtles.

Oil spill response also presents hazards to sea turtles. Approximately 54% (9,198 mi<sup>2</sup> [23,822 km<sup>2</sup>]) of the designated critical habitat in California (16,910 mi<sup>2</sup> [43,797 km<sup>2</sup>]) is located within the Pre-Approval Zone for use of dispersants in response to an oil spill. Dispersants and dispersed oil in the water column are of equal concern in terms of negative impacts to leatherbacks. Sea turtles may be exposed to dispersants and dispersed oil as they swim and feed in the water column. Leatherback sea turtles migrate over large areas to feed on aggregations of jellyfish, sea nettles, and salps in late summer close to shore (77 FR 4170). They spend over 75% of the time in the upper 5 m (16 ft) of the water column (NMFS 2012), which potentially exposes them to floating oil and dispersant spray. The peak concentration of chemically dispersed oil and dispersants will occur in the top few meters of the water column (typically <33 ft [10 m]) immediately after application of dispersants.

While surfacing to breathe, sea turtles can breathe in fumes from or ingest dispersants and dispersed oil. Monitoring data have indicated that the use of the Corexit dispersants killed up to 25% of all organisms living 500 feet below the surface in areas where the dispersant was used. In sea turtles, dispersants contain components that can interfere with lung function, respiration, digestion, excretion, and salt gland function to a degree "similar to the empirically demonstrated

effects of oil alone" (NMFS 2003). According to the Minerals Management Service, dispersant components absorbed by sea turtles can affect their organs and interfere with digestion, excretion, and respiration (MMS 2007). Burning oil at the surface, another potential response to oil spills, can directly harm turtles at the surface, particularly those that are trapped in algae mats, and indirectly harm turtles by causing lung irritation from smoke and formation of ingestible, sinking globs of oil (*id*.).

#### 6.1.2. Aquaculture

The growth of aquaculture off California threatens to obstruct leatherback sea turtle's migration to coastal waters by entangling them in fixed gear. Leatherbacks have been recorded entangled in aquaculture gear several times in the Atlantic (Hamelin et al. 2017 p. 635). Leatherback sea turtles have front flippers that are proportionately larger when compared to similar species, which may make them more vulnerable (NMFS 2012 p. 6). Longlines used in mussel aquaculture are a documented source of mortality to leatherback sea turtles (Price et al. 2017 p. 19, 32). In addition, the federal government has described aquaculture as an activity that may adversely impact leatherback sea turtles' migratory pathway to nearshore waters off the U.S. West Coast. 77 Fed. Reg. 4191. Off California in particular, the 100-acre mussel aquaculture facility six miles offshore poses an entanglement risk to leatherback sea turtles (NMFS 2012 p. 6).

# 6.1.3. Coastal Development Throughout the West Pacific Leatherbacks' Range

As human populations expand throughout the tropical Pacific at unprecedented rates, commercial and residential development on beachfront property increasingly encroaches on leatherback habitat (NMFS & USFWS 1998 p. 21, 2013). Recreational and commercial use of nesting beaches, litter and other debris on beaches and in the ocean, and the general harassment of turtles all degrade leatherback habitat (NMFS & USFWS 1998 p. 21). Plus, the increased human presence near leatherback habitat tends to increase the direct harvest of leatherbacks and their eggs (*id.*).

#### 6.1.4. Entanglement by and Ingestion of Marine Debris

The entanglement in and ingestion of marine debris constitutes a serious and widespread threat to the leatherback populations (NMFS & USFWS 1998 p. 24; Schuyler et al. 2014 p. 132). Leatherbacks are easily entangled in abandoned fishing gear, lines, ropes, and nets (NMFS & USFWS 1998 p. 24). Leatherbacks also commonly mistake plastic bags, plastic sheets, balloons, latex products, and other refuse for jellyfish, their preferred prey (NMFS & USFWS 1998 p. 24; Bugoni et al. 2001; Nelms et al. 2016). Mortality from marine debris threatens the leatherback population throughout the Pacific including the nesting population at Jamursba-Medi (Hitipeuw et al. 2007 p. 34).

Mrosovsky et al. (2009) estimated that approximately one-third of all adult leatherbacks autopsied from 1968 to 2007 had ingested plastic. Plastic ingestion can interfere with laying eggs through obstruction (Plot and Georges 2010). The ingestion of marine debris can cause

suffocation by clogging the esophagus of leatherbacks or lead to forms of poisoning (NMFS & USFWS 1998 p. 24; Nelms et al. 2016).



**Figure 6.** Great Pacific garbage patch modelled plastic concentration (kg km<sup>-2</sup>) and leatherback turtle migratory routes (green and red dots). (Image credit: The Ocean Cleanup Foundation; leatherback telemetry data from Benson et al. 2011).

#### 6.1.5. Vessel Strikes from Commercial Shipping and Other Boat Traffic

Stranding records provide only a minimum of information about the magnitude of the threat of vessel strikes to leatherback sea turtles. From 1989 through 2014 there have been 12 reported incidents of vessel struck leatherback sea turtles in California, but this is an underestimate because carcasses that sink or strand in an area where they cannot be detected go unreported or unobserved (NMFS 2017c). NMFS has concluded:

It is impossible to know how many leatherbacks have been affected by ship strikes because it is likely that animals are not seen or their bodies are destroyed as a result of either blunt force trauma or getting caught in a ship's propellers. Large whales, due to their size, are much more likely to be seen after an interaction with a ship; leatherbacks average six feet in length while the large whales... may range in size from 40 to 90 feet in length.

(*id.* at 58). Given that NMFS has identified the waters off central California as an important foraging area for leatherbacks during the summer and fall, it is likely that they are affected by ship traffic in that area.

Year	Month	Day	Location	County
2005 9		16	Beached	Marin
2008	8	9	Floating in Water	San Luis Obispo
2005	8	21	Beached	San Francisco
2001	4	30	Floating in Water	Monterey
1998	10 2 Beached		San Francisco	
1990	9	29	Beached	Marin
1990	1	13	Beached	Santa Barbara
1989	6	27	Floating in Water	Los Angeles
1989	8	22	Beached	Marin
1989	7	10	Beached	Los Angeles
1989	10	3	Beached	San Mateo
1989	9	23	Beached	San Mateo

**Table 1.** Reported incidents of vessel-struck leatherback sea turtles in California 1989-2014(NMFS 2017c at 58-59).

#### 6.1.6. Beach Erosion

Many leatherback nesting beaches are subject to seasonal or storm related erosion and accretion (Hitipeuw et al. 2007 pp. 28, 30). From August through October at Jamursba-Medi, high surf and strong currents erode large numbers of unhatched nests (Hitipeuw et al. 2007 p. 34). At this time of year, only a fraction of the beach at Jamursba-Medi remains between the high water mark and the forest, while some stretches of beach can end up completely eroded (Hitipeuw et al. 2007 p. 34). In April, as nesting begins to increase at Jamursba-Medi, the pattern reverses and sand accretion returns beaches up to 65 meters wide by late August (Hitipeuw et al. 2007 p. 34). Such a delicate balance puts leatherback nesting habitat at serious risk from global climate change. Erosion already destroys an estimated 45% of leatherback nests at Jamursba-Medi, including 80% of the nests at Warmamedi (Hitipeuw et al. 2007 p. 30). At nearby Wermon, 11% of the observed nests were lost to the high tides in 2003-2004 (Hitipeuw et al. 2007 p. 30). As sea levels continue to rise, the leatherback's fragile habitat will only become more at risk of destruction from wave-induced erosion (Van Houtan & Bass 2007).

#### 6.2. Overexploitation

#### 6.2.1. Fisheries bycatch and entanglement in fishing gear

The leatherback's expansive migrations over ocean basins expose the species to a gauntlet of threats from fisheries. Their large pectoral flippers and active behavior make leatherbacks particularly vulnerable to entanglement in fishing gear (James et al. 2005 p. 197). Once entangled, leatherbacks usually continue to try to swim, exhausting themselves until they eventually drown unless surfaced (James et al. 2005 p. 199). In addition, prolonged periods of forced submergence trigger severe metabolic acidosis, which often drains the turtle's strength so significantly that it is unable to recover. As a result, many leatherbacks do not survive even when surfaced before they have drowned (Work & Balazs 2010 p. 422).

Incidental take in fisheries threatens the entire Pacific leatherback population where active and abandoned driftnets and longlines have a long history of entangling and killing leatherbacks (NMFS & USFWS 1998 p. 24). During the 1990s, gillnet and longline fisheries killed at least 1,500 leatherbacks annually in the Pacific (Spotila et al. 2000 p. 530). Off the U.S. West Coast, leatherbacks have been incidentally caught in drift gillnets off California, Oregon and Washington, longlines off California and Hawaii (NMFS & USFWS 1998 p. 24), groundfish pot gear off California in 2008 (Eguchi et al. 2017a, Jannot et al. 2011), and crab trap gear in 2016 (NMFS 2018a; released alive). Recently a leatherback sea turtle was found dead (entangled) on October 18th in unidentified fishing gear, just a few miles off the coast between Malibu and Ventura in Southern CA by NMFS scientists (DFW, *pers. comm.* 2019).

The groundfish pot fishery shows well the difficulty in monitoring and mitigating catch of West Pacific leatherbacks in U.S. West Coast fisheries. Extrapolating from the observer coverage rate of approximately 3%, this produces an estimate of 35 individuals caught by the groundfish pot fleet during the 2006-10 period (Eguchi et al. 2017a). This extrapolation, however, results in large uncertainty regarding the actual interactions based on only a single bycatch incident in all U.S. west coast groundfish fisheries in the 14 years of observation (2002-2015). Conclusive statements about leatherback turtle bycatch in this fishery cannot be made without more data on the fishery (bycatch or no bycatch) and on the overlap between the fishery and leatherback turtles. Because the population consists of so few individuals, and is declining rapidly, even rare instances of leatherback bycatch necessitates measures to reduce deaths (*id.* p. 19).

In addition to the leatherbacks that are directly observed in fishing gear, some leatherbacks strand with evidence of fishing gear entanglements. Of all the strandings of dead leatherback sea turtles since 1963, five indicated evidence of fishery interactions (1993, 1998, 2003, 2008, and 2015), and all five were found in central and southern California (*id.*). Stranding records are based on discoveries of turtles, which underrepresents the total number stranded and gives little information about where the fishery gear entanglement occurred. Nevertheless, it shows the persistence of the fishing gear threat to leatherbacks in California.

Interactions of fisheries with leatherback sea turtles off California, Oregon, and Washington, have a particularly large impact to the population based on the likelihood that the turtles are adult females. Based on aerial surveys conducted off central California from 1990-2003, the majority of leatherbacks observed were larger subadults or adults (Benson et al. 2007). The sex ratio of
the West Pacific population is unknown, but researchers that have captured leatherbacks in-water off central California have documented that approximately 2 out of 3 leatherbacks were females (~66 percent) (*id.*). Thus, for management purposes NMFS has assumed that fisheries interact with adult female leatherback sea turtles off California (NMFS 2018b p. 52). Given the current estimate of 562 adult nesting leatherbacks in the West Pacific population (NMFS 2017b), any interaction with an adult female is significant to the population.

#### 6.2.1.1. California's Pelagic Fisheries Threaten Leatherback Sea Turtles

Both drift gillnets and longline fishing for swordfish, tuna, and sharks off California interact with and threaten the persistence of leatherback sea turtles. Observed captures of leatherback sea turtles in the drift gillnet and longline fisheries coincide with the leatherback's seasonal foraging in the neritic waters off the U.S. West Coast (Benson et al. 2007b p. 4). All of the leatherback takes in the California/Oregon drift gillnet fishery occurred from September to January, with the majority of the takes occurring in October (NMFS Biological Opinion 2004 p. 182). Similarly, leatherback takes in the former West Coast-based longline fishery also occurred in October and November (NMFS 2004 p. 182).

Based on studies showing that ocean fronts and eddies attract both swordfish and leatherback sea turtles into the same areas, fishing gear interactions will continue to be problematic in California leatherback habitat (Scales et al. 2018; Hazen et al. 2018). Unless effective mitigation measures are implemented, the diversity of pelagic fishing gears proposed for use off California present a real and persistent threat to leatherback sea turtles.

**The California drift gillnet fishery** has been the primary threat to leatherback sea turtles off of California in recent decades. Between 1990 and 2001, twenty-three leatherbacks were observed taken in the drift gillnet fishery (PFMC & NMFS 2006 p. 121). Of the twenty-three taken, sixteen leatherbacks died from their capture, constituting a mortality rate of 70% (PFMC & NMFS 2006 p. 122). These observed interactions, when added to interactions with the longline fishery, led to an estimate of up to 60 annual leatherback takes for the drift gillnet and West Coast longline fisheries (NMFS 2004 pp. 202, 203).

In 2000, an Endangered Species Act section 7 consultation and biological opinion concluded that the incidental leatherback mortality in the California/Oregon drift gillnet fishery would jeopardize the survival and recovery of the endangered leatherback (PFMC & NMFS 2006 p. 159). In 2001, the drift gillnet fishery was consequently prohibited between August 15th and November 15th annually in the area where most leatherback interactions occurred (81 Fed. Reg. 70660). The seasonally closed area, designated the "Pacific Leatherback Conservation Area," spans diagonally from Pt. Sur to a point due west of Pt. Conception, out to 129° west longitude and north to 45° north latitude (PFMC & NMFS 2006 p. 122).

Since management measures to reduce leatherback interactions were put in place in 2001 (the Pacific Leatherback Conservation Area), two leatherbacks were observed taken and released alive in the California drift gillnet fishery, one in 2009 and one in 2012 (NMFS 2013). In 2013, NMFS issued a biological opinion on the continued authorization of the West Coast drift gillnet

fishery anticipating incidental interactions with ten leatherback sea turtles over a five-year period, including up to seven lethal interactions (*id*.).

These anticipated interactions with the drift gillnet fishery will have a population-level impact; NMFS scientists have determined that any more than one leatherback mortality per seven years will delay the population's recovery (Curtis et al. 2015). As mentioned above, almost all of the leatherbacks foraging off the U.S. West Coast are from the Jamursba-Medi's nesting population of females (Benson et al. 2011 p. 6) (Figure 2).

In part due to the impacts of the fishery on leatherback sea turtles, in September 2018, the California Governor signed a bill that would phase-out the use drift gillnets over four years (S.B. 1017). The Department will notify fishermen of their eligibility for the transition program when funding is available (14-Z Cal. Regulatory Notice Reg. 532, 533, Apr. 5, 2019).

**Highly migratory species longline fisheries** are currently prohibited in the U.S. Exclusive Economic Zone, but industry efforts to introduce longlines, buoy gear and linked buoy gear to catch pelagic fish like swordfish to the U.S. West Coast continue. Recently a number of longline vessels that land catch in California ports have organized as the California Pelagic Fisheries Association (NMFS 2016). Members have expressed interest in fishing in the future as part of a California-based fishery (*id.*). The Pacific Fishery Management Council discussed authorizing a shallow-set longline fishery under the Highly Migratory Species Fishery Management Plan as recently as the November 2019 meeting, but delayed the agenda item until the Highly Migratory Species Management Team reported on three questions from the Council. In April 2019 NMFS issued exempted fishing permits to use the gear in the Exclusive Economic Zone off California (84 Fed. Reg. 20,108 (May 8, 2019)).

The history of longlines provides evidence that this gear is a threat to the persistence of leatherback sea turtles. In Pacific longline fisheries, 27% of captured leatherbacks are estimated killed (Kaplan 2005). In 2000, pelagic longlines in the Pacific captured an estimated 20,000 leatherbacks, resulting in the mortality of an estimated 1,000-3,200 leatherbacks (Lewison et al. 2004).

#### 6.2.1.2. Foreign Fishing Threatens Pacific Leatherbacks

Leatherbacks are also highly vulnerable to threats from fishing gear near their nesting habitats (PFMC & NMFS 2006 p. 122; NMFS & USFWS 2013; Tapilatu 2017 p. 131). In the West Pacific Ocean, illegal fishing occurs in the waters off Indonesia's most important nesting beaches and communities in the area have reported dead leatherbacks entangled in fishing nets and marine debris (Hitipeuw et al. 2007 p. 34). In addition, the waters adjacent to Jamursba-Medi are increasingly being targeted by national and foreign fishing fleets (Lewison et al. 2004 p. 225).

Many countries' commercial fleets operate in areas beyond national jurisdiction (ABNJ) and interact with leatherback sea turtles. From 1989-2015, 331 leatherback interactions were reported by 16 countries that operate in the West and Central Pacific Ocean (ABNJ 2017). Based on these reports NMFS estimated that the total leatherback interactions were approximately 6620 – or 245 annually – for those 16 countries that participated in the ABNJ exercise in 2017 (NMFS 2019;

Table 2). Other estimates of leatherback interactions are higher, with two estimating that between 200 and 700 leatherbacks are caught annually in the North Pacific Ocean (*id*.).

Source	Estimate	Time Frame	Annual Average
Beverly and Chapman 2008	200-640 juveniles and adults	Annually	200-640
Lewison et al. 2004	1,000-3,200	Year 2000	1,000-3,200
ABNJ 2017	6,620	1989-2015	245
Peatman et al. 2018	9,923 median	2003-2017	709

**Table 2.** Summary of estimated interactions of leatherback sea turtles in the North Pacific Ocean (Source: NMFS 2019 p. 255).

International measures to reduce the threat of shallow-set longline fisheries to leatherback sea turtles may not be working as well as hoped. For example, the Western and Central Pacific Fisheries Commission (WCPFC) considered in 2008 that the threat to sea turtles was sufficiently severe to warrant the adoption of a measure specifically requiring mitigation to reduce sea turtle mortality from longline interactions (CMM 2008-03); there is no evidence to suggest that those threats have appreciably diminished (ABNJ 2017). One reason for this is that though approximately 20% of the fishing effort uses shallow-set longlines, analysis indicates that <1% of fishing effort is subject to mitigation (*id.*). Each country establishes and enforces their definition of "shallow-set," creating flexibility in the conservation measure that weakens its effectiveness (*id.*).

Even if all shallow-set longlines were compliant with CMM 2008-03, the conservation benefits would be less than if the Commission reduced mortality and interactions in deep-set longlines (NMFS 2017d). First, sea turtle mortality reductions would be greater if measures applied to deep-set longlines because sea turtles caught in deep sets have a higher probability of asphyxiation (*id*.). Second, reducing overall interactions would have a larger benefit in the deep-set fishery because there are four times as many deep-set hooks set as shallow-set hooks. Even though shallow-set longlines are more likely to interact with leatherback sea turtles, the scale of the deep-set longline fishery means that the maximum interaction reduction possible through mitigation is greater than the maximum reduction possibly obtained with shallow-set mitigation (*id*.).

Low observer coverage hinders creation of measures specific to mitigating leatherback sea turtle interactions and mortality in longlines in the North Pacific Ocean (ABNJ 2018 p. 10). To detect relatively rare bycatch events requires close to 100% observer coverage; yet in the North Pacific Ocean, longline coverage is between 1.0-4.5% (*id.*).

# 6.2.2. Harvest of Adults and Eggs at Nesting Beaches

The harvest of leatherbacks and/or their eggs at nesting and marine environments constitutes a widespread threat to these turtles in the tropical Pacific (NMFS & USFWS 1998, 2013 pp. 21,

23). Historically, female leatherbacks have been severely harvested at their nesting beaches and have been subjected to harvest at sea (NMFS & USFWS 1998 p. 21). Leatherbacks are harvested for subsistence on West Pacific islands (PFMC & NMFS 2006 p. 71) and in the eastern Pacific, leatherback meat can still be found for sale on occasion in local Chilean, Peruvian, and Mexican markets (NMFS & USFWS 1998 p. 23).

Across the Pacific, leatherback populations have yet to recover from years of historical egg harvests that depleted recruitment of their populations (Hitipeuw et al. 2007 p. 23). Population declines are exacerbated by the removal of large juveniles and mature individuals while the persistent harvest of eggs inhibits the recruitment of the next generation of leatherbacks (NMFS & USFWS 1998 p. 21). A large-scale leatherback egg harvest persisted on Jamursba-Medi during the 1980s where 50,000-75,000 eggs were observed taken weekly by several boats in 1984 and 1985 (NMFS & USFWS 1998 p. 23). Incidental mortality from fishing along with the severe harvest of leatherback eggs are the two major factors responsible for the collapse of the Pacific leatherback population (PFMC & NMFS 2006 p. 67).

# 6.3. Predation

# 6.3.1. Nest Predation

At some nesting beaches, predation upon leatherback eggs by feral pigs and other animals can be a serious problem (Hitipeuw et al. 2007 p. 30). Jamursba-Medi suffers from extensive egg predation from wild pigs, resulting in the destruction of an estimated 14%-93% of leatherback nests (Hitipeuw et al. 2007 p. 34). At nearby Wermon, feral pigs and dogs accounted for the destruction of 17.5% of the observed nests in 2003-04 (Hitipeuw et al. 2007 p. 30). Elsewhere in the Pacific, leatherback nests are destroyed by predation from domestic animals and wild species including rats, mongoose, birds, monitor lizards, snakes, crabs, ants and other invertebrates (NMFS & USFWS 1998).

# 6.4. Disease

The first leatherback with the tumor-forming disease fibropapillomatosis was seen in Mexico on the Pacific coast in 1997 (Huerta et al. 2002). Likely caused by a herpesvirus (Ene et al. 2005), internal and external tumors (fibropapillomas) may grow large enough to hamper swimming, vision, feeding, and potential escape from predators (Herbst 1994). Other sea turtle species are more commonly afflicted.

# 6.5. Other Natural Events or Human-Related Activities

# 6.5.1. Climate Change

Global warming represents perhaps the greatest long-term threat to the leatherback sea turtle's survival. Conservation gains for the species coming from reductions in fisheries bycatch and protection in nesting beaches may be offset by inundation of nesting beaches from rising sea levels and increased storminess; reduction in hatching success and skewed sex ratios due to warmer nesting temperatures; and declines in ocean productivity from warming waters and ocean acidification. Each of these impacts is briefly described below.

#### 6.5.1.1. Ocean Warming Affects Pacific Leatherback Sea Turtles

The global oceans are warming rapidly and at unprecedented magnitude (IPCC 2013). The average global temperature across land and ocean surfaces in 2016 was +0.94°C (1.69°F) above the 20th century average of 13.9°C (57.0°F) (NCEI 2017). The year 2017 was the third warmest year on record and 2018 is also expected to be among the warmest (NCEI 2017). Most of this record in average global temperatures is attributed to record warmth in the global oceans. Since 1955, the global oceans have absorbed over 90% of the excess heat trapped by greenhouse gas emissions (Levitus et al. 2012).

Notably, the largest increases in global ocean temperature have occurred in the upper ocean where primary production is concentrated and appears to be affecting global ocean productivity (Behrenfeld et al. 2006). Global ocean temperatures have increased by 0.31 °C on average in the upper 300 m during the past 60 years (1948-1998) with some ocean basins experiencing even greater warming (Levitus et al. 2000). Significant global declines in net primary production between 1997-2005 were attributed to reduced nutrient enhancement due to ocean surface warming (Behrenfeld et al. 2006).

Ocean warming has already affected the California Current System, the main foraging area for leatherbacks in the Northeast Pacific. The temperature of the upper 100m of the southern California Current System increased by 1.2-1.6°C between the 1950s and 1990s (Roemmich & McGowan 1995), a trend that continued through the late 1990s (Lynn et al. 1997), mid 2000s (Peterson et al. 2006) and mid 2010s (Peterson et al. 2015). This surface warming is weakening the upwelling of nutrient-rich waters off the California coast. Surface warming causes increased stratification of the water column by intensifying the density differences between the warmer surface layer and deeper, cold, nutrient-rich layer (Behrenfeld et al. 2006). Surface warming is also associated with the deepening of the thermocline (i.e. a deepening of warmer waters) in coastal regions of the California Current System in the last 50 years (Palacios 2004). In short, stronger thermal stratification and a deepening of the thermocline inhibit cool, nutrient-rich waters from being upwelled leading to lower productivity and less prey for leatherback turtles.

Warming ocean waters are already having measurable negative effects on marine turtles and their habitat, including leatherback turtles. Water temperature is an important factor determining quality of foraging areas, phenology, and nesting success of leatherback turtles. Even small changes in ambient temperature outside the natural range can substantially disrupt population growth.

**Foraging areas** of leatherbacks within the California Current System are affected by warming. The California Current System runs along the west coast of North America from southern British Columbia to northern Baja California and is already affected by ocean warming and changes in the El Niño Southern Oscillation (ENSO) events (Di Lorenzo et al. 2005; Jacox et al. 2016; Frischknecht et al. 2017). The main foraging habitat of leatherbacks in California waters is part of the California Current System (Block et al. 2011; NMFS & USFWS 2013 p. 7). This highly productive coastal upwelling ecosystem relies on seasonal, wind-driven upwelling of deep, cold, nutrient-rich water to the surface layer that drives phytoplankton and zooplankton production (Huyer 1983). This system is highly sensitive to changes in the strength and timing of seasonal

upwelling that can drive changes in ocean primary productivity and prey availability for leatherback turtles.

Disruption of coastal upwelling in the California Current System due to warming anomalies can affect the distribution and availability of plankton, including key leatherback prey species. Slackening of upwelling-favorable winds coupled with the northward transport of warm water results in weakening of coastal upwelling along the California coast (Bograd et al. 2009), leading to lower plankton productivity and less jellyfish (Roemmich & McGowan 1995; Ruzicka et al. 2012), the primary prey of leatherbacks. Delays in the onset of upwelling can also have severe ecosystem consequences in the pelagic food change within the California Current System (Fisher et al. 2015). For example, a month delay in the onset of spring upwelling during the warm conditions of 2005 resulted in reduced nutrient levels, lower primary production (Thomas & Brickley 2006) and reduced biomass of zooplankton (Mackas et al. 2006) accompanied by low recruitment of rocky intertidal organisms (Barth et al. 2007) and breeding failures of seabirds (Sydeman et al. 2006).

Warming anomalies and reduced upwelling in the California Current System have also resulted in marked ecological effects including decreased productivity and altered ecosystem structure. Between 1951 and 1993, macrozooplankton off the California coast declined by 80% due to surface water warming up to 1.5°C (Roemmich & McGowan 1995). The composition of coastal and pelagic forage species, including euphausiid and larval fish assemblages, has also shifted (Brinton & Townsend 2003). The decreased productivity of the California Current System due to ocean warming has also affected the distribution and productivity of the seabird community (Hyrenbach & Veit 2003) and prey availability for sea lions causing unusual pup mortality (Leising et al. 2015 p. 60). Similarly, availability of leatherback prey is potentially reduced during warming anomalies and reduced upwelling when these turtles are foraging in waters of California and Oregon during spring and summer (Benson et al. 2007b).

**Phenology shifts** in leatherback turtles are already happening due to changes in sea surface temperature (Neeman et al. 2015). Changes of water temperature in foraging grounds delays the timing of the nesting season in some nesting beaches of the Central Atlantic and the eastern Pacific (Neeman et al. 2015). It is likely that leatherback turtles spend substantially more time in foraging grounds when prey distribution and availability is disrupted during warming conditions (Neeman et al. 2015 p. 121). The implications of delaying nesting seasons on hatchling success and survival for leatherbacks nesting in the West Pacific require further study. Yet, if the current trend (~0.3 day/yr) of delayed nesting season in the eastern Pacific (e.g., Playa Grande, Costa Rica) holds in the future, nesting females will experience increasingly adverse conditions for hatching success (Robinson et al. 2014).

**Reproductive success** of leatherback turtles in nesting areas of the Pacific also is affected by global warming. A study of Eastern Pacific nesting leatherback turtles found significantly reduced reproductive output in El Niño years (Reina et al. 2009; Santidrián Tomillo et al. 2012), conditions that are likely to become more common with global warming (Saba et al. 2012). Studies of Atlantic leatherbacks have also documented changing distributions of the species as the climate warms (Patino-Martinez et al. 2011). A study predicting severity of the threat of global warming to leatherback sea turtles found that incubation temperatures would be high

enough to induce uncoordinated movement in adults, leading them to leave some regions (Dudley and Porter 2014).

**Skewing of sex ratios** driven by warming temperatures at nesting beaches are more prevalent given the temperature-dependent nature of egg development (Davenport 1997). The effects of global warming on sea turtle sex ratios has been studied for green, loggerheads, hawksbill, and leatherbacks sea turtles (Hays et al. 2003; Fuller et al. 2013; Hawkes et al. 2013; Santidrián Tomillo et al. 2014; Laloë et al. 2016). In Pacific leatherbacks, high temperatures in nesting beaches at Playa Grande in Costa Rica already are producing 70-90% females and experts predict that 100% of hatchlings will be females (or there will be major hatching failures) with continuing warming (Santidrián Tomillo et al. 2014). Increasing nest temperatures also are taking a toll on West Pacific nesting populations. At Jamursba-Medi in Indonesia, where California/Oregon leatherbacks nest, reduced hatching success has been documented with hatch rates of protected nests of 50-85% until 2003 and only 10-15% in 2004-2006 (Tapilatu & Tiwari 2007). Reduction of hatching success has likely contributed in part to the long term decline in this important nesting leatherback population (Tapilatu et al. 2013).

In sum, warmer foraging waters and nesting beach temperatures already are adversely affecting leatherback sea turtles both in U.S. waters off California and throughout the Pacific. These impacts are severe and currently ocean warming represents an unmanaged threat to the continued viability of the species. Unfortunately, ocean warming is not the only climate change-related threat to leatherbacks. Sea level rise will inundate nesting beaches while ocean acidification affects the pelagic food web upon which leatherbacks are dependent.

# 6.5.1.2. Sea Level Rise Affects Nesting Success of Pacific Leatherback Sea Turtles

The last and fifth assessment report (AR5) of the Intergovernmental Panel on Climate Change (IPCC) predicts that global mean sea level is "likely" to rise between 0.52 to 0.98 m on average by 2100 under the highest emission scenario (Church et al. 2013; IPCC 2013). Current and less conservative climate models predict that sea levels have actually increased at a much higher rate in the 20<sup>th</sup> century (e.g., 1.2 mm/year in 1901-1990 and 3.0 mm/year in 1993-2010) (Hay et al. 2015). Experts estimate that the magnitude of future sea-level rise, given the higher contribution of the loss of Greenland and Antarctic ice sheets (Rignot et al. 2014). In fact, Antarctica alone can potentially contribute to more than one meter of sea-level rise by the end of the century if emissions continue at the current levels (DeConto & Pollard 2016). Multiple positive feedback mechanisms including reduced surface albedo, loss of buttressing ice shelves, increasing and lowered ice surface altitude will accelerate the rate and magnitude of sea level rise (Hansen et al. 2006).

Sea-level rise will inundate low-lying beaches where sand depth is a limiting factor for leatherbacks. Leatherback turtles are particularly vulnerable to sea level rise due to their tendency to nest in the cooler tide zone of beaches (Patino-Martinez et al. 2014). Flooded nesting sites will decrease available nesting habitat (Fuentes et al. 2009; Von Holle et al. 2019). In addition to inundating nesting sites, climate will also affect nesting success of leatherbacks due to the increase in the severity of storms and changes in the prevailing currents that could lead to

increased beach erosion and loss of suitable nesting habitat (Fuentes & Abbs 2010). Moreover, sea level rise is likely to promote more shoreline stabilization activities that will further increase the loss of potential nesting habitat (NMFS & USFWS 2013 p. 46). The capacity of female leatherbacks to occupy new nesting habitat will determine whether this species adapts to rapid sea level rise. Thus, sea level rise must be viewed as a significant long-term threat to the survival of the species.

#### 6.5.1.3. Ocean Acidification

The California Current system is already affected by ocean acidification (Hauri et al. 2009, 2013; Gruber et al. 2012; Feely et al. 2017), potentially disrupting the food web on which leatherbacks rely for foraging (Ruzicka et al. 2012 p. 29). Ocean acidification can be an indirect threat to leatherbacks in foraging areas because their primary prey (jellyfish) belongs to a complex food web (Ruzicka et al. 2012 p. 29) where several taxa are highly vulnerable to acidic conditions. Phytoplankton, pteropods, shelled zooplankton, euphausiids, and larvae of invertebrates and fish are all potential prey for small and large jellyfish (Ruzicka et al. 2012 p. 29). Some of these groups (e.g., pteropods) are known to be highly susceptible to ocean acidification within the California Current system (Bednaršek & Ohman 2015; Hodgson et al. 2018). A decline in jellyfish production can affect food availability for leatherbacks along the U.S. West Coast during summer and autumn, when dense aggregations of jellyfish historically have been present (Graham et al. 2010; Benson et al. 2007b).

Ocean acidification is directly related to the increase in atmospheric CO<sub>2</sub> emissions globally. Atmospheric CO<sub>2</sub> concentrations reached average annual levels of over 406.5 parts per million (ppm) globally in 2017 (NASA Global Climate Change 2018), which is higher than at any point during the last 800,000 years (Lüthi et al. 2008). Over the past 200 years, the global oceans have absorbed approximately 25% of the anthropogenic CO<sub>2</sub> released to the atmosphere (Canadell et al. 2007; IPCC 2014). Anthropogenic CO<sub>2</sub> emissions from burning fossil fuels, cement production, and land use increased globally at a rate of 10.3 giga tones of CO<sub>2</sub> equivalent per year (GtC yr<sup>-1</sup>) from 2006 to 2015 (Le Quéré et al. 2016), reaching over 40 GtCO<sub>2</sub> in 2015 (Rogelj et al. 2016). Approximately 2.6 GtC yr<sup>-1</sup> (i.e., 26% of total emissions) entered the global oceans in the last decade (Le Quéré et al. 2016).

As the global oceans uptake the excess of CO<sub>2</sub>, seawater chemistry profoundly changes and the oceans become more acidic (Orr et al. 2005; Fabry et al. 2008; Fabry 2009; Doney et al. 2009; Gattuso & Hansson 2011; Carter et al. 2016, 2017). The average pH of the global surface ocean has already decreased by 0.1 units (from 8.2 to 8.1 pH units) which represent a 30 % increase acidity and a 10% decrease in carbonate ion concentration in comparison with pre-industrial levels (Feely et al. 2004; Caldeira & Wickett 2005; Orr et al. 2005; Cao & Caldeira 2008; Doney et al. 2009; Byrne et al. 2010). Once anthropogenic CO<sub>2</sub> enters the oceans it is impossible to remove it and the global oceans may require thousands of years to naturally return to a higher pH state (Solomon et al. 2009).

Changes in ocean chemistry due to increasing absorption of carbon dioxide concentration emitted by human activities is unprecedented in the geological record (Honisch et al. 2012). The oceans are becoming acidic at a rate faster than they have in the past ~300 million years, a period that includes three major mass extinctions (Zeebe 2012; Hönisch et al. 2012). The current change

in seawater chemistry is an order of magnitude faster than what occurred 55 million years ago during Paleocene-Eocene Thermal Maximum, which is considered to be the closest analogue to the present, when 96% of marine species went extinct (Zeebe 2012; Hönisch et al. 2012). Long term monitoring and modeling studies of waters across the Pacific West Coast of the United States show a clear pH decline over the past decades (Beman et al. 2011; Friedrich et al. 2012; Chan et al. 2016, 2017; Feely et al. 2016, 2017). In fact, anthropogenic ocean acidification already exceeds the natural variability on regional scales and is detectable in several Pacific regions (Friedrich et al. 2012; McLaughlin et al. 2015; Takeshita et al. 2015).

In sum, climate change is expected to alter the abundance and distribution of leatherback sea turtle prey via changes to ocean acidity.

# 7. THE DEGREE AND IMMEDIACY OF THREAT

# Indicate the immediacy of the threat and the magnitude of loss or rate of decline that has occurred to the present or is expected to occur without protective measures.

Pacific leatherback sea turtles are in such dire straits that the National Marine Fisheries Service named them one of eight "Species in the Spotlight" that are most at-risk of extinction. With only around 550 annually nesting adult, female West Pacific leatherbacks left, every individual in waters off California is significant.

Without additional California protective measures, federal government efforts to introduce longlines to the West Coast exclusive economic zone (EEZ) are likely to continue. As discussed above, NMFS has issued a Longline Exempted Fishing Permit to target swordfish and other highly migratory species (HMS) in the West Coast EEZ. 84 Fed. Reg. 20,108. This controversial permit allowed deep-set and shallow-set longline fishing inside the West Coast EEZ, even though state law banned this type of fishing method. *See* Cal. Fish & Game Code § 9028. NMFS anticipated that the exempted fishing proposed would capture two leatherback sea turtles; the risk of an interaction is relatively high because fishing will occur during a time and in the area encompassed by the Pacific Leatherback Conservation Area (NMFS 2018b). Despite the predicted interactions, the federal government has denied the California Coastal Commission's request to review of the EFP application under the Coastal Zone Management Act. (Kuipers 2019).

# 8. INADEQUACY OF EXISTING REGULATORY MECHANISMS

Despite protections both domestically and internationally, Pacific leatherback sea turtle populations continue to decline. The suite of federal environmental conservation actions includes the Endangered Species Act's identification of critical habitat and prohibition on take, national marine sanctuaries, and fishing restrictions in the Pacific Leatherback Conservation Area. Nonetheless, these protections have not sufficiently mitigated the cumulative impact of anthropogenic activities on leatherback sea turtles (Maxwell et al. 2013). In particular, anthropogenic activity around the central coast of California has high cumulative impacts on leatherback sea turtles are more vulnerable to ocean pollution, shipping, and fishing than other protected species off the coast of California (*id.*). Protections remain inadequate.

**Fisheries** remains the primary threat to leatherback sea turtles despite a suite of national and international laws designed to protect them, as discussed in detail above. Obstacles to overcome include monitoring and aggregating bycatch data over the large geographic area that West Pacific leatherbacks migrate. That in turn contributes to the problem that fisheries managers lack data to justify discouraging fishing to the degree needed to save Pacific leatherback sea turtles.

**Plastic pollution** remains largely unmitigated. The amount of plastic debris entering the ocean is expected to increase by an order of magnitude by 2025 (Iverson 2019). A large coastal population and a high waste production per capita means that the United States, and likely California specifically, impacts total marine debris in the global ocean (*id*.). Regulations to address this issue on the scale at which it is growing do not yet exist (*id*.).

Fishing nets make up almost half of the plastic pollution by size in the Great Pacific Garbage Patch alone (Lebreton et al. 2018). In the United States, the largest sources of derelict fishing gear are gillnets and crab pots (Iverson 2019). While efforts in Washington and California are underway to retrieve derelict pots at the end of the season, these efforts are limited compared to the scale of the problem, do not include measures to prevent gear loss, and do not mitigate the impact of gear loss by requiring use of biodegradable materials.

**Climate change** remains an existential threat to leatherback sea turtles, as well as other marine animals, due to the inadequacy of regulatory mechanisms in controlling emissions of carbon dioxide. As stated above, unless carbon dioxide emissions are significantly reduced in the near-term future, global warming and the related threat of ocean acidification are likely to pose a serious threat to the critically endangered leatherback sea turtle.

# 9. RECOMMENDED FUTURE MANAGEMENT AND RECOVERY ACTIONS

Management actions in California can address threats to the leatherback sea turtle such as plastic pollution, fisheries, aquaculture, and climate change. All these threats, as discussed above, can and should be mitigated at the State level.

Recommendations for the management and recovery of the Pacific leatherback sea turtle include, at a minimum:

- California Department of Fish and Wildlife protects leatherback sea turtles as an endangered species under the California Endangered Species Act;
- California Department of Fish and Wildlife prepares a recovery plan for Pacific leatherback sea turtles pursuant to Cal. Fish & Game Code § 2079.1, including management efforts aimed at reducing toxins in the habitat and impacts from ocean warming and acidification.
- California Department of Fish and Wildlife improves monitoring of leatherback sea turtle abundance and population trends;

- California Department of Fish and Wildlife increases coordination and management with other governments such as the National Park Service, National Marine Sanctuaries, Department of Defense, and others to research movements of leatherback sea turtles off the U.S. West Coast;
- California Department of Fish and Wildlife and the California Fish and Game Commission manage California fisheries to reduce interactions (gear modifications, limited soak time for fixed gears, time and area closures, etc.);
- California Department of Fish and Wildlife encourages the Pacific Fisheries Management Council (PFMC) to address continued bycatch of endangered sea turtles and adopt practices to avoid sea turtle entanglements, including phasing out current gear associated with entanglements, particularly in federal gillnet, longline, and pot fisheries;
- California Department of Fish and Wildlife, working with the California Fish and Game Commission, sets a hard limit on the incidental capture of leatherback sea turtles in California-managed fisheries that historically have interacted with leatherback sea turtles or by analogy to fishing gear that has interacted with leatherback sea turtles, and require 100% observer coverage or electronic monitoring to accurately enforce the limit;
- California Department of Fish and Wildlife utilizes existing legal and regulatory frameworks to minimize local contributors to ocean acidification (*e.g.*, eutrophication); and
- The governor declares a climate emergency and takes all necessary action to set California on a path to full decarbonization of our economy by no later than 2045 (for example, banning the sale of new fossil fuel vehicles by 2030 and requiring the generation of all electricity from carbon-free sources by 2030).

We look forward to discussing additional state actions that can protect leatherback sea turtles.

# 10. CONCLUSION

The Pacific leatherback sea turtle is an iconic California treasure. The State Legislature recognized as much by designating it as the official marine reptile. Cal. Govt. Code § 422.5. The 2012 Pacific Leatherback Sea Turtle Act describes the leatherback sea turtle as "a central component of California's natural heritage and marine biodiversity."<sup>2</sup> The California Legislature, Governor, and citizens honor and celebrate California's leatherbacks during Pacific leatherback sea turtle day every October 15. Cal. Govt. Code § 7593.5. It is imperative that California afford every protection to save the leatherback from extinction.

As detailed above, in conformance with the requirements of Cal. Code Regs., tit. 14, § 670.1, this petition presents scientific information regarding the Pacific leatherback's life history,

<sup>&</sup>lt;sup>2</sup> AB 1776, § 1(b), available at

https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\_id=201120120AB1776.

population trend, range, distribution, abundance, kind of habitat necessary for survival, factors affecting the ability to survive and reproduce, degree and immediacy of threat, impact of existing management efforts, suggestions for future management, availability of sources and information, and detailed distribution maps.<sup>3</sup> That information clearly demonstrates that the Pacific leatherback sea turtle is eligible for and warrants listing under CESA based on the factors specified in the statute and implementing regulations.

The California Endangered Species Act would bestow additional protections and safeguards to leatherback sea turtles. In addition to these protections, the designation would increase the visibility of the leatherback sea turtle's plight state-wide and nationally.

<sup>&</sup>lt;sup>3</sup> Information on suggestions for future management and availability of sources and information are contained in the Management Recommendations and References sections *infra*.

#### 11. LITERATURE CITED

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# State of California Department of Fish and Wildlife Memorandum

Received February 7, 2020. Original signed copy on file.

Date: February 7, 2020

- To: Melissa Miller-Henson Executive Director Fish and Game Commission
- From: Charlton H. Bonham Director

# Subject: Request for 30-day extension, Pacific Leatherback Sea Turtle Petition (*Dermochelys coriacea*)

The Department of Fish and Wildlife (Department) requests a 30-day extension of time pursuant to Fish and Game Code section 2073.5 to allow the Department additional time to analyze and evaluate the petition to list the Pacific leatherback sea turtle (*Dermochelys coriacea*) as an endangered species under the California Endangered Species Act (CESA). The extension would change the due date for the Department's evaluation from 90 days due on May 4, 2020 to 120 days on June 3, 2020.

If you have any questions or need additional information, please contact Dr. Craig Shuman, Marine Regional Manager, at (916) 373-5491.

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# Memorandum

Date: February 7, 2020

- To: Melissa Miller-Henson Executive Director Fish and Game Commission
- From: Charlton H. Bonham Director

#### Subject: Five-Year Status Review of Riparian Brush Rabbit

The California Department of Fish and Wildlife (Department) prepared the attached Five-Year Status Review of the Riparian Brush Rabbit for the Fish and Game Commission (Commission) pursuant to the California Endangered Species Act (CESA). Pursuant to Fish and Game Code section 2077, subdivision (a), the Department prepared this Five-Year Status Review to evaluate whether conditions that led to the original listing of the Riparian Brush Rabbit are still present.

In completing this Five-Year Status Review, the Department finds there is enough scientific information to indicate that many of the conditions that led to the listing of Riparian Brush Rabbit as endangered in 1994 have not changed. The scientific information available to the Department indicates the Riparian Brush Rabbit remains in danger of extinction in all or a significant portion of its range due to one or more causes. Therefore, the Department recommends that no change be made to the Riparian Brush Rabbit's endangered status.

If you have questions or need additional information, please contact Kari Lewis, Branch Chief, Wildlife Branch at (916) 373-6613, or by e-mail at <u>Kari Lewis@wildlife.ca.gov</u>.

#### Enclosure

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#### State of California Natural Resources Agency Department of Fish and Wildlife

#### REPORT TO THE FISH AND GAME COMMISSION

#### FIVE-YEAR STATUS REVIEW OF RIPARIAN BRUSH RABBIT (Sylvilagus bachmani riparius)

February 21, 2020



Riparian Brush Rabbit, Lee Eastman/USFWS

Charlton H. Bonham, Director Department of Fish and Wildlife



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# I. EXECUTIVE SUMMARY

The riparian brush rabbit (*Sylvilagus bachmani riparius*) is currently listed as endangered in California. Pursuant to Fish and Game Code § 2077, subdivision (a), the California Department of Fish and Wildlife (Department) has prepared this Five-Year Status Review to evaluate whether conditions that led to the original listing of riparian brush rabbit are still present. This review is based on the best scientific information currently available to the Department regarding each of the components listed under § 2072.3 of the Fish and Game Code, and section 670.1, subdivisions (d) and (i)(1)(A), of Title 14 of the California Code of Regulations. In addition, this document contains a review of the identification of habitat that may be essential to the continued existence of the species, and the Department's recommendations for management activities and other recommendations for recovery of the species (Fish & G. Code, § 2077, subd. (a)).

After reviewing the best available scientific information, the Department determined the following:

The riparian brush rabbit (*Sylvilagus bachmani riparius*), a subspecies of brush rabbit (*S. bachmani*), was listed as endangered under the California Endangered Species Act in 1994 and listed as endangered under the federal Endangered Species Act in 2000. Riparian brush rabbits are relatively small, brownish, and lack the conspicuous white tail of similar cottontail rabbits. Riparian brush rabbits live in dense riparian (streamside/riverside) vegetation in the San Joaquin Valley and Delta and forage on herbaceous vegetation including grasses, sedges, clover, forbs, shoots, and leaves. They seldom venture more than a few meters from brushy cover and occupy small home ranges (<2 ha [<5 ac.]). They breed seasonally, have low reproduction rates relative to other rabbit species, and most individuals do not live longer than one year in the wild. Predation is the cause of most mortality under normal conditions and they are preyed upon by a wide variety of native and non-native predators. Riparian brush rabbits compete with desert cottontails (*Sylvilagus audubonii*) in much of their range and are subject to a wide variety of potentially deadly diseases.

Little is known about the historical distribution of riparian brush rabbits, although they likely occupied most of the riparian habitat along San Joaquin Valley rivers and streams. Today they are limited to areas of the southern San Joaquin River Delta, remnant and restored riparian zones along the lower San Joaquin River north of the Tuolumne River, and riparian forests of the lower Stanislaus River. The subspecies population has fluctuated widely in recent times due to severe population crashes during periodic flood events, and the actual population size is unknown. An ambitious habitat restoration and repatriation effort in the early 2000s has resulted in a significant increase in occupancy within the historical range and increase in the population.

The major threats to the persistence of riparian brush rabbits include the dramatic historic and ongoing loss of San Joaquin Valley riparian habitat; fragmentation of remaining habitat patches which limits the ability of rabbits to disperse and exchange genetic material; catastrophic periodic flood events coupled with the limited availability of high elevation habitat for rabbits to

retreat to during floods; habitat loss and mortality from wildfires; predation from native and nonnative predators; environmental and genetic threats inherent to small, isolated populations; climate impacts; and rodenticide exposure.

Recent management efforts have substantially expanded the occupied area within the historical range and improved the viability of southern riparian brush rabbit populations. From 2002 -2013, an intensive captive propagation and translocation effort resulted in the release of 1,496 riparian brush rabbits onto the San Joaquin River National Wildlife Refuge (Refuge). During the same period, the Refuge was dramatically expanding in size and restoring vast areas of farmland to riparian brush rabbit habitat. Despite these important recovery actions, most of the extant riparian brush rabbit populations remain threatened by catastrophic flood events. Future management of the riparian brush rabbit must address the range-wide risk of flooding by securing flood-safe riparian habitat adjacent to existing local populations. Other future management needs include the development of a riparian brush rabbit recovery plan, basic biological research on the diet and ecology of the subspecies, and the development of efficient monitoring techniques.

The Department recommends no change to the riparian brush rabbit's endangered status.

# **II. INTRODUCTION**

#### A. Five-Year Status Review

This Five-Year Status Review addresses the riparian brush rabbit (*Sylvilagus bachmani riparius*) (Orr 1935), which is designated as an endangered species under the California Endangered Species Act (CESA) (Fish and G. Code § 2050 et seq.; Cal. Code Regs. tit. 14 § 670.5, subd. (a)(6)(A)). Upon a specific appropriation of funds by the Legislature, the California Department of Fish and Wildlife (Department) shall, or if other funding is available, in the absence of a specific appropriation, may, review species listed as endangered or threatened under CESA every five years to determine if the conditions that led to the original listing are still present (Fish and G. Code § 2077, subd. (a)). The riparian brush rabbit is also listed as endangered under the federal Endangered Species Act. Pursuant to Fish and Game Code § 2077, subdivision (b), the United States Department of the Interior, U.S. Fish and Wildlife Service (USFWS) was contacted in an effort to coordinate this status review with their five-year review process. The USFWS is currently preparing a Species Status Assessment which will be used as part of a federal five-year status review in the near future (Stephanie Prevost pers. comm. 6/13/2019).

Using the best scientific information available to the Department, this Five-Year Status Review includes information on the following components pursuant to § 2072.3 and § 2077(a) of the Fish and Game Code and § 670.1(d) of Title 14 of the California Code of Regulations: species' population trend(s), range, distribution (including a detailed distribution map), abundance, life history, factors affecting the species' ability to survive and reproduce, the degree and immediacy of threats, the impact of existing management efforts, the availability and sources of information, identified habitat essential for the continued existence of the species, and the

Department's recommendations for future management activities and other recovery measures to conserve, protect, and enhance the species.

# B. Listing and Status Review History

Riparian brush rabbits were listed as endangered under CESA in 1994. At the time of the initial listing the main identified threats to the species included: extensive loss of historically occupied habitat to agricultural development; small population sizes threatened by floods, fires, and other environmental events; deleterious genetic trends associated with small populations; and competition with desert cottontails (*S. audubonii*). The Department has not previously conducted a 5-year Review of this subspecies.

A 1998 federal Recovery Plan for the Upland Species of the San Joaquin Valley discussed the riparian brush rabbit. However, the subspecies was not listed under the federal Endangered Species Act at that time and therefore, while the plan included directed actions to improve riparian brush rabbit populations, recovery criteria were not included (USFWS 1998). On February 23, 2000 the subspecies was listed as endangered under the federal Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq.).

This Five-Year Status Review was prepared by Daniel Applebee in the Department's Wildlife Branch Nongame Program with input from Jennifer Rippert (Bay Delta Region), Henry Lomeli (North Central Region), Reagan O'Leary (Central Region), Stephanie Prevost (USFWS Sacramento Field Office), and mapping support from Kristi Cripe (Wildlife Branch).

# III. BIOLOGY

# A. Taxonomic and Physical Description

i. Physical Description

Riparian brush rabbits are small, brownish, cottontail-like rabbits with white bellies, relatively short ears, and small inconspicuous tails. Adults are about 300-375 mm (11.8-14.8 in.) long. The hind legs are short and hind feet are slender and not covered with long or dense hair. The pelage (fur) is pale gray on the sides, darker on the back. The ears lack dark areas at the tips which are typical of the more ubiquitous desert cottontail (also known as Audubon's cottontail), (Orr 1935, 1940; Ingles 1965; Chapman 1974). The riparian brush rabbit can be distinguished from other subspecies by its relatively pale color, gray sides, and darker back (Orr 1935), its restricted range and habitat requirements, and skull characteristics (Orr 1935, 1940).

The similar desert cottontail occurs within the range of the riparian brush rabbit and can be found inhabiting the same patches of riparian habitat. Desert cottontails are found in a wider variety of habitat types, are slightly larger, have larger eyes and ears, are more yellowish in coloration, and have dark-tipped ears and a very conspicuous tail (Ingles 1965).

#### ii. <u>Taxonomy</u>

The riparian brush rabbit is recognized as a distinct subspecies of the brush rabbit. There are 13 recognized subspecies of brush rabbit, eight of which occur in California (Hall 1981). Brush rabbits are found along the Pacific Coast of North America from the Columbia River to the tip of Baja California and from the western slope of the Cascade-Sierra Nevada Range west to the Pacific Ocean (Orr 1935, 1940; Chapman 1974; Hall 1981). Orr (1935) described the riparian brush rabbit with the type locality designated as the west side of the San Joaquin River, two miles northeast of Vernalis, Stanislaus County, California.

# B. Life History and Ecology

The information below is largely reproduced from the Department's 1993 Status Review (CDFG 1993) which summarized what is known about riparian brush rabbits from technical information provided in Orr (1935, 1940), Chapman (1974), Chapman et al. (1982), Williams (1986, 1988, 1993), Williams and Basey (1986) and Basey (1990). Where new information is presented it is referenced.

# i. Food Habits and Foraging Behavior

Riparian brush rabbits forage on a wide variety of herbaceous vegetation, including grasses, sedges, clover, forbs, shoots, and leaves. The vegetation is generally clipped off using the teeth while the animal moves slowly along the ground. Occasionally, an animal will rise up on its hind legs to reach a slightly elevated item, but edible items are not manipulated by the forepaws. Vegetation is eaten in available areas within or very close to brushy cover, usually along trails, fire breaks, or at the edge of brushy areas. They seldom venture more than several meters from brushy cover, and do not forage in large open areas. Foraging activity occurs during the early morning and early evening hours. Basey (1990) observed brush rabbits feeding on a variety of vegetation including wild rose (*Rosa* spp.), blackberry (*Rubus* spp.), blue elderberry (*Sambucus nigra* ssp. *caerulea*), California wild grape (*Vitis californica*), dried oak leaves (*Quercus* spp.), and grasses, including bermudagrass (*Cynodon* spp.). Grasses appeared to be the most important food source when available, followed by the growing tips of wild rose and blackberry shoots. Brush rabbits are known to practice coprophagy (re-ingestion of feces), presumably to extract additional nutrition from incompletely digested food (Chapman and Litvaitis 2003).

# ii. Home Range and Population Densities

Home ranges of male and female riparian brush rabbits become larger during the breeding season (Kelt et al. 2014). At Caswell Memorial State Park (hereafter referred to as "Caswell Park"), Basey (1990) found the mean male home range (0.096 ha [ 0.24 ac.]) to be larger than the mean female home range (0.02 ha [0.06 ac.]). Male home ranges overlapped several female home ranges, but the activity centers of female home ranges did not overlap. Densities ranged from 2-14 rabbits per ha, (2.47 ac.), depending on habitat quality.

Hamilton's (2010) study of translocated riparian brush rabbits on the San Joaquin River National Wildlife Refuge (hereafter referred to as the "Refuge") documented considerably larger home

ranges, averaging 1.79 ha (4.4 ac.), with male home ranges only slightly larger than female home ranges. Riparian brush rabbit home ranges were slightly larger during the breeding season than in the non-breeding season - 1.97 ha (4.87 ac.) versus 1.60 ha (3.95 ac.). Hamilton (2010) observed a reduction in average home range sizes over the three year course of her study and postulated that rabbits may have spent the first season following translocation in search of suitable habitat or potential mates; but as the local population on the Refuge increased through additional releases and local births, suitable habitat might have become limited, resulting in smaller home ranges.

#### iii. Reproduction and Survival

Riparian brush rabbits breed seasonally, unlike the desert cottontail which can breed all year (Mossman 1955; USFWS 2000). Williams (1988) and Basey (1990) found that wild riparian brush rabbits breed from February to May or June. In breeding enclosures, riparian brush rabbits were polygynous, with one male dominating the mating of most females, but not to the exclusion of all other males. In captivity, female promiscuity was observed, with some litters fathered by more than one male (Williams et al. 2005; Williams et al. 2008).

Hamilton (2010) estimated the proportion of breeding females in the wild local population on the San Joaquin National Wildlife Refuge was approximately 46%. Williams et al. (2008) found some females in captive propagation facilities produced up to four litters per season; however, most females had only one or two litters. Breeding females produced an average of 5.3 young each season, while only 2.8-2.9 young per pregnancy survived more than a few weeks after birth (Williams et al. 2005; Williams et al. 2008).

Shallow ground nests are typically located under large clumps of dense blackberry vines. Constructed and found burrows may be also be used (Orr 1940; Williams et al. 2008). The gestation period is 27-30 days. Young open their eyes ten days after birth and leave the nest at about two weeks, although the female may continue to suckle her young two to three weeks after their birth (Orr 1940, 1942). Young riparian brush rabbits reach adult size in approximately four to five months and in captivity reach sexual maturity at approximately four months (USFWS 2000; Wittmer et al. 2016). Kelly and Holt (2011) monitored one captive-bred translocated riparian brush rabbit on the Refuge for over three years, but most reproductive rabbits do not survive to the next breeding season due to predation, disease, and other causes (Williams et al. 2008).

# iv. Activity Patterns and Dispersal

Riparian brush rabbits are crepuscular, typically active in the evening between sunset and 0200 hrs., and in the morning from 0600-1030 hrs. Between active periods, they groom and rest in small depressions or elevated on downed logs and may sun themselves during sunny afternoons. These resting locations are connected by a maze of well-used runways. When being chased, riparian brush rabbits are difficult to flush into the open and instead stick to dense cover or climb up into vegetation. They will also climb into small trees or snags when necessary to escape flooding.
Dispersal patterns are generally unknown. It is assumed that animals may travel a very short distance when necessary to find a suitable unoccupied home range within riparian habitat during the breeding season. They are closely restricted to dense brushy cover and are probably unable or unwilling to disperse through large open areas. Studies of the closely related subspecies, *S. bachmani ubericolor* found rabbits that were displaced > 350 m (1,148 ft.) from their home range had difficulty returning to their original territory. Due to this rather short homing ability, animals displaced by floods may not be able to return to their original location.

#### v. Predators, Competitors, and Disease

Riparian brush rabbits are preyed upon by various native raptorial and carnivorous species that normally occur within riparian habitat, such as hawks, owls, coyotes (*Canis latrans*), foxes, long-tailed weasels (*Mustela frenata*), and snakes. They are also susceptible to predation by feral dogs (*Canis familiaris*) and cats (*Felis catus*) (Williams 1988). Predation was the greatest cause of deaths in translocated rabbits on the Refuge (Williams et al. 2008).

The riparian brush rabbit's main competitor for food resources is the desert cottontail. Riparian brush rabbits are subject to diseases and parasites that typically affect North American rabbit species, many of which are contagious and fatal. Amongst captive and translocated rabbits, when disease was determined to be the likely cause of death, *Baylisascaris* spp. (a parasitic roundworm) was most often implicated. Other diseases implicated in deaths were necrotizing typhlitis, and intestinal lymphoma (Williams et al. 2008).

# C. Habitat Necessary for Species Survival

Riparian brush rabbits are restricted to the native San Joaquin Valley riparian habitat originally found on the valley floor in the floodplain of the San Joaquin River and tributaries. Historically, periodic flooding occurred during natural variations in precipitation and snowmelt (Das 2013). These floodplain areas were uneven, with enough topography that upland areas with appropriate vegetative cover were available for retreat during flooding (Katibah 1984). Riparian brush rabbits are strictly confined to patches of habitat with dense brushy and herbaceous groundcover totaling  $\geq$  460 m<sup>2</sup> (5,000 ft<sup>2</sup>). They seldom venture > 1-2 m (3.3-6.6 ft.) from brushy cover. Open areas and areas where willows predominate but ground cover and litter are regularly removed by scouring flood flows and prolonged inundation, are not typically used by riparian brush rabbits.

Riparian brush rabbits inhabit two types of riparian vegetative communities; old-growth riparian forest (primarily dominated by valley oak, *Quercus lobata*) with dense shrub and vine understories, and riparian communities dominated by thickets of willows (*Salix* spp.), wild roses, blackberries, California grape, and other successional trees and woody plants (Kelly et al. 2011). Kelt et al. (2014) found a disproportionate preferential use of the latter type. Herbaceous forbs at the edge of shrub cover appear to be an important habitat feature, providing both cover and forage. Important forb species include mugwort (*Artemisia douglasiana*), stinging nettle (*Urtica dioica*), and gumplant (*Grindelia camporum*). While riparian brush rabbits do not venture far from dense cover to forage, open fields in close proximity to cover are used (Kelly et al. 2011). Vegetative structure is also important; the presence of trees

and shrubs that grow to heights above periodic floods is critical during temporary high-water conditions. Tall trees and shrubs are also important, providing structural scaffolding for blackberry and rose to climb (Kelly et al. 2011).

# **IV. DISTRIBUTION AND ABUNDANCE**

## A. Range and Distribution

## i. Historic Range and Distribution

The historical distribution of riparian brush rabbits is largely unknown. Orr (1940), based on only five records, believed riparian brush rabbits occupied the native riparian forests within the natural floodplain along the northern portion of the San Joaquin River and its tributaries from Stanislaus County to the Delta. Williams and Basey (1986) speculated that riparian brush rabbits were historically distributed within riparian forests where there was likely ample brushy understory and suitable upland areas for cover and retreat from annual floods within the San Joaquin Valley floor. In the mid-1980's the area of potentially occupied riparian habitat along the San Joaquin River and its tributaries north of the confluence of the San Joaquin and Merced Rivers was estimated to have totaled approximately 39,800 ha (98,300 ac.) (Katibah 1984).

At the time the riparian brush rabbit was listed by the State of California, Caswell Memorial State Park contained the only known population of the subspecies. Caswell Park is located on the northern bank of the Stanislaus River in southern San Joaquin County and contains one of the largest remaining fragments of mature riparian forest habitat within the San Joaquin Valley, totaling 104 ha (258 ac.). In 1998, a few riparian brush rabbits were discovered persisting in scattered local populations in the southern portion of the Sacramento-San Joaquin River Delta (South Delta) (Williams et al. 2008). Since that time, riparian brush rabbits have been discovered in approximately nine other small South Delta remnant riparian patches (Williams and Hamilton 2002; Lloyd and Williams 2003; Hamilton 2010).

Recognizing the known population areas were small and isolated from other suitable habitat, USFWS initiated a controlled propagation program in 1999 in partnership with the Endangered Species Recovery Program of California State University Stanislaus and other partners (Williams et al. 2002). In 2001, captive-breeding began. The program trapped riparian brush rabbits in the South Delta and temporarily placed them in three large outdoor pens where offspring could be easily collected for translocation. Healthy young rabbits were released into suitable habitat on the Refuge adjacent to Caswell Park beginning in July 2002. By the time the captive propagation program concluded in December 2013, 1,496 rabbits had been released on the Refuge which now contains the largest extant local population of riparian brush rabbits as well as the largest area of suitable habitat (Kelly 2018).

#### ii. Current Range and Distribution

Currently, riparian brush rabbits are distributed in two broad regions (Figure 1). The largest is the population consisting of the offspring of translocated rabbits on the Refuge and the native

rabbits of the adjacent Caswell Park. This local population spans 15 km (9.3 mi.) in the riparian communities along the San Joaquin River from approximately 2.7 km (1.7 mi.) south of the confluence of the Tuolumne and San Joaquin Rivers to approximately 4 km (2.5 mi.) north of the confluence with the Stanislaus River, and spans approximately 7 km (4.2 mi.) east along the Stanislaus River. Suitable habitat in this area totals approximately 1,416 ha (3,500 ac.) of native and restored riparian habitat which is relatively contiguous (Eric Hopson pers. comm. 8/27/2019).

The other broad region consists of disjunct local populations scattered throughout the South Delta from approximately 2.7 km (1.7 mi.) south of the Interstate 5 Mossdale Bridge over the San Joaquin River northwest approximately 11 km (6.8 mi.) along Paradise Cut and north approximately 9 km (5.6 mi.) along the San Joaquin River. Genetic testing recently confirmed two rabbit carcasses discovered in 2017 along Middle River were riparian brush rabbits (Stephanie Prevost pers. comm. 10/22/2019). If a viable population is confirmed at this location it would expand the known occupied range several kilometers further north along the Middle River. As currently understood, the entire South Delta population area likely totals no more than a few hundred hectares (Williams et al. 2008).

## B. Population Trend and Abundance

#### i. Historic Abundance

Wide-spread alteration of the native riparian forests in the San Joaquin Valley began in the mid-1800s, prior to any mammalogical surveys, and before a full description of brush rabbit subspecies was completed. The Department estimated the historic abundance of riparian brush rabbits by extrapolating William's (1993) local population density estimate from Caswell Park (3 rabbits/ha [3 rabbits/2.47 ac.]) to the estimated 36,700 ha (90,688 ac.) of riparian forest thought to exist along the San Joaquin River and its tributaries from its confluence with Merced River to just outside Stockton in pre-settlement times (Katibah 1984). Based on this information, it was estimated that as many as 10,000 individuals may have existed historically. Prior to the subspecies listing under CESA, local riparian brush rabbit populations were known to have crashed repeatedly during flood events. For example, floods in the spring of 1986 covered most of Caswell Park. The following summer, the only areas with evidence of regular riparian brush rabbit use totaled approximately 3.6 ha (8.9 ac.) (Williams 1988). At that time, the population was estimated to be 6-31 rabbits (Williams 1988).



Figure 1. Distribution of riparian brush rabbit records.

#### ii. Current Populations

There are no contemporary estimates of the riparian brush rabbit population. In 1993, the last time the Caswell Park population was estimated, 43 individuals were captured resulting in a population estimate of 241 rabbits (Constable et al. 2011). Since that time, the number of animals trapped per effort in the Park has declined significantly, with the most recent efforts resulting in six trapped rabbits in 2005 and nine in 2006 (Constable et al. 2011). Elsholz (2010), anecdotally observed that riparian brush rabbits were common in his Caswell Park study areas from 2004-2005 but following a flood in 2006 rabbit sightings were "extremely rare". In 2007 only four rabbits were observed on his 125 study sites. Caswell Park staff observed only one rabbit between 2008 and 2010 (Elsholz 2010). Annual rabbit surveys at Caswell have not been conducted since February 2008.

There has never been an attempt to census or estimate the size of the South Delta local populations. Approximately 238 riparian brush rabbits were trapped in the South Delta 1999-2010 as breeding stock for the captive propagation effort (Constable et al. 2011). Williams et al. (2008) believed populations in the South Delta totaled "at most a few hundred rabbits". These small local populations have proven persistent. Williams et al. (2008) speculated that frequent disturbances from farming and flood control actions have maintained early successional riparian plant-communities in the South Delta which sustain riparian brush rabbits.

From 2002-2013 nearly 1,500 captive-bred riparian brush rabbits were released on the West Unit of the Refuge (Kelly 2018). Census trapping in 2005 captured a higher proportion of Refuge-born rabbits than translocated captive-bred individuals and resulted in a relatively high overall capture rate, indicating translocated captive-bred rabbits were effectively surviving long enough to reproduce on the Refuge (Kelly and Lloyd 2009). This early success was set back when the Refuge flooded during the spring and summer of 2006 and the newly established local population crashed. No rabbits were captured during census efforts on the Refuge in the fall 2006 and spring of 2007 (Ibid.). However, by the spring 2008 census, the capture rate of Refuge-born rabbits was again nearly equal to the capture rate of captive-bred rabbits, and from 2008-2010 each census captured more Refuge-born individuals than captive-bred individuals (Kelly and Lloyd 2010). High overall capture rates indicated the local population in the West Unit was well established; so further releases in the area were suspended. However, release of small numbers of captive-bred rabbits continued in other areas of the Refuge through 2013 (Kelly 2018).

Wittmer et al. (2016) used survival estimates and reproductive parameters derived from monitoring 325 translocated riparian brush rabbits released on the Refuge from 2002 to 2005 to model the viability of the local population. Several different scenarios were modeled, including continued translocations, suspended translocations, and different frequencies and severities of flood events. They found very high probabilities of local extinction under all examined scenarios, including scenarios that excluded flood events which suggested the local population was not self-sustaining. The authors noted, however, that the model results did not reconcile with observations of riparian brush rabbit persistence on the Refuge following the suspension of translocations and the persistence in the small South Delta and Caswell Park populations. This

disagreement suggests survivorship and reproduction rates in the established population on the Refuge were higher than the rates observed in translocated rabbits.

A significant flood event occurred in late March of 2011 and a salvage effort was initiated to rescue riparian brush rabbits from flooded and vulnerable areas and relocate them to higher ground (Kelly and Holt 2011). The fall 2011 census capture rate indicated the Refuge riparian brush rabbit population was dramatically reduced by the flood. A similar flood event occurred in 2017, again prompting salvage efforts by Endangered Species Recovery Program researchers and Refuge staff. Rabbit survival appears to have been higher through the 2017 flood compared to earlier floods. This was most likely due to the presence of newly constructed high elevation earthen mound refugia (popularly referred to as bunny mounds), efforts to plant vegetation on the upper slopes of levees to provide cover and forage for rabbits by researchers and Refuge staff (Kelly 2018; Eric Hopson pers. comm. 8/27/2019). Increased survival through the flood. However, the regular census was suspended in 2013, so no data is available on the postflood local population size, nor on the current population size and trend (Kelly 2018).

# V. THREATS AND SURVIVAL FACTORS

# A. Factors Affecting Ability to Survive and Reproduce

# i. Present or Threatened Modification or Destruction of Habitat

The major cause of the decline in the riparian brush rabbit subspecies population is the loss, fragmentation, and degradation of San Joaquin Valley native riparian communities from their historic range (Williams and Basey 1986; Basey 1990). Intact San Joaquin Valley riparian forest has been reduced to <1% of its historical extent, primarily through the clearing of natural vegetation, irrigated cultivation, and the impoundment and channelization of rivers (Williams et al. 2008). Much of the remaining San Joaquin Valley riparian habitat is fragmented and regularly subjected to prolonged flooding, which limits the ability of riparian brush rabbits to occupy suitable habitat patches. In addition, riparian communities degraded by vegetation removal, fires, and invasive species are unlikely to support viable riparian brush rabbit populations due to modified cover, decreased forage availability, and increased predation pressure.

# ii. Overexploitation

Hunting of riparian brush rabbits is prohibited by law; however, it is possible that riparian brush rabbits may be taken inadvertently on occasion by hunters pursuing desert cottontails. Riparian brush rabbits could also be taken by landowners attempting to control desert cottontails which damage crops and irrigation tubing. Finally, riparian brush rabbits can be killed or injured during handling related to research and captive propagation.

#### iii. Predation

Documented predators of brush rabbits include red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperi*), barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), California scrub jay (*Aphelocoma californica*), bobcat (*Felis rufus*), coyote, raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), striped skunk (*Mephitis mephitis*), mink (*Neovison vison*), long-tailed weasel, western rattlesnake (*Crotalus viridus*), and gopher snake (*Pituophis catenifer*) (Bryant 1918; Foster 1927; Hall 1927; Orr 1940; Sumner 1929 as summarized in Basey 1990). Non-native predators include black rats (*Rattus rattus*), feral cats, and feral dogs (Williams 1988; Patrick Kelly pers. comm. 8/28/2019).

## iv. Competition

The only significant competitor with riparian brush rabbits for food resources are desert cottontails, which are sympatric (occur in the same areas) with riparian brush rabbits throughout most of the riparian brush rabbit's range (Basey 1990).

# v. <u>Disease</u>

Riparian brush rabbits are subject to the common rabbit diseases that occur in California (Williams 1988), such as tularemia, plague, myxomatosis, silverwater virus, encephalitis, listeriosis, Q-fever, and brucellosis. In the captive riparian brush rabbit population, the most commonly implicated fatal disease was *Baylisascaris* spp. (a parasitic roundworm that infests the intestines and nervous system). Other diseases implicated in rabbit deaths were necrotizing typhlitis (inflammation and necrosis in the lower intestinal tract), and intestinal lymphoma (Williams 2008).

# vi. Small Populations

The extant riparian brush rabbit subspecies population is small and exists in several small patches of suitable habitat isolated from each other. Small, isolated local populations are inherently vulnerable to extinction due to the loss of genetic variability, inbreeding depression, genetic drift, reduced genetic capacity to respond to changes in the environment, and demographic stochasticity (changes in age and sex ratios resulting in less than optimal breeding opportunities) from random variation in birth and death rates (Primack 1993; Reed and Frankham 2003). Additionally, the smaller the population size, the more likely it is that any of the threats acting on it alone or in combination will drive the population to extinction (Primack 2010).

# vii. <u>Flooding</u>

Riparian brush rabbits, being dependent on riparian habitat, are vulnerable to flooding. In the last few decades, the lower San Joaquin River and South Delta have experienced major floods in 1995-1996, 1996-1997, 1998, 2005, 2006, 2011 and 2017. Because elevated land is extremely limited within the extant range of the riparian brush rabbit, floods result in numerous drownings. Rabbits that are able to climb vegetation above flood level or find refuge on levees

and other high ground are subjected to increased predation pressure and often starve due to limited forage (Williams and Basey 1986; Williams 1988; Basey 1990).

# viii. <u>Wildfire</u>

Due to the extremely limited remaining amount of suitable riparian shrub and riparian forest habitat, wildfires occurring within the remaining habitat can cause direct mortality and easily destroy a large proportion of the remaining habitat (Williams and Basey 1986; Williams 1988; Basey 1990; Williams 1993).

# ix. Invasive Species

Several known invasive plant species have been documented on the Refuge and likely occur elsewhere along the San Joaquin River and in the South Delta. These species include wisteria (*Wisteria* sp.), tree of heaven (*Ailanthus altissima*), giant reed (*Arundo donax*), pampas grass (*Cortaderia selloana*), tamarisk (*Tamarix* sp.), and edible fig (*Ficus carica*). Changes in the vegetative community imposed by invasive species may render habitat less suitable for riparian brush rabbits by reducing available forage and cover (USFW 2014).

# x. Rodenticides

Riparian brush rabbits outside of the Refuge and Caswell Park may be exposed to rodenticides that can kill individuals and potentially limit range expansion.

# xi. Recreation

Riparian brush rabbits, primarily within Caswell Park, likely experience disturbance due to the presence of recreating humans and may be impacted by land management practices such as campground clearing, fuel treatments, and trail maintenance that adversely modify habitat.

# xii. Climate Change

Anthropogenic changes in climate will likely impact riparian brush rabbits chiefly through changes in the San Joaquin Basin hydrologic regime. Climate projections indicate the frequency and severity of flood events will increase in coming decades (Das et al. 2013). This factor is discussed further under section V.vii. Climate change is also likely to result in more frequent droughts and droughts of longer duration (He et al. 2018). Droughts could impact riparian brush rabbits by causing compositional and structural changes in the vegetative communities they rely upon and increasing the frequency and severity of wildfires (Westerling and Bryant 2006; Bedsworth et al. 2018). In addition, projected temperature increases could result in lethal heat stress (Hinds 1973).

#### B. Degree and Immediacy of Threats

#### i. Present or Threatened Modification or Destruction of Habitat

Riparian forest communities in the San Joaquin Valley have been reduced to <1% of their historical extent, primarily through the conversion of native communities to agricultural production and impoundment and channelization of streams and rivers (Williams et al. 2008). These changes were made possible by the construction of dams on tributary rivers (e.g. New Exchequer Dam on the Merced River [completed 1967], New Melones Dam on the Stanislaus River [completed 1978], and New Don Pedro Dam on the Tuolumne River [completed 1971]), which collectively reduced the frequency and severity of flooding in the San Joaquin Valley. The construction of reservoirs and flood control levees allowed farmers to clear, level, and cultivate San Joaquin Valley floodplains and adjacent shrublands (Williams and Basey 1986). Prior to large-scale land conversion, many valley riparian zones had uneven topography with adjacent shrub-covered uplands elevated above typical flood levels that provided refuge to riparian brush rabbits during flood events (Williams and Basey 1986). These elevated shrubland rabbit refuge areas no longer exist. High ground is now primarily limited to levee tops that provide little cover from predators and limited forage (Williams and Basey 1986).

The Refuge and Caswell Park population is not at risk of further habitat loss from agricultural, commercial, or residential conversion; however, the majority of the Refuge was cleared, leveled, and farmed prior to being acquired by the USFWS and therefore provides few elevated areas for rabbits outside of levees and constructed flood refugia (i.e. bunny mounds).

South Delta local populations are at risk of further habitat fragmentation and destruction as they occur largely on privately owned lands (Williams et al. 2008). Large-scale residential and commercial development projects have recently been approved in this area. The Mossdale Village, Central Lathrop, and River Islands at Lathrop Specific Plan Areas in the City of Lathrop allow for the development of approximately 3,035 ha (7,500 ac.) in the South Delta (City of Lathrop 2019), (Figure 2). The largest of these Specific Plans is the River Islands at Lathrop, roughly bounded by Interstate 5, the San Joaquin River, Old River, and Paradise Cut. The City of Lathrop is a signatory to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, which requires the complete avoidance of occupied riparian brush rabbit habitat. However, development in this area near the juncture of several local South Delta populations further fragments already isolated remaining occupied habitat. Loss of habitat in this rapidly developing area also significantly impacts the conservation and recovery of the subspecies because local populations in this area are more flood-secure than populations elsewhere (see Figure 4). Although occupied habitat is protected under the Habitat Conservation Plan, local riparian brush rabbits will be subject to the impacts associated with nearby residential development (e.g. human trespass into occupied habitat, predation by domestic dogs and cats and non-native rats, nighttime lighting, and potentially more frequent fire ignitions resulting in habitat degradation and loss [Syphard et al. 2007; Kelly 2018]). Residential and commercial development in the area occupied by South Delta riparian brush rabbit populations effectively precludes future habitat restoration opportunities within the development footprint.

In the same general location, a major flood control project is under consideration. The Paradise Cut Flood Management Project is in the planning stages (Figure 3). This project would expand the flood zone west of Paradise Cut and install a 305 m (1,000 ft.) weir at the junction of Paradise Cut and the San Joaquin River to allow water managers to open the floodway during flood events. The project is projected to result in a 0.6 m (2 ft.) reduction in peak flood stage in the lower San Joaquin River (California Department of Water Resources 2017). This reduction in peak flood elevation may benefit riparian brush rabbit populations locally and upstream by increasing the area of dry refugia during floods and slightly shortening the duration of flood events. The project concept also includes the creation of 202 ha (500 ac.) of riparian scrub and wetland habitat which could provide some benefit to local riparian brush rabbit populations. However, the new habitat would be subject to periodic flooding and therefore is unlikely to contribute to recovery of the subspecies. The planned flood bypass area includes the locations where the majority of the breeding stock used in the captive propagation project were captured (Kim Forrest pers. comm. 9/20/2019).

Another less common but potentially significant source of habitat loss is from illegal marijuana grows. Illegal grows were found in riparian habitats at the captive propagation pens in San Joaquin County and have been found within the Refuge in the past (USFWS 2006; Kelly 2018). The degree of threat posed by this activity is unknown.



Figure 2. City of Lathrop planned development areas.



Figure 3. Proposed Paradise Cut Flood Management Project.

#### ii. Overexploitation

As a CESA-listed species, the hunting of riparian brush rabbits is prohibited (Fish and G. Code § 2080), and approximately half of the South Delta local population area lies within a rabbit hunting closed zone which was designated in 2002 to protect the known occurrences of riparian brush rabbits outside of Caswell Park as they were understood at that time (Cal. Code Regs. tit.14 § 308(d)). Additionally, all hunting is prohibited in Caswell Park, the 12 ha (30 ac.) Oxbow Preserve in Lathrop, and all rabbit hunting is prohibited on the Refuge. Nonetheless, it is possible that hunters occasionally mistakenly take endangered riparian brush rabbits when pursuing legally huntable rabbit species outside of areas closed to hunting. Since 2002, additional small local populations of riparian brush rabbits were discovered north and south of the closure zone in areas open to rabbit hunting. However, the Department Wildlife Officers who collectively patrol the entire occupied riparian brush rabbit range in San Joaquin and Stanislaus Counties reported they rarely observe rabbit hunting in the two counties, nor had they ever encountered hunters in pursuit of riparian brush rabbits (Warden Adam Cahn, Capt. Ryan Detrick, Warden Jeffrey Moran, Lt. Eric Vielhauer pers. comm. 6/17/2019).

Take of cottontail rabbits is known to occasionally occur in San Joaquin County to curtail the destruction of drip irrigation lines in vineyards (Capt. Eric Vielhauer, pers. comm. 6/17/2019). It is possible that endangered riparian brush rabbits could be mistakenly taken when landowners are controlling destructive cottontails. However, with the exception of the margins of vineyards adjacent to riparian habitat, riparian brush rabbits would be unlikely to venture into vineyards due to their lack of dense shrubby cover. Therefore, the accidental take of riparian brush rabbits is most likely minimal.

Researchers are required to report take of riparian brush rabbits to the Department as a condition of the Memoranda of Understanding to handle the subspecies. The Department was notified of several mortalities related to the captive propagation and translocation effort. Most of the reported mortalities resulted from trauma sustained in traps. A few animals also succumbed to radio-collar related trauma, and others from unknown trauma. Since the captive propagation and translocation effort concluded in 2013, no additional research-related take has been reported to the Department. Currently only two researchers are permitted by the Department to handle riparian brush rabbits, and no active research efforts are underway. At this time, overexploitation does not pose a significant threat to the subspecies population.

#### iii. Predation

Predation is the primary cause of mortality in many rabbit and hare species and was identified as the cause of most attributable mortalities in released captive-bred riparian brush rabbits on the Refuge (Williams et al. 2008; Hamilton 2010). Riparian brush rabbits are known to be preyed upon by a wide variety of avian, mammalian, and reptilian predators (see Predation section above). Predation in unaltered natural systems is unlikely to result in prey extinction (Krebs et al. 1995); however, when the prey species' environment is altered abruptly or systematically at a rate above normal background change (e.g. the dramatic reduction in San Joaquin Valley riparian forests), increased predation may drive populations to extinction (Sodhi et al. 2009).

Predation rates on riparian brush rabbits near Caswell Park are believed to be high due to the presence of feral cats and black rats. Black rats are thought to be significant predators of newborn rabbits in nests (Williams et al. 2002; Patrick Kelly pers. comm, 8/28/2019). The USFWS (2000) concluded that any predation on small, isolated riparian brush rabbit populations was a significant threat to the subspecies population.

Although little is known about local riparian brush rabbit populations in the South Delta, Williams et al. (2002) believed feral cats, long-tailed weasels, and coyotes were likely the most abundant predators in the area. Kelly et al. (2011) noted that predation risk in the South Delta was elevated in many areas due to adjacent residential properties supporting cats, rats, and dogs, as well as the existence of roads and waterways, which provide easy access to predators.

Predation throughout the occupied range is elevated during the frequent flood events that impact the San Joaquin Valley. When rabbits seek refuge from floodwaters in trees and on the limited areas of levee tops and constructed bunny mounds they are subject to extreme predation pressure because they are concentrated in small areas which often lack the dense shrub, and tree cover that brush rabbits normally seek for protection from predators. Researchers and Refuge staff have observed coyotes swimming to flood refugia during flood events to prey on stranded rabbits (Eric Hopson pers. comm. 8/27/2019; Patrick Kelly pers. comm. 8/28/2019). Over the course of a prolonged flood event in 2017, Refuge staff monitored rabbits (a mix of desert cottontails and riparian brush rabbits) stranded on the upper portions of a 3.2 km (2 mi.) long levee. The monitored population declined from 487 rabbits observed in March to less than 100 in July when flood waters had receded enough to allow stranded rabbits to disperse. The dramatic population decline was most likely due to a combination of predation and starvation (Katherine Heffernan pers. comm. 6/4/2019).

Riparian brush rabbits face high predation rates from native predators as well as potentially significant additional predation pressure from introduced predators such as feral cats, dogs, and black rats that are supported by residential development (Williams 1988; Basey 1990; Kelly et al. 2011; Kelly 2018). Habitat fragmentation has likely created more favorable conditions for generalist predators such as coyotes to gain access to riparian brush rabbits. The limited availability of flood-safe habitat compounds predation pressure by concentrating rabbit populations in small areas that lack adequate cover during flood events. Predation significantly threatens the survival and recovery of the riparian brush rabbit subspecies population.

#### iv. Competition

Riparian brush rabbits are sympatric (co-occur) with desert cottontails throughout their range, except possibly within the mature riparian forests in the interior of Caswell Park (Basey 1990). Both species are found associated with riverside brush thickets and forage on the same types of plants (Ingles 1965); however, desert cottontails can also be found in a broad range of habitats far from rivers: dense grass, hedge rows, rock piles, and man-made structures (Basey 1990). Desert cottontails also move further from cover when foraging, have larger home ranges, and have greater fecundity than riparian brush rabbits (Dixon et al. 1981; Chapman et. al. 1982). Interestingly, a lower proportion of desert cottontails appear to survive long-term stranding on small patches of dry land during major flood events compared to riparian brush rabbits (Kim Forrest pers. comm. 9/20/2019). However, due to their use of a wider range of habitats, longer movements, and greater fecundity, desert cottontails are more able to survive when displaced from riparian habitat by floods and fires, and are able to rapidly recolonize recently flooded or burned habitat (Basey 1990). In the altered and fragmented riparian habitat remaining in the San Joaquin Valley and Delta, competition from desert cottontails may pose a significant challenge to the persistence of riparian brush rabbits (Williams and Basey 1986; Basey 1990).

#### v. Disease

Brush rabbits are subject to common rabbit diseases in California (Williams 1988), such as tularemia, plague, myxomatosis, silverwater virus, encephalitis, listeriosis, Q-fever, and brucellosis; some of which can reach epidemic proportions (Chapman 1974, Williams 1988, Williams et al. 2002). Of these, the bacterial disease tularemia has the greatest potential to negatively impact riparian brush rabbits at the population level. Tularemia has been implicated in population regulation of the closely related eastern cottontail (*S. floridanus*) and is known to

be endemic in brush rabbit populations (Woolf et al. 1993; Williams et al. 2002). Although tularemia is typically enzootic in rabbit populations (i.e. present, but effecting only a small proportion of the population at a given time), it occasionally becomes epizootic (rapidly spreads through a population in an outbreak) and can cause drastic die offs in rabbit populations (Woolf et al. 1993). Tularemia is frequently fatal, and it is thought to be the most frequent cause of cottontail mortality with the exception of predation. Isolated populations are at greater risk of severe population declines from tularemia epizootics than large contiguous populations (Woolf et al. 1993). Tularemia is transmitted through contact with infected tissue, ingestion of aerosolized particles, and contact with infected soil or water. It can infect most vertebrate species. Riparian brush rabbits could easily be exposed to the bacterium through contact with infected desert cottontails or other sympatric species (USFWS 2000). It is of additional concern because it is a known zoonotic (transmissible to humans), (Williams et al. 2002).

Myxomatosis is a mildly pathogenic viral disease which is endemic in California brush rabbit populations and is known to have become epizootic in California brush rabbits from the San Francisco Bay to Baja California, Mexico in the 1960s. More than 95% of a brush rabbit population in southern California was found to be infected by the virus, although mortality rates were low (Regnery and Miller 1971).

In the captive riparian brush rabbit population, the most commonly implicated fatal disease was *Baylisascaris* spp. infection (a parasitic roundworm which infests the intestines and nervous system). *Baylisascaris* spp. roundworms are spread through eggs in the feces of infected racoons and skunks and ingested by rabbits (and other vertebrate hosts, including humans). Once ingested, eggs hatch and some larvae migrate to the host's central nervous system and cause debilitation and death (Gavin et al. 2005). Other diseases implicated in rabbit deaths were necrotizing typhlitis (inflammation and necrosis in the lower intestinal tract), and intestinal lymphoma (Williams 2008). The captive propagation and reintroduction program did not identify infectious disease problems in the source population, captive rabbits, or reintroduced riparian brush rabbits as a significant source of mortality (Gilardi et al. 2004). However, if exposure to infected desert cottontails or other species were to result in tularemia epidemics in the small, isolated, riparian brush rabbit populations, rapid extirpations (local extinctions) could occur (Williams 1988).

#### vi. Small Populations

No recent estimates of the riparian brush rabbit subspecies population exist. However, the population size is undoubtedly so small that genetic and environmental factors present significant threats to its viability. As recently as 1993, the total population was estimated at 241 animals, although at that time only the Caswell Park population was known (Constable et al. 2011). Since then, additional small local populations have been discovered in the South Delta and over 1,500 riparian brush rabbits were released over a period of 11 years on the Refuge; however, their fates and the fates of their offspring are largely unknown and there have been significant flood events since their release (Kelly 2018). Likely no more than a few thousand riparian brush rabbits exist today in fragmented populations that remain vulnerable to periodic crashes during flood events (Constable 2011).

Random fluctuations pose risk to small populations due to demographic stochasticity (random variation in sex ratios, reproductive output, and survival amongst individuals from year to year). In small populations, this variation can cause the population size to fluctuate randomly up or down (Primack 1993). The smaller the population size, the more pronounced the effect. Once a population size drops, its next generation is even more susceptible to further stochasticity and random inequalities in the sex ratio, resulting in fewer mating opportunities and a declining birth rate (Primack 1993). Due to their small population sizes (particularly following flood events), riparian brush rabbits are likely vulnerable to these effects.

Unpredictable changes in the natural environment and biological communities can cause the size of small populations to vary dramatically, whereas larger, more widely distributed populations remain more stable because such changes normally effect only a small proportion of the population (Primack 1993). For example, unpredictable local changes in a species' food resources or predator populations, climate, vegetative community, or disease and parasite exposure can cause the size of a small, isolated population to fluctuate wildly, and possibly lead to extinction (Primack 1993). Additionally, natural disasters such as droughts, fires, and floods can lead to dramatic population changes if the population is small and localized such that the disaster impacts all or most of the individuals.

The loss of genetic diversity inherent to small, isolated populations can be expected to increase their risk of extinction as small, inbred populations have reduced genetic capacity to adapt to changing environments (Frankham 2005). In populations with a limited breeding pool, genetic drift (the variation in the relative frequency of different alleles in the population due to the chance disappearance of particular alleles from inbreeding and lack of immigrants) becomes likely (Hedrick and Kalinowski 2000). In large populations, maladaptive genes do not accumulate in the population since random mate pairings are frequent and less fit offspring survive and reproduce less frequently through natural selection. However, in small, isolated populations natural selection can have less of an effect on the population genotype than genetic drift. When this happens, deleterious alleles can become fixed in the population, resulting in inbreeding depression (decreased reproductive fitness in all individuals), and potentially negative population growth (Hedrick and Kalinowski 2000; Frankham 2005).

The loss of genetic diversity and the accumulation of deleterious alleles can largely be mitigated by the exchange of breeding individuals between population centers (Primack 1993). When individuals disperse from their natal population to new population areas, the novel alleles they introduce can balance the effects of genetic drift and inbreeding depression. As few as one migrant per generation in a population of 120 individuals can negate the effects of genetic drift (Primack 2010). Consequently, habitat fragmentation can seriously increase the genetic risks to isolated local populations, and habitat connectivity between local populations can substantially mitigate these risks.

Two studies of microsatellite DNA markers concluded that the South Delta local riparian brush rabbit population is genetically distinct from the Caswell Park local population. The studies found greater genetic diversity in the South Delta population, likely due to recent genetic bottlenecks (severe population crashes) in the Caswell population (Williams et al. 2002;

Constable et al. 2011). More recent mitochondrial DNA sequencing, microsatellite analysis, and single nucleotide polymorphism analysis by Matocq et al. (2017) further elucidated genetic relationships between riparian brush rabbit local populations. This analysis confirmed significant genetic structure (differences in allele frequencies between populations) between the Caswell Park local population and the South Delta local population. The genetic differentiation between populations was found to be significant, only slightly less than that found between the riparian brush rabbit and *S. bachmani macrorhinus,* a subspecies of the California Coast Range. This indicates geographic distance and barriers to rabbit movement between Caswell Park and the South Delta have likely limited contemporary gene flow between the two local population groups (Matocq et al. 2017). It appears the isolated populations, Matocq et al. (2017) also detected genetic differentiation between rabbits on the west side of the Delta along Paradise Cut and rabbits to the east near Mossdale, suggesting discontinuous habitat between the two areas.

The genetic composition of the introduced riparian brush rabbit population on the Refuge is intermediate to the South Delta and Caswell Park local populations, indicating gene flow between the Refuge rabbits of South Delta parentage and the native rabbits of Caswell or other undocumented local native populations (Matocq et al. 2017; Rippert 2017). This genetic exchange, facilitated by restored habitat connections, suggests continued recovery and restoration efforts are likely the best option for management and recovery of this subspecies. (Rippert 2017).

A variety of threats inherent to small populations may threaten riparian brush rabbits. Environmental and genetic effects can work in concert to amplify other threats. As populations get smaller, they become more vulnerable to demographic variation, environmental variations, genetic drift, and inbreeding depression. Each of these effects can amplify the impact of the other effects, further reducing population size and accelerating the species towards extinction in what has been termed an extinction vortex (Primack 1993).

#### vii. Flooding

The entire riparian brush rabbit subspecies population is at risk of periodic flood events, with nearly all known occurrences within a projected 100-year flood zone mapped by the Federal Emergency Management Agency in its National Flood Hazard Layer (Figure 4).

The San Joaquin River and its tributary rivers are regulated by a series of flood control and irrigation storage dams that prevent flooding in typical water years. Occasionally however, atmospheric river rainfall events or periods of rapid snowmelt (often in combination) overwhelm the system and reservoir operators must release flood-level flows resulting in prolonged flood events (Phillip Williams and Associates 2001). Floods have occurred on the lower San Joaquin River in 1950-51, 1952, 1955-56, 1962-63, 1976, 1982-83, 1985-86, 1995, 1996-1997, 1998, 2005, 2006, 2011, and 2017 (Williams 1988; Hamilton 2010; Kelly 2018).

Climate projections indicate flooding will become more frequent and more severe with warming temperatures. The frequency of extreme precipitation atmospheric river events is projected to

increase nearly three-fold and the amount of precipitation delivered during extreme storm events projected to increase by 15%-39% by the end of the century (Warner et al. 2014).

Das et al. (2013) evaluated an ensemble of 16 global climate models under two future emissions scenarios and found an increased flood risk in central Sierra Nevada rivers (e.g. Stanislaus, Tuolumne, and Merced Rivers, which are tributary to the lower San Joaquin River and Delta) in a large majority of the projections. The projected increases in flood intensity and frequency are attributed to stronger storm intensities and warmer temperatures resulting in more precipitation falling as rain, which runs off rapidly, rather than snow which accumulates and melts gradually.

In the San Joaquin River watershed, the magnitude of 50-year peak flow flood events is projected to increase by 50-100% to levels that exceed current flood infrastructure design standards (Das et al. 2013). These changes in flow magnitude are projected to progressively increase through the next century with significant increases realized by 2025-2035. These changes will challenge California's reservoir managers who strive to balance flood control with irrigation storage, likely resulting in more frequent and intense flood flows released to the lower San Joaquin River (Das et al. 2013).

Floods can drown riparian brush rabbits, concentrate rabbits in small areas above floodwaters, such as levee tops and man-made bunny mounds where they are vulnerable to predators and starvation for several months until floodwaters recede. Floods can also damage riparian habitat by scouring vegetative cover and forage plants, and killing vegetation intolerant of prolonged inundation such as coyote bush (*Baccharis pilularis*), blue elderberry, wild rose, and California blackberry (Singleton et al. 2007). Post-flood surveys conducted in Caswell Park and the Refuge indicate high levels of brush rabbit mortality occur during floods. A flood event in the spring of 2006 inundated much of the Refuge under 1-3 m (3.3-9.8 ft.) of water for up to 17 weeks, resulting in the deaths of 91% of radio-collared rabbits (Lloyd et al. 2011). Regular flood events along the San Joaquin River have resulted in repeated drastic population declines. For example, in 1976 the Caswell Park population was reported to number less than 20 individuals following that year's flood event (CDFG 1993), and after the next severe flood in the winter of 1985-1986, Williams (1988) estimated only 6 to 31 individuals remained.



Figure 4. Federal Emergency Management Agency 100-year flood hazard zone.

Following the catastrophic flood of 2006. Refuge staff constructed several earthen mounds (bunny mounds) and planted the mounds and the tops of levees with riparian shrub and tree species to create flood refugia for riparian brush rabbits (Llovd et al. 2011) (Figure 5). During a subsequent flood of similar magnitude in 2011 riparian brush rabbits were observed using the bunny mounds and vegetated levees. Approximately 50% of brush rabbits appeared to survive the event, suggesting the additional high elevation habitat was beneficial (Kelly and Holt 2011). However, bunny mounds and levees alone do not provide enough forage and cover from predators to support high numbers of riparian brush rabbits through prolonged flood events. Refuge staff and researchers have repeatedly resorted to rescuing individual stranded rabbits by boat and feeding stranded rabbits to keep them alive through flood events (Eric Hopson pers. comm. 8/27/2019; Patrick Kelly pers. comm. 8/28/2019). Riparian brush rabbit managers and researchers do not believe bunny mound and levee refugia alone are adequate to ensure the long-term persistence of the subspecies on the Refuge. Much larger patches of high elevation flood refugia with adequate cover and food resources to sustain a substantial number of rabbits through prolonged flood events are needed (Eric Hopson pers. comm. 8/27/2019; Patrick Kelly pers. comm. 8/28/2019; K. Forrest pers. comm. 9/20/2019).

Little is known about the impact of flooding on riparian brush rabbits in the South Delta. While much of the remaining riparian habitat along levees and river channels is periodically inundated, limited areas of occupied habitat along railroad rights of way generally remain above floodwaters (P. Kelly pers. comm. 8/28/2019). As continuing residential development and flood control infrastructure development further isolate and restrict access to flood refugia in the face of projected flood events of greater magnitude and frequency, flooding will likely pose a serious threat to the South Delta local populations in the coming decades.

Recovery of the riparian brush rabbit will require several self-sustaining viable populations to exist in flood-secure areas. These areas must provide high quality refuge during flood events, including adequate forage to sustain stranded rabbits for several months at a time, as well as adequate cover from predators. Flood refuge areas must be secure from flood events which are projected to increase in magnitude and duration compared to the current flood regime. Until such conditions exist, the subspecies population will likely continue to repeatedly crash during catastrophic flood events, slowly rebuild, and crash again during the next flood. Following population crashes, the risk of extirpation from all threats is elevated. The riparian brush rabbit subspecies population, as distributed today, remains at risk of extinction from a single catastrophic flood event.



Figure 5. Portion of the San Joaquin River National Wildlife Refuge during 2011 flood showing bunny mound and levee refugia.

#### viii. Wildfire

Wildfires pose a serious threat to the riparian brush rabbit subspecies population through both direct mortality and through the destruction and modification of brush rabbit habitat (Williams 1988, Kelly 2018). Apart from the Refuge, remaining habitat patches are small and isolated, exposing riparian brush rabbits fleeing from fires to great risk of predation and starvation.

Wildfires occur regularly within the range of riparian brush rabbits. Prior owners of lands now part of the Refuge reported regular occurrence of wildfires, with approximately one fire every ten years (USFWS 2006). Between 1975 and 1987, ten small wildfires were reported within Caswell Park (Williams 1988). Recent large fires on the Refuge included the 607 ha (1,500 ac.) Pelican Fire in 2004 which burned approximately 58% of the Refuge, including 300 ac. of highly suitable riparian brush rabbit habitat; and the 235 ha (580 ac.) River Fire in 2008 (Phillips et al. 2005, Kelly 2018) (Figure 6). The area burned by wildfires, the number of large fires, and the length of the wildfire season have all increased in the western U.S. over the last half century. These changes were largely attributable to anthropogenic climate change (Abatzoglou and Williams 2016). These trends are expected to continue in the coming decades and wildfire is likely to frequently impact riparian brush rabbit populations.

Wildfires appear to result in limited rabbit injuries and deaths. Hamilton et al. (2010) found only three fire-related mortalities and few injured rabbits following the 2004 Pelican fire. The home range size of riparian brush rabbits under study by Hamilton et al. (2010) did not change significantly following the fire, although it should be noted that only 34% of the dense riparian habitat in the study area burned. In the year following the Pelican Fire, Kelt et al. (2014) noted high mortality rates near the burned area, although they could not identify a fire-related cause. An increase in high-severity wildfires would likely result in a far greater impact on surviving

rabbits due to removal of cover and forage which would expose them to increased predation and starvation. Long-term fire-related impacts on riparian brush rabbit habitat vary.

Woody plants burned in the Pelican Fire resprouted the following growing season and within a few years many areas had largely returned to structural and species composition conditions similar to what existed before the fire (River Partners 2006). Spring monitoring following a 2008 wildfire found basal sprouting from burned willows and shrubs as well as low levels of valley oak mortality, although treetops and shrubs had significantly died back (River Partners 2009).

To reduce wildfire threat, land managers attempt to reduce fuel loads through vegetation management. Unfortunately, areas of dense vegetation most vulnerable to fire are particularly important habitat for brush rabbits (Williams 1988). For example, much of Caswell Park is overgrown with decadent shrubs and forest floors contain large quantities of woody litter, creating a dangerous fuel load and increasing the likelihood of high severity wildfires (Williams 1988). When Park managers cleared brush and litter to reduce fire threat, riparian brush rabbits ceased use of the cleared areas (Williams 1988). Despite such fire prevention efforts, a dense understory of shrubs, a layered tree canopy and accumulated leaf litter remains in much of the Park, putting it at risk of catastrophic wildfire. The surrounding intensively farmed row crops offer little cover for escaping rabbits in the event of a large fire.

The threat of a large, catastrophic wildfire on the Refuge is partially attenuated by the presence of Refuge firefighting staff, the support of mutual aid firefighting agencies, and the presence of fuel breaks (Kelly 2018). Restored suitable habitat patches on the Refuge are generally larger and better connected with other areas of suitable habitat compared to the remaining habitat patches in the South Delta and Caswell Park. This connectivity on the Refuge should allow rabbits fleeing fires access to suitable cover and increase survival rates.

The fragmented nature of the remaining habitat in the South Delta makes it unlikely that a single large wildfire would impact the entire local riparian brush rabbit population. However, this habitat fragmentation also reduces the likelihood that rabbits displaced by a local fire would survive for long in surrounding agricultural and urban landscapes. Additionally, the close proximity of most remaining patches of habitat in the South Delta to roads, railways, canals, and residential areas increases the probability of human-caused wildfire ignitions (Syphard et al. 2007; Balch et al. 2017).



Figure 6. Areas burned in recent fires on the San Joaquin River National Wildlife Refuge.

#### ix. Invasive Species

The degree to which introduction of non-native and invasive plant and animal species in altered vegetation communities impacts the riparian brush rabbit populations is unknown. It is likely invasive species will continue to increase in abundance over time and impact native fauna to a greater degree (USFWS 2013). The degree to which invasive plant species can be utilized as cover and forage is unknown, although riparian brush rabbits are commonly found in Himalayan blackberry cover (*Rubus aremeniensis*). The impact of invasive mammalian predators is discussed under Predation above.

#### x. Rodenticides

Anticoagulant rodenticides such as brodifacoum, bromodiolone, chlorophacinone, diphacinone, and warfarin are highly toxic to mammals. Second-generation anticoagulant rodenticides such as brodifacoum and bromodiolone, which were introduced when rodents developed resistance to first-generation compounds in the 1970s, are particularly deadly (Gabriel et al. 2012, 2013; Thompson et al. 2014). First-generation compounds generally require several doses to cause intoxication, while second-generation anticoagulant rodenticides, which are more acutely toxic, often require only a single dose to cause intoxication or death and persist in tissues and in the environment (Gabriel et al. 2012). In the San Joaquin Valley and Delta, rodenticides are used to protect crops from California ground squirrels (*Otospermophilus beecheyi*) and other rodents and to prevent burrowing mammals from damaging levees and other water conveyance structures (Polo. Morelo pers. comm. 9/30/2019). Highly toxic rodenticide use is also commonly associated with illegal cannabis cultivation sites. Illegal cultivation sites have been found on the Refuge and at the riparian brush rabbit captive propagation breeding pens in San Joaquin County (USFWS 2006, Kelly 2018).

At one time, Caswell Park used broadcast rodenticides within the Park to control California ground squirrels (Basey 1990) and rodenticides were regularly used along the river levee north of the Park (Williams 1988). The Park no longer uses rodenticides to control ground squirrels. Similarly, the San Joaquin River National Wildlife Refuge utilizes integrated pest management to minimize pesticide use on Refuge lands so that exposure to rodenticides on Park and Refuge lands is not likely to pose a threat to riparian brush rabbits (USFWS 2000, USFWS 2006). However, riparian brush rabbits outside of these areas and individuals that disperse outside of the Park and Refuge remain threatened by rodenticide use (USFWS 2000).

The U.S. Environmental Protection Agency and the California EPA Department of Pesticide Regulation have cooperatively developed Pesticide Use Interim-Measures Bulletins to reduce the impact of pesticide use on listed species. These bulletins are supplemental pesticide labels which specify additional use limitations in and near listed species habitats in certain geographic areas (Polo Moreno pers. comm. 9/30/2019). One such limitation designed to provide protection for riparian brush rabbits specifies that  $a \ge 15.2 \text{ m} (50 \text{ ft.})$  cleared area must exist between the edge of dense riparian vegetation and the application of pelletized rodent bait. Alternatively, a Tshaped tube feeder must be used to dispense bait and be capped at night. Compliance with the bulletins is largely voluntary, although some county Agricultural Commissioners do incorporate the protective measures into applicator permits making the provisions enforceable. Additionally, the US EPA has added endangered species considerations to certain rodenticides labels (e.g. chlorophacinone treated grain and diphacinone treated grain) which directs applicators to follow the relevant bulletins and allows Agricultural Commissioners to enforce the bulletin conditions. However, the labels of many common rodenticides do not yet reference endangered species considerations (e.g. zinc phosphide and wax block). Additionally, as the Pesticide Use Interim-Measures Bulletins for riparian brush rabbits only apply near dense riparian vegetation, they may not provide adequate protection for riparian brush rabbits occupying isolated blackberry-patches or riparian vegetation not deemed "dense" by applicators.

The number of riparian brush rabbits killed by rodenticides is unknown, but exposure to rodenticides may be a significant threat to riparian brush rabbits outside of Caswell Park and the Refuge. Rodenticides may prevent riparian brush rabbits from dispersing out of protected areas and limit the subspecies' capacity to expand its range.

#### xi. Recreation

Information on the effects of recreational activities on riparian brush rabbits is mixed. Orr (1940) observed that brush rabbits ceased foraging for an average of 6 minutes following disturbance from humans which suggests repeated human disturbance may adversely affect riparian brush rabbits. Kelly (2018) noted that camping and day use activities in Caswell Park negatively impacted the local brush rabbit population. Conversely, Williams (1988) observed that riparian brush rabbits were common in campground areas and trailside thickets following a flood. However, it should be noted that Williams' observations were made when park visitors were not likely to be present. The seasonal presence of recreating humans likely renders some portions of the Park temporarily unusable for rabbits. Outside of the Park, impacts to rabbits from recreation are likely negligible.

#### xii. Climate Change

Climate change is expected to impact riparian brush rabbits significantly through changes in flood frequency and magnitude due to changing precipitation patterns (see Flooding section above) and more frequent wildfires (see Wildfire section above). Climate change will likely impact riparian brush rabbit populations through other pathways as well, including drought, sea level rise, and acute heat stress.

Droughts in California have become increasingly extreme in recent years and are projected to become more frequent (Bedsworth et al. 2018; He et al. 2018). Although little is known about the impact of droughts on riparian brush rabbits, droughts could result in significantly reduced growth of the plant species riparian brush rabbits forage on, and prolonged droughts could result in substantial mortality in the shrub and tree species rabbits rely on for cover and food. Thorne et al. (2016) modeled a 15-24% reduction in the area that is currently climatically suitable for Central Valley riparian forest tree species by the end of the century under two future climate models using two future emissions scenarios, in part due to decreases in precipitation. Limited riparian brush rabbit population data from Caswell Park indicate a seven-year drought in the late 1980s and early 1990s did not negatively impact the local riparian brush rabbit

population (Williams 1993; Williams et al. 2000). This suggests the subspecies has some capacity to weather droughts within the normal range of historical variation, but the subspecies' ability to survive the projected unprecedented droughts of the future is unknown.

Mean sea levels in the San Francisco Bay are projected to rise 0.30-0.45 m (0.98-1.48 ft.) by year 2050, and 0.90-1.40 m (2.95-4.59 ft) by year 2100 from year 2000 levels (Cayan et al. 2012). As mean sea levels rise, the probability of flooding in the South Delta and lower San Joaquin River system increases when high tides and wet winter storms combine. By 2050, Delta levees may fail to meet the federal levee height standard of 0.46 m (1.5 ft.) freeboard above 100-year flood levels, and widespread flooding could occur in the South Delta and lower San Joaquin River (Bedsworth et al. 2018).

The mean annual maximum temperature in the San Joaquin Valley is projected to increase by 2.0-3.0°C (3.6-5.4°F) over the 1951-2013 mean by year 2050, and by 2.3-4.6°C (4.1-8.3°F) by the end of the century (He et al. 2018). No information exists regarding the riparian brush rabbit's ability to tolerate high temperatures, but the closely related desert cottontail becomes hyperthermic at temperatures above  $30^{\circ}$ C ( $86^{\circ}$ F) and body temperatures begin to rise in relation to ambient temperatures. When body temperatures approach  $45^{\circ}$ C ( $113^{\circ}$ F) desert cottontails die (Hinds 1973). Temperatures in the San Joaquin Valley have historically exceeded a heat index (a measure of how heat feels to organisms based on temperature and humidity) of  $40.6^{\circ}$ C ( $105^{\circ}$  F) three days per year on average (calculated from Fresno, CA data). Projections indicate a heat index of  $40.6^{\circ}$  C will be exceeded an average of 59 days per year by the end of the century if no further action is taken to slow anthropogenic warming. Furthermore, conditions hotter than historically precedented (roughly equivalent to a heat index >58.3°C [ $137^{\circ}$ F]) will be reached as many as 10 days per year in the northern San Joaquin Valley (Dahl et al. 2019). Such conditions would likely result in substantial brush rabbit mortality and possibly threaten the subspecies.

# VI. MANAGEMENT AND RECOVERY

# A. Impact of Existing Management Efforts

# i. Captive Propagation

The Recovery Plan for the riparian brush rabbit set a goal of maintaining or establishing three self-sustaining, wild populations outside of Caswell Park within the historical range of the species (USFWS 1998). In 2001, a captive propagation and reintroduction program was initiated. This program was largely run by the Endangered Species Recovery Program of California State University Stanislaus in partnership with the USFWS, U.S. Bureau of Reclamation, California Department of Fish and Wildlife, California Department of Water Resources, California Department of Parks and Recreation, U.C. Davis Wildlife Health Center and Veterinary Medical Teaching Hospital, Sacramento Zoo, Center for Natural Lands Management, and River Partners with cooperation from private landowners in the South Delta who provided access for trapping breeding stock (Williams et al. 2002; Kelly 2018).

The program captured riparian brush rabbits in the South Delta, held them temporarily in outdoor breeding pens, and released their offspring into newly restored riparian habitat on the Refuge once they reached weights  $\geq$ 400g and were screened by veterinarians (Kelly 2018). Releases began in 2002 and continued through 2013. During the initial five years of releases rabbits were fitted with radio collars, and information on dispersal, habitat use, and survivorship was collected. Rabbits were released into newly acquired Refuge lands and easements along the San Joaquin and Stanislaus Rivers which are contiguous with Caswell Park – connecting the Refuge population to the existing Park population. Over the course of the propagation program 1,496 riparian brush rabbits were released on Refuge lands (Kelly 2018). The riparian brush rabbit subspecies population has likely been dramatically augmented by this effort. although no quantitative monitoring has occurred to estimate the size of re-established populations since the captive propagation project was suspended in 2013 (Eric Hopson pers. comm. 8/27/2019, Patrick Kelly pers. comm. 8/28/2019). The increase in riparian brush rabbit distribution and abundance resulting from the captive propagation effort has increased the probability of more individuals surviving future flood events and other threats to breed and begin rebuilding populations. However, as noted above, essentially all of the current riparian brush rabbit range remains at risk of catastrophic flooding.

#### ii. San Joaquin River National Wildlife Refuge

The San Joaquin River National Wildlife Refuge was established 1987 to protect Aleutian Canada geese wintering on pastures and wetlands in north-central Stanislaus County (USFWS 2014). At the time, riparian brush rabbits were only known from the nearby Caswell Park. Beginning in 2002, captive-bred riparian brush rabbits were released on the Refuge as part of a comprehensive captive propagation program. The program continued through 2013 with a total of 1,496 riparian brush rabbits released. Today the Refuge has grown to approximately 4,047 ha. (10,000 ac.) of fee title and conservation easement land and it contains the largest extant local riparian brush rabbit population. Management for the recovery of the subspecies is now one of the Refuge's main objectives (USFWS 2014; Eric Hopson pers. comm. 8/27/2019).

Much of the Refuge is former farmland and dairy land which was converted from native land as early as the 1920s (Griggs 2012). In areas with suitable soils and hydrology, 1,093 ha (2,700 ac.) of Refuge land have been restored to riparian vegetation through the planting of native Fremont cottonwood (*Populus fremontii*), arroyo willow (*Salix lasiolepus*), black willow (*Salix nigra*), blue elderberry, coyote bush, Oregon ash (*Fraxinus latifolia*), and valley oak trees and by planting forbs and shrubs to establish an understory of mugwort, gumplant, and wild rye (*Elymus* sp.) (Griggs 2012). Within a few years of establishment, restored areas could support riparian brush rabbits. Along with riparian restoration, 34 flood refuge bunny mounds elevated approximately ten feet above the surrounding land were constructed on the Refuge. These refugia were planted with native tree and shrub species to provide food and cover to rabbits stranded by flood events (Griggs 2012, Kelly 2018).

The Refuge encompasses 324 ha. (800 ac.) of native riparian brush rabbit habitat and an additional 1,093 ha (2,700 ac.) of restored riparian forest at various stages of maturity. River Partners currently owns an additional 850 ha. (2,100 ac.) of riparian land at various states of restoration near the Tuolumne River - San Joaquin River confluence with the intent of annexing the land to the Refuge (Eric Hopson pers. comm. 8/27/2019). The USFWS was recently authorized to expand the Refuge by an additional 4,346 ha. (10,738 ac.) including approximately 3,440 ha (8,500 ac.) of additional riparian habitat (USFWS 2014). The authorized expansion includes lands extending approximately 34 km (21 m.) south from the existing Refuge boundary to provide connection to the Department's China Island Unit of the North Grasslands Wildlife Area (USFWS 2016). The North Grasslands is part of the Grasslands Ecological Area, a 64,750 ha (160,000 ac.) mosaic of protected San Joaquin River floodplain between Interstate 5 and State Highway 99 in Merced County. The area is a network of freshwater marshes (permanent and seasonal), alkali grassland, and riparian thickets conserved through conservation agreements with private duck clubs and land acquisitions by California State Parks (Great Valley Grasslands, Hatfield State Recreation Area), the Department (Volta, Los Banos, and North Grasslands Wildlife Areas), and the USFWS (San Luis and Merced National Wildlife Refuges and Grasslands Wildlife Management Area). Although only limited areas of the Grasslands Ecological Area are covered with riparian shrubs or forest, future expansion of the Refuge to connect to the ecological area would provide potential opportunities for riparian brush rabbits to disperse and significantly expand the area occupied by the subspecies.

The creation of the Refuge, ongoing riparian habitat restoration on the Refuge, and the continued expansion of the Refuge, coupled with the Refuge's role in the captive propagation program has greatly improved the viability of the riparian brush rabbit subspecies, although rabbits on the Refuge remain at substantial risk from flooding, fires, and other threats (Wittmer et al. 2016, Kelly 2018).

#### iii. Regional Habitat Conservation Plans

Areas of the riparian brush rabbit occupied range are covered by habitat conservation plans. Habitat conservation plans are regional plans approved by the USFWS that allow for regional development and specify avoidance, minimization, and mitigation measures for sensitive species. Habitat conservation plans can be used by signatories to authorize take of federally listed species under § 10(a)(1)(B) of the Endangered Species Act. The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan covers the entire range of the riparian brush rabbit north of the Stanislaus-San Joaquin County line. Riparian brush rabbits are covered in the Plan, but the Plan does not authorize any take of the subspecies nor does it authorize the conversion of occupied habitat (San Joaquin Council of Governments 2000). Over the 50-year life of the plan, no more than 1.2 ha (3 ac.) of potential riparian brush rabbit habitat may be converted to other uses. Therefore, the riparian brush rabbit is protected from direct development-related impacts; however, other conversions of agricultural land to industrial and residential uses authorized under the plan effectively precludes opportunities for the future restoration of currently unoccupied lands and may limit opportunities for expanding occupancy in the County.

The Pacific Gas and Electric Company's (PG&E) San Joaquin Valley Operation & Maintenance Habitat Conservation Plan covers PG&E's lands, and gas and electrical transmission and distribution facilities on 111,835 ha (276,350 ac.) of the San Joaquin Basin (PG&E 2007). This Plan authorizes temporary and permanent impacts to a total of 0.6 ha (1.5 ac.) of riparian brush rabbit habitat over the 30-year life of the Plan. All activities are precluded from areas within 30.5 m (100 ft.) of occupied habitat as determined by a qualified biologist. Therefore, activities authorized under the Plan are unlikely to result in significant impacts to the riparian brush rabbit subspecies.

## iv. Caswell Memorial State Park

A Resources Management Plan for the Sensitive Species of Caswell Memorial State Park was prepared by the California Department of Parks and Recreation in 1989 (Blankenship 1989). Portions of the plan related to riparian brush rabbits were largely based on the recommendations in Ecology and Management of the Riparian Brush Rabbit in Caswell Memorial State Park (Williams 1988). Actions in the plan include biannual monitoring of the local riparian brush rabbit population, control of feral cats and dogs, improving fuel breaks and fire lanes, and constructing flood refugia mounds. Caswell Park has been unable to implement riparian brush rabbit management activities in recent years because management funds are extremely limited and the status of the Caswell Park local population is currently unknown (Patrick Kelly pers. comm. 8/28/2019; Heather Reith, pers. comm. 8/29/2019).

# B. Recommendations for Management Activities and Other Recommendations for Recovery of the Species

The Department's recovery objective remains unchanged from the 1993 Status Review: the protection and expansion of the existing subspecies population and reintroduction of a sufficient number of additional viable riparian brush rabbit populations in restored and permanently protected sites to insure their long-term survival within their native habitat and range. In order to achieve recovery, the remaining populations and any reintroduced populations must be free from significant threats, protected, monitored, and proven to be self-sustaining to the satisfaction of the Department and the Commission. The below management activities and recommendation are believed to be the most urgently needed to further the recovery of the riparian brush rabbit at this time.

#### i. Establishment of Additional Flood-secure Populations

The largest extant local riparian brush rabbit population on the Refuge is highly exposed to catastrophic flooding events, which are projected to become more frequent and severe. Other occupied areas in Caswell Park, the lower San Joaquin River, and the South Delta are also at risk from flooding. Bunny mounds and vegetated levees do not provide enough cover or forage to sustain large numbers of rabbits through prolonged flood events. There is an urgent need to establish riparian brush rabbit populations in large patches of high elevation suitable upland habitat. To achieve this goal the Refuge should consider acquiring high elevation parcels with potential to support riparian shrub and tree communities through the Refuge expansion process. Additionally, state and federal agencies should explore conservation easements and

management agreements with owners of high elevation land adjacent to occupied habitat to incentivize the establishment of brush rabbit cover and forage on portions of their land to act as refugia during flood events. Refuge staff should opportunistically translocate riparian brush rabbits to currently unoccupied areas of restored habitat within the Refuge such as the Dos Rios Ranch near the Tuolumne Confluence when animals are salvaged during flood events. Finally, state and federal wildlife managers should explore translocation of rabbits to suitable habitat on other refuge units such as the San Luis National Wildlife Refuge, the West Hilmar State Wildlife Area and units of the North Grasslands State Wildlife Area. Until large patches of suitable habitat above flood elevation can be secured, the limited existing high elevation flood refugia (e.g. bunny mounds and levees) should be planted with a mix of species selected to provide high quality forage during the typical mid-winter to early summer inundation period.

## ii. Secure South Delta Populations

South Delta local populations continue to be under threat from habitat loss and fragmentation related to residential and commercial development and flood control projects. Very little of this genetically distinct population area currently exists on protected conservation lands. State and federal agencies should endeavor to acquire fee title or conservation easements from willing sellers to protect existing suitable habitat and to restore habitat on multiple large parcels with an emphasis on conserving genetically representative local populations.

## iii. Complete a Recovery Plan

Prior to the subspecies' listing under the federal ESA, riparian brush rabbits were covered in the Recovery Plan for the Upland Species of the San Joaquin Valley (USFWS 1998). However, the plan did not include recovery criteria, and the plan was written prior to the captive propagation and translocation effort. The Department is authorized, contingent upon available funding, to develop and implement nonregulatory recovery plans for the conservation and survival of threatened and endangered species (Fish and G. Code § 2079.1(a)). An up to date recovery plan is needed to set goals and objectives and guide management actions for the recovery of the subspecies. Targets for the minimum number of viable populations, geographic distribution, and genetic conservation should be included in the plan, along with criteria for de-listing. The Department should consider collaborating with the USFWS to develop a joint recovery plan which satisfies the requirements of both agencies.

# iv. Basic Research on Biology and Ecology

Basic information on the status of the riparian brush rabbit subspecies population and on riparian brush rabbit biology is needed to inform a recovery plan and to guide management. Wittmer et al. (2016) identified the need for research on the interaction between habitats and food availability, rabbit movement patterns, context-dependent predation, and the vital rates of established rabbit populations to inform population viability models. Other identified information needs include detailed studies of riparian brush rabbit diets (e.g. DNA analysis of scat contents and/or feeding trials) to inform planting of high elevation flood refugia, habitat restoration efforts, and land acquisition priorities (Patrick Kelly pers comm. 8/28/2019, Kim Forrest pers. comm. 9/20/2019). In order to inform management efforts to minimize competition between riparian

brush rabbits and desert cottontails, studies of the mechanisms that separate the respective ecological niches the two species are needed. In addition, development of rigorous and efficient surveying and monitoring techniques is needed to monitor the distribution and status of the riparian brush rabbit population (Kim Forrest pers. comm. 9/20/2019).

## v. Fuel Management on Caswell Memorial State Park

The riparian brush rabbit habitat provided by the dense, mature, riparian forests of Caswell Park is at high risk of severe wildfire due to the accumulation of fuels at multiple canopy levels. Managing the fuel load in the Park will require carefully balancing the need to reduce the risk of catastrophic habitat loss from wildfire with the risks of degrading currently suitable habitat and fragmenting habitat patches through fuel treatments. The California Department of Parks and Recreation possesses management plans to accomplish these goals, but the agency lacks the funding to implement fuel reduction projects (Heather Reith pers. comm. 8/29/2019). Secure funding for fuels management within the Park is needed.

## vi. Update Closed Hunting Zone

California Code of Regulations Title 14 §308(d) which prohibits the take of brush rabbits and cottontail rabbits in portions of San Joaquin County was added to California Code in 2002 with the intent of protecting riparian brush rabbits from hunting take. Since that time, riparian brush rabbits have been detected in additional areas outside of the hunting closure zone. The Department should consider updating the closure zone description such that it encompasses all known occupied habitat and present a regulation change proposal to the California Fish and Game Commission for consideration.

# **VII. RECOMMENDATION TO THE COMMISSION**

Pursuant to Fish and Game Code section 2077, the Department has prepared this Five-Year Status Review based upon the best scientific information available to the Department to determine if conditions that led to the original listing are still present. Based on this Five-Year Status Review, the Department submits the following recommendation to the Commission:

In completing this Five-Year Status Review for riparian brush rabbit, the Department finds there is sufficient scientific information to indicate that the conditions that led to the listing of the riparian brush rabbit as endangered are still present. The riparian brush rabbit subspecies population is threatened by catastrophic floods, wildfires, threats related to small populations, predation, diseases, rodenticides, and climate change impacts. The Department recommends no change to the status of riparian brush rabbit on the list of endangered species at this time.

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Received on February 6, 2020 Signed copy on file.

# Memorandum

Date: January 31, 2020

- To: Melissa Miller-Henson Executive Director Fish and Game Commission
- From: Charlton H. Bonham Director

#### Subject: Evaluation of a Petition to List the Southern California/Central Coast Evolutionarily Significant Unit (ESU) of Mountain Lion as Threatened under the California Endangered Species Act

The California Department of Fish and Wildlife (Department) has completed its evaluation of a Petition to list the proposed Southern California/Central Coast Evolutionarily Significant Unit (ESU) of Mountain Lion as a threatened species under the California Endangered Species Act, Fish and Game Code section 2050 et seq. The California Fish and Game Commission (Commission) received the Petition from The Center for Biological Diversity and The Mountain Lion Foundation on June 25, 2019. Pursuant to Fish and Game Code section 2073, the Commission referred the Petition to the Department on July 5, 2019. In accordance with Fish and Game Code section 2073.5, subdivision (b), in August 2019 the Department requested, and the Commission approved, a 30-day extension to complete its evaluation report.

The Department completed the attached Petition Evaluation report pursuant to Fish and Game Code section 2073.5. (See also Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1).). The Department's evaluation report delineates the categories of information required in a petition, evaluates the sufficiency of the available scientific information regarding each of the Petition components, and incorporates additional relevant information the Department possessed or received during the review period. Based upon information contained in the petition and other relevant information in the Department's possession, the Department has determined there is sufficient scientific information available at this time to indicate the petitioned action may be warranted. The Department recommends the Petition be accepted and considered.

If you have any questions or need additional information, please contact Ms. Kari Lewis, Wildlife Branch Chief, at (916) 445-3789 or by email at Kari.Lewis@wildlife.ca.gov.

Attachment

Melissa Miller-Henson, Executive Director Fish and Game Commission January 31, 2020 Page 2 of 2

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## REPORT TO THE FISH AND GAME COMMISSION

## EVALUATION OF A PETITION FROM THE CENTER FOR BIOLOGICAL DIVERSITY AND THE MOUNTAIN LION FOUNDATION TO LIST THE SOUTHERN CALIFORNIA/CENTRAL COAST EVOLUTIONARILY SIGNIFICANT UNIT (ESU) OF MOUNTAIN LIONS AS THREATENED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT



Photo: Donna Krucki

Prepared by California Department of Fish and Wildlife

Final Review Draft January 31, 2020



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## I. Executive Summary

The Center for Biological Diversity and the Mountain Lion Foundation (Petitioners) submitted a Petition (Petition) to the Fish and Game Commission (Commission) to list a Southern California/Central Coast Evolutionarily Significant Unit (ESU) of mountain lions (Puma concolor), or one or more of the six subpopulations, singularly or in combination within the proposed ESU as threatened or endangered pursuant to the California Endangered Species Act (CESA), Fish and Game Code Section 2050 et seq.

The Commission referred the Petition to the Department of Fish and Wildlife (Department) in accordance with Fish and Game Code Section 2073 (Cal. Reg. Notice Register 2019, No. 30-Z, p. 1086). Pursuant to Fish and Game Code section 2073.5 and California Code of Regulations, title 14, section 670.1, the Department prepared this evaluation report (Petition Evaluation) of the Petition. The purpose of the Petition Evaluation is to assess the scientific information discussed and cited in the Petition in relation to other relevant and available scientific information possessed or received by the Department during the evaluation period and to recommend to the Commission whether the scientific information in the Petition is sufficient under the criteria prescribed by CESA to accept and consider the Petition to list the mountain lions within the proposed ESU as threatened or endangered.

After reviewing the Petition and other relevant information, the Department determined the following:

- <u>Population Trend</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition indicated the overall population trend for the proposed ESU of mountain lions has declined, and continues to decline, with six genetically distinct subpopulations identified within the proposed ESU.
- <u>Range</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition contains a detailed description and maps of the geographic range of mountain lions within the proposed ESU.
- <u>Distribution</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition discusses the distribution of mountain lions within the proposed ESU and

demonstrates a reduction in their distribution due to habitat loss, conversion, and fragmentation throughout much of the historical range, along with habitat degradation and near isolation for some subpopulations due to major highways.

- <u>Abundance</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition contains a description of abundance estimates for mountain lions in the proposed ESU based on several recent tracking and genetic studies. Scientific publications from these studies indicate small subpopulation sizes.
- <u>Life History</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition describes life history of the mountain lion, including taxonomy, biology, reproduction, diet, foraging ecology, habitat requirements, survivorship, and home range size. Additionally, evidence of potential inbreeding depression for some subpopulations is described.
- <u>Kind of Habitat Necessary for Survival</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition describes habitat types, home range requirements, prey resources, and other conditions necessary for viable mountain lion populations. The importance of functional movement corridors between habitat patches, preservation of existing habitat, and adequate buffers from effects of human development, roads, and highways are described.
- <u>Factors Affecting the Ability to Survive and Reproduce</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition presents information to indicate that mountain lions within the proposed ESU have experienced habitat loss and habitat fragmentation leading to small, isolated subpopulations with a lack of adequate gene flow between them. The genetic diversity of some small subpopulations in the proposed ESU is nearly as low as a federally endangered subspecies, the Florida panther (*Puma concolor coryi*). Additionally, other sources of human-caused mortality, such as vehicle strikes, and deterioration or destruction of movement corridors may affect the ability of mountain lions to

survive and reproduce.

- <u>Degree and Immediacy of Threat</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition discusses the threats to long-term survival of mountain lions within the proposed ESU and states the threats will continue to worsen due to development, coupled with associated roads and other infrastructure that reduces habitat size and quality, and leads to a decrease in habitat connectivity. These threats may contribute to the loss of genetic diversity and further increase the risk of inbreeding depression, which can compromise long term population viability.
- Impact of Existing Management Efforts. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition discusses how existing regulatory mechanisms and management efforts do not adequately protect mountain lions within the proposed ESU from impacts that threaten their long-term survival. In particular, the Petition indicates that land use planning and habitat conservation needs to occur at a larger scale and include habitat connectivity for mountain lions and their prey, while also lessening human-caused mortality factors such as vehicle strikes, and depredation take.
- <u>Suggestions for Future Management</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition includes potential management actions that would benefit mountain lions (e.g., wildlife crossing structures over or under freeways and major roads), and cites studies that contain a number of suggestions for future management (e.g., better land use planning for sufficient habitat connectivity and gene flow, and for conservation of prey species).
- <u>A Detailed Distribution Map</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition contains a detailed distribution map of mountain lion populations within the proposed ESU and adjacent populations in California and Nevada.
- <u>Availability and Sources of Information</u>. The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that

it include sufficient scientific information to indicate the petitioned action may be warranted. More than 140 references were cited in the Petition and the Petitioner provided portable document file (.pdf) copies of the majority of the referenced documents to the Commission.

The Department's Petition Evaluation focuses on analyses of the scientific information provided in the Petition, as well as additional scientific information the Department possesses, or has knowledge of, regarding mountain lion populations including populations within the proposed ESU.

In completing its Petition Evaluation, the Department has determined the Petition provides sufficient scientific information to indicate the petitioned action may be warranted. Therefore, the Department recommends the Commission accept the Petition for further consideration pursuant to Fish and Game Code section 2074.2.

## II. Introduction

## A. Candidacy Evaluation

The Commission has the authority to list certain "species" or "subspecies" as threatened or endangered under CESA. (Fish & G. Code, §§ 2062, 2067, 2070.) The listing process is the same for species and subspecies. (Fish & G. Code, §§ 2070-2079.1.)

CESA sets forth a two-step process for listing a species as threatened or endangered. First, the Commission determines whether to designate a species as a candidate for listing by evaluating whether the petition provides "sufficient information to indicate that the petitioned action may be warranted." (Fish & G. Code, § 2074.2, subd. (e)(2).) If the petition is accepted for consideration, the second step requires the Department to produce, within 12 months of the Commission's acceptance of the petition, a peer reviewed report based upon the best scientific information available that advises the Commission whether the petitioned action is warranted. (Fish & G. Code, § 2074.6.) Finally, the Commission, based on that report and other information in the administrative record, then determines whether the petitioned action to list the species as threatened or endangered is warranted. (Fish & G. Code, § 2075.5.)

A petition to list a species under CESA must include "information regarding the population trend, range, distribution, abundance, and life history of a species, the factors affecting the ability of the population to survive and reproduce, the degree and immediacy of the threat, the impact of existing management efforts, suggestions for future management, and the availability and sources of information. The petition shall also include information regarding the kind of habitat necessary for species survival, a detailed distribution map, and any other factors that the petitioner deems relevant." (Fish & G. Code, § 2072.3; see also Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1).) The

range of a species for the Department's petition evaluation and recommendation is the species' California range. (Cal. Forestry Assn. v. Cal. Fish and Game Com. (2007) 156 Cal. App. 4th 1535, 1551.)

Within 10 days of receipt of a petition, the Commission must refer the petition to the Department for evaluation. (Fish & G. Code, § 2073.) The Commission must also publish notice of receipt of the petition in the California Regulatory Notice Register. (Fish & G. Code, § 2073.3.) Within 90 days of receipt of the petition (or 120 days if the Commission grants an extension), the Department must evaluate the petition on its face and in relation to other relevant information and submit to the Commission a written evaluation report with one of the following recommendations:

- Based upon the information contained in the petition, there is not sufficient information to indicate that the petitioned action may be warranted, and the petition should be rejected; or
- Based upon the information contained in the petition, there is sufficient information to indicate that the petitioned action may be warranted, and the petition should be accepted and considered.

(Fish & G. Code, § 2073.5, subds. (a)-(b).) The Department's candidacy recommendation to the Commission is based on an evaluation of whether the petition provides sufficient scientific information relevant to the petition components set forth in Fish and Game Code Section 2072.3 and the California Code of Regulations, Title 14, Section 670.1, subdivision (d)(1).

In Center for Biological Diversity v. California Fish and Game Commission (2008) 166 Cal.App.4th 597, the California Court of Appeals addressed the parameters of the Commission's determination of whether a petitioned action should be accepted for consideration pursuant to Fish and Game Code Section 2074.2, subdivision (e), resulting in the species being listed as a candidate species. The court began its discussion by describing the standard for accepting a petition for consideration previously set forth in Natural Resources Defense Council v. California Fish and Game Commission (1994) 28 Cal.App.4th 1104:

As we explained in Natural Resources Defense Council, "the term 'sufficient information' in section 2074.2 means that amount of information, when considered with the Department's written report and the comments received, that would lead a reasonable person to conclude the petitioned action may be warranted." The phrase "may be warranted" "is appropriately characterized as a 'substantial possibility that listing could occur." "Substantial possibility," in turn, means something more than the

one-sided "reasonable possibility" test for an environmental impact report but does not require that listing be more likely than not.

(Center for Biological Diversity, supra, 166 Cal.App.4th at pp. 609-10 [internal citations omitted].) The court acknowledged that "the Commission is the finder of fact in the first instance in evaluating the information in the record." (Id. at p. 611.) However, the court clarified:

[T]he standard, at this threshold in the listing process, requires only that a substantial possibility of listing could be found by an objective, reasonable person. The Commission is not free to choose between conflicting inferences on subordinate issues and thereafter rely upon those choices in assessing how a reasonable person would view the listing decision. Its decision turns not on rationally based doubt about listing, but on the absence of any substantial possibility that the species could be listed after the requisite review of the status of the species by the Department under [Fish and Game Code] section 2074.6.

# (Ibid.)

# B. Petition History

The Petitioner is soliciting review for a threatened or endangered species determination of a proposed Southern California/Central Coast Evolutionarily Significant Unit (ESU) of mountain lions (Puma concolor), or one or more of the six subpopulations, singularly or in combination within the proposed ESU as threatened or endangered pursuant to the California Endangered Species Act (CESA), Fish and Game Code Section 2050 et seq.

On June 25, 2019, the Commission received a petition to list the Southern California/Central Coast ESU of mountain lions under CESA. On July 5, 2019, the Commission referred the Petition to the Department for evaluation. In August 2019, the Department requested, and the Commission granted, a 30-day extension of the 90-day Petition evaluation period. The Department submitted this Petition Evaluation report to the Commission on January 31, 2020.

The Department evaluated the scientific information presented in the Petition as well as other relevant information the Department possessed at the time of review. The Commission did not receive new scientific information from the public during the Petition Evaluation period pursuant to Fish and Game Code section 2073.4. Pursuant to Fish and Game Code section 2072.3 and California Code of Regulations, title 14, section 670.1, subdivision (d)(1), the Department evaluated whether the Petition included sufficient scientific information regarding each of the following petition components to indicate whether the petitioned action may be warranted:

- Population trend.
- Range.
- Distribution.
- Abundance.
- Life history.
- Kind of habitat necessary for survival.
- Factors affecting the ability to survive and reproduce.
- Degree and immediacy of threat.
- Impact of existing management efforts.
- Suggestions for future management.
- A detailed distribution maps.
- Availability and sources of information; and
- C. Overview of Mountain Lion Ecology

Mountain lions (Puma concolor) belong to the order Carnivora and are members of the cat family Felidae. Common names are many and include puma, cougar, or panther. In California, mountain lions can range from near sea level to the higher mountain slopes and some desert areas (Grinnell et al. 1937, Young and Goldman 1946). Although they occur at low densities, they were once widespread in North America (Pierce and Bleich 2003). Adults are large and slender with short muscular limbs and a long black-tipped tail that is about one third of the animal's total length. Males are typically larger than females. Male mountain lions generally weigh 121 to 143 pounds (55 to 65kg) with a length of 7.2 to 7.5 feet (2.2 to 2.3m) from nose to tail tip, and female lions generally weigh 77 to 99 pounds (35 to 45kg) with a length of 6.6 to 6.9 feet (2.0 to 2.1m) (Currier 1983).

Mountain lions reach sexual maturity at two to four years of age, and females care for their young for one to two years. They have a polygynous social structure, and males do not contribute to rearing young. Mates likely locate each other with auditory and olfactory signals (Currier 1983). Gestation lasts 82 to 96 days (Young and Goldman 1946, Currier 1983). Litter size ranges from one to six, though two to four kittens per litter are typical (Pierce and Bleich 2003, Beier et al 2010, Riley et al. 2014). Denning mountain lions have been found to avoid roads and stay at a distance from human disturbance four times greater than non-reproductive mountain lions (Wilmers et al. 2013).

Large ungulates, especially deer, are the preferred prey of mountain lions, making up about 70% of their diet. However, mountain lions are opportunistic predators, and they have been documented eating a wide variety of other large and smaller prey, including moose, elk, wild horses, burros, pronghorn antelope, bighorn sheep, mountain goats, wild pigs, coyotes, bobcats, porcupines, fishers, badgers, rabbits, raccoons, rodents, turkeys, and livestock (Currier 1983, Iriarte et al. 1990, Wengert et al. 2014, Allen et al. 2015, Garcelon unpublished data).

Mountain lions are primarily solitary, territorial, and occur in low density. They require large areas of relatively undisturbed habitat with adequate prey abundance, and habitat connectivity to allow for successful dispersal and gene flow. They have large home ranges that include heterogenous habitats including riparian, chaparral, oak woodlands, coniferous forests, grasslands, and occasionally in rocky desert uplands (Grinnell 1914, Grinnell et al. 1937, Williams 1986, Dickson et al. 2005, McClanahan et al. 2017).

As a top carnivore with no natural predators, predation by other mountain lions and death due to human activity, such as vehicle strikes and depredation take, are the main drivers of mountain lion mortality (Grinnell et al. 1937, Beier and Barrett 1993, Wilmers et al. 2013, Riley et al. 2014, Vickers et al. 2015). Weaver (1982) also noted the gradual reduction of mountain lion habitat over time as a concern.

III. Sufficiency of Scientific Information to Indicate the Petitioned Action May Be Warranted

The Petition components are evaluated below, with respect to Fish and Game Code section 2072.3 and California Code of Regulations, title 14, section 670.1, subdivision (d)(1).

#### A. Population Trend

1. Scientific Information in the Petition

The Petition discusses mountain lion population status and trend on pages 34 through 40 and presents past population estimates made by the Department (see Abundance section below). Population trend is difficult to determine without estimates of population size for various years. The Petition acknowledges a lack of population trend data and therefore relies upon habitat mapping coupled with known distribution of mountain lions, along with estimated population sizes for the six subpopulations within the proposed ESU. The estimated mountain lion population sizes are based on field studies and recent genetic information which suggest a negative population trend (Ernest et al. 2003, Ernest et al. 2014, Benson et al. 2016, Gustafson et al. 2017, Gustafson et al. 2018, Benson et al. 2019).

The proposed ESU, as described in the Petition, includes six genetic subpopulations of mountain lions: 1) Central Coast North (CC-N), which includes the Santa Cruz Mountains; 2) Central Coast Central (CC-C), generally from southern Monterey Bay to the Ventura area; 3) Central Coast South (CC-S), which includes the Santa Monica

Mountains; 4) San Gabriel/San Bernardino Mountains (SGSB); 5) Santa Ana Mountains (SAM); and 6) Eastern Peninsular Range (EPR), which includes eastern San Diego County to the Colorado River and is bounded on the north by Interstate 15 (Petition Figure ES 1). The heavy black line surrounding the six genetic subpopulations outlines the proposed ESU boundary. Interstate freeways and major highways are utilized to define the proposed ESU boundary from a habitat and management perspective while also factoring in known distribution of mountain lions, and recognizing the need to maintain gene flow between the relatively large Western Sierra Nevada population of mountain lions and the smaller genetic subpopulations in the proposed ESU.

The Petition notes mountain lion populations in the Western Sierra Nevada (WSN) and Eastern Sierra Nevada (ESN) were the greatest genetic source populations, but exhibited limited gene flow with lion subpopulations along the central coast of California (CC-N, CC-C, CC-S), and neither Nevada (NV) or the North Coast (NC) mountain lions exhibited appreciable gene flow with central coast populations (Petition Figure ES 1). The SAM population exhibited gene flow only with the EPR population, and the EPR population had low connectivity with the SGSB population. The mountain lion population in the Transverse Ranges (SGSB) was the largest genetic sink but exchanged some genetic material with the WSN, CC-C, and EPR populations. Populations in the southern mountain ranges (SAM, EPR) were largely disconnected from all other populations (Gustafson et al. 2018).



#### Petition Figure ES 1.

Map of genetically distinct mountain lion populations and major roadways in California based on data collected from 1992-2016 (the division and status of these populations could change over time and with further research). The black lines show the proposed Southern California/Central Coast ESU boundary. Derived from Gustafson et al. (2018). Genetics data source: Kyle Gustafson, PhD, Department of Biology and Environmental Health, Missouri Southern State University, and Holly Ernest, DVM, PhD, Department of Veterinary Sciences, Program in Ecology, University of Wyoming, Laramie. Roads data source: ESRI.

As discussed earlier, genetic samples of mountain lions have allowed population size estimates to be made for the proposed ESU subpopulations by using current genetic analysis techniques (Ernest et al. 2003, Ernest et al. 2014, Gustafson et al. 2017, Gustafson et al. 2018). The results of the analyses are presented below for the six mountain lion subpopulations in the proposed ESU (Petition Table 1). Mountain lion population estimates in the table depict the ratio of effective population size (Ne) to total adult population size (Ne/N). Effective population size generally refers to the breeding adults in a population, in recognition of the fact that all adult animals in a population may not breed.

## Petition Table 1.

Population	Effective Population Size (N <sub>c</sub> )	Estimated Total (Adult) Population (N) <sup>1</sup>
Central Coast North (CC-N)	16.6	33-66
Central Coast Central (CC-C)	56.6	113-226
Central Coast South (CC-S)	2.7 <sup>2</sup>	5-10
Santa Ana Mountains (SAM)	15.6 <sup>3</sup>	31-62
San Gabriel/ San Bernardino Mountains (SGSB)	5	10-20
Eastern Peninsular Range (EPR)	31.6	63-126
Total		255-510

**Table 1.** Effective population size and estimated total adult population of Central Coast and Southern California

 Mountain Lion Populations from Gustafson et al. (2018).

<sup>1</sup>Calculations are based on the estimated ratio of effective to total adult population size (Ne/N) of Florida panthers being 0.25 to 0.5 (Ballou et al. 1989). This ratio was used in the U.S. Fish and Wildlife Service Florida Panther Recovery Plan (USFWS 2008). Petitioners recognize that these derived population estimates, while informative, are not definitive and will likely be superseded by new population estimates being developed by the Department (CDFW 2018a).

<sup>2</sup>Benson et al. (2019) calculated an Ne of 4 for the Santa Monica Mountains population within the CC-S. Applying the Ballou et al. (1989) factors would lead to an estimate of 8-16 mountain lions in this area, which is roughly consistent with current estimates of this well-monitored population.

<sup>3</sup>Several studies provide Ne calculation for the SAM population. Ernest et al. (2014) calculated an Ne of 5.1 and Benson et al. (2019) calculated an Ne of 6. Applying the Ballou et al. (1989) factors to the most recent calculation would lead to an estimate of 12-24 mountain lions in the SAM, which is roughly consistent with current estimates.

The Petitioners also acknowledged the Ne/N methodology has limitations and is but one method of generating an overall abundance estimate. Studies are needed to more accurately determine regional and statewide mountain lion population size and trend, but most of the genetic subpopulations within the proposed ESU are struggling with low population sizes, and genetic near-isolation leading to low genetic diversity which puts them at increased risk of extinction (Beier 1993, Beier 1995, Dickson et al. 2005, Ernest et al. 2014, Riley et al. 2014, Vickers et al. 2015, Benson et al. 2016, Gustafson et al. 2018, Benson et al. 2019).

The Petition noted that due to extreme isolation caused by roads and development, the SAM and CC-S populations exhibit high levels of inbreeding, and with the exception of the endangered Florida panther, have the lowest genetic diversity observed for the species globally (Ernest et al. 2014, Riley et al. 2014, Gustafson et al. 2018, Benson et al. 2019). The SGSB and CC-N similarly have low observed genetic diversity and effective population sizes, and the mountain lions occupy areas of significant isolation and habitat fragmentation, which also increases their risk for inbreeding depression (Gustafson et al. 2018).

Two long-term studies on radio-collared mountain lions in the SAM provide some insight into population trend for that small population (Beier 1993, Vickers et al. 2015). In a study that consisted of 32 radio-collared lions in the SAM from 1988 to 1993, researchers found a 75% adult survival rate (Beier and Barrett 1993), which is similar to adult survival rates in other populations, e.g., the CC-S population (Riley et al. 2014). However, in a second, more recent study conducted in the SAM, 31 mountain lions were marked from 2001 to 2013 and researchers found a reduced survival rate of 56.5% across all sexes and age groups (Vickers et al. 2015).

2. Conclusion

The petition includes a discussion of the available peer reviewed scientific information on mountain lion population trends. The petition on its face includes sufficient information to indicate the petitioned action may be warranted. The population trend information in the petition is based on an emerging methodology that will require further evaluation to assess the population trend of the proposed ESU that is the subject of the petitioned action.

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition provided adequate information to indicate mountain lion populations in the proposed ESU have declined since the historical period based on known habitat loss and fragmentation, loss and reduction of habitat connectivity, and human-caused mortality factors (vehicle strikes, and depredation

take). The Petition also presents results of field and genetic studies that indicate low effective population sizes, low genetic diversity, and evidence of inbreeding.

## B. Geographic Range

1. Scientific Information in the Petition

Information regarding geographic range is discussed on pages 30 through 33 of the Petition and indicates a decline in range based on habitat loss and fragmentation due to development. The Petition included a map to depict the constraints on mountain lion dispersal and gene flow between habitat patches within the proposed ESU, and for southern California mountain lion habitat in particular (Petition Figure 8). The Petition describes the major roads and Interstate freeways displayed as obstacles and potential sources of mortality for foraging and dispersing mountain lions that also contribute to reduction in geographic range. The urbanized landscape and highway network may also restrict mountain lion immigration into the southern California mountain lion populations from the more genetically diverse WSN and EPR subpopulations.

The Petition describes that the highly urbanized zone spreading out from the greater Los Angeles area, and generally continuing down the coastal zone to San Diego county demonstrates the habitat isolation problem for the CC-S, SGSB, and SAM mountain lion populations (Vickers et al. 2015, Benson et al. 2016, Gustafson et al. 2018, Benson et al. 2019). The EPR population is also affected by human development and road networks, but to a slightly lesser degree than the aforementioned three smaller populations. CC-N mountain lion populations are likewise losing geographic range and being constricted by development and highways in the Santa Cruz Mountains and the southern San Francisco Bay Area (Wilmers 2014, Wang et al. 2017).

Reduction in geographic range is expected to continue for mountain lions in southern California. A study of geographic range for mountain lions in the SAM and EPR subpopulations showed that nearly half of lion habitat in the study area is on private land, and approximately 1/3 of those lands available in 1970 will be developed by 2030. Additionally, some habitat that is currently adjacent to development may become fragmented, with potential loss of connectivity and increased risk to mountain lions from vehicle strikes and depredation take. Most additional suburban and urban development projected for 2030 will occur in areas that were classified as undeveloped or rural in 2000, but 2% of the current exurban area will be converted to suburban/urban (Burdett et al. 2010).

The Petition notes that although genetic subpopulations have been identified in southern California mountain ranges, mountain lions have been detected outside of the CC-S, SAM, SGSB, and EPR core areas, including transient and resident mountain lions in the Mojave and Colorado deserts and along the lower Colorado River (Grinnell

1914, Grinnell et al. 1937, Young and Goldman 1946, Williams 1986, Kucera 1998, Dellinger et al. 2019 in press). Mountain lions have also been documented within approximately 40 miles of the Colorado River on the Kofa National Wildlife Refuge in Arizona (Smythe 2008).



**Petition Figure 8.** Map of genetically distinct mountain lion populations and major roads in California. The CC-S (which includes the Santa Monica Mountains), SGSB, and SAM populations are exceptionally constrained. The map is based on data collected from 1992-2016 (the division and status of these

populations could change over time and with further research). Derived from Gustafson et al. (2018). Genetics data source: Kyle Gustafson, PhD, Department of Biology and Environmental Health, Missouri Southern State University, and Holly Ernest, DVM, PhD, Department of Veterinary Sciences, Program in Ecology, University of Wyoming, Laramie. Roads data source: ESRI.

The Yuma mountain lion (Puma concolor browni) is designated by the Department as a subspecies of special concern (Williams 1986, Kucera 1998, CDFW 2019). However, McIvor et al. (1995) and Culver et al. (2000) detected little morphological or genetic support for retention of the P.c. brownii subspecies. Until the genetic structure of desert lions is analyzed via newer genomic techniques, it is difficult to determine how important these southeastern California lions are to the genetic makeup of the EPR subpopulation, or if the western part of northern Mexico is a primary genetic source for the EPR lions. This unique area of California is discussed further in the Distribution section, below.

The desert lion populations occur in low densities, likely due to lower quality habitat and lower prey abundance. The Petition includes these low-density transients and resident lions within the proposed ESU.

2. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition presented adequate information on habitat loss and fragmentation to demonstrate a decline in the geographic range of mountain lions in the proposed ESU.

- C. Distribution
  - 1. Scientific Information in the Petition

The Petition discusses current and historical distribution on pages 30 through 33.

As discussed earlier in this Petition Evaluation, mountain lions occur from near sea level to the higher mountain slopes and some desert areas in California (Grinnell et al. 1937, Young and Goldman 1946). They have large home ranges that include heterogenous habitats including riparian, chaparral, oak woodlands, coniferous forests, grasslands, and occasionally in rocky desert uplands (Grinnell 1914, Grinnell et al. 1937, Williams 1986, Dickson et al. 2005, McClanahan et al. 2017). However, mountain lions have a limited distribution in the Central Valley, which could relate to lower availability of deer, their primary prey source. Early agricultural development and loss of riparian habitat, along with other development and habitat loss in the Central Valley may also be a factor in their scarcity in this region of the state, though dispersing lions have occasionally been documented in the Central Valley. Mountain lions were recently detected via

wildlife cameras in the northern Central Valley near Butte Sink where some riparian habitat is still present (McClanahan et al. 2017).

In regard to the EPR subpopulation in southern California, the Petition states that limited studies have occurred regarding the northern, southern, and eastern extent of the lion population, genetic studies on the Yuma mountain lion are limited, and no samples were obtained from that area for the study conducted by Gustafson et al. (2018). However, movement patterns between 2001 and 2016 suggest that EPR mountain lions generally stay north of the U.S. – Mexico border, along the edge of the desert that borders the east side of the EPR, and south of I-10 (Vickers et al. 2015, Vickers et al. 2017). Although the EPR population has been found to be largely disconnected from all other California populations, some mountain lion movement was documented traversing between the EPR and SGSB (Vickers et al. 2015), and evidence exists of limited genetic exchange between the two populations (Gustafson et al. 2018). In addition, one young male mountain lion was documented to the south using the Parque-to-Park Linkage to cross the U.S. - Mexico border several times (where a border wall is lacking due to the rugged terrain); but that lion was eventually killed in Mexico by a vehicle strike (Vickers et al. 2015; W. Vickers unpublished data). Little is known about the mountain lions south of the border, but the movement patterns of EPR mountain lions suggest they may form a discrete population within the EPR north of the border (Vickers et al. 2015, Vickers et al. 2017).

The Petition highlights that more information on mountain lion abundance, distribution, and dispersal is needed from the Colorado River and eastern desert areas of California, along with that for lion populations in Arizona and Mexico (Williams 1986, Kucera 1998). At this time, there is inadequate information and a lack of genetic samples for these outlying areas of the EPR genetic subpopulation (McIvor et al. 1995, Vickers et al. 2015, Gustafson et al. 2018).

2. Other Relevant Scientific Information

In regard to the former distribution of Yuma mountain lions along the Colorado River in California, Grinnell (1914:page 251) stated: "We were told of the occurrence of cougars at several points along the river from Riverside Mountain south"; and he purchased two cougar skins with skulls from a rancher. At that time, mountain lions in the region were designated as Felis oregonensis browni and found along the lower Colorado River in California. Later, he described the "Yuma mountain lion" (Felis concolor browni) as "Now very rare, perhaps extinct" (Grinnell et al. 1937: page 587).

The swimming ability of mountain lions is described in Bruce (1921) and Young and Goldman (1946:pages 63 and 81), documenting that mountain lions can swim and are able to cross rivers.

One recent publication, not discussed in the Petition, documented mountain lion occurrence in the eastern part of Marin County, where prior information was mostly limited to the western section of the county inside Point Reyes National Seashore (Fifield et al. 2015). North Coast (NC) mountain lions in Marin County are separated from the smaller CC-N population by expansive development and the road and freeway network in the greater San Francisco Bay area.

3. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition discussed information on distribution of the mountain lion and cited published and unpublished studies and reports that indicate a reduction in distribution.

## D. Abundance

1. Scientific Information in the Petition

The Petition discusses abundance on pages 34 through 40, and cites Mansfield and Weaver (1989), discussed below. Mountain lions are secretive, making abundance or population trend estimates difficult. Additionally, mountain lion population densities are generally low, which may be driven by prey density, competition between males for access to females, and mutual avoidance (Pierce and Bleich 2003). Other factors contribute to lion abundance, such as habitat quality and quantity, unnatural mortality events due to vehicle strikes and depredation take, and the presence of transient mountain lions within established home ranges of resident lions.

The Petition presents information regarding population densities. In the United States, population densities for mountain lions range from 0.4 to 4.3 resident adults per 38.6 miles<sup>2</sup> (100 km<sup>2</sup>), and 0.4 to 7.1 total mountain lions per 38.6 miles<sup>2</sup> (100 km<sup>2</sup>), though it varies by population and the presence of human-induced pressures (e.g., hunting) (Pierce and Bleich 2003). In California, where hunting is no longer legal, but other anthropogenic pressures such as roads and development are present, resident adult and total population densities have been found to be 1.1 and 3.6 per 38.6 miles<sup>2</sup> (100 km<sup>2</sup>), respectively (Pierce and Bleich 2003).

The Petition noted past efforts by the Department to estimate mountain lion abundance/population size and included the various estimates reported in Mansfield and Weaver (1989). The Petition correctly stated that the Department acknowledges the estimate from 1984 is outdated and relied on density estimates from regional studies to derive a statewide abundance. The Department's estimates were based on field studies and information available at the time. The estimates reported in Mansfield and Weaver (1989) are as follows:

- 600 in 1920
- 2,400 in 1972
- 2,400-3,000 in 1982
- 4,100-5,700 in 1984
- 5,100 (minimum) in 1988

The 1988 minimum statewide estimate was based on 80,000 square miles of inhabited range. The authors stated the following after presenting these estimates: "However, a statewide population estimate is of limited value. For making management decisions, reasonably accurate population estimates are needed for logical management units".

The Petition also presents information from the Department's mountain lion web page (CDFW 2018) which uses a range for a current statewide population estimate of 4,000-6,000 mountain lions. Studies by the Department and other cooperators are in process to update the estimate (Dellinger 2019).

The Petition discusses habitat loss and fragmentation in the Southern California/Central Coast ESU which has negatively affected the abundance of mountain lions. The Petition discusses the six genetic subpopulations in detail and summarizes recent tracking and genetic studies. This information was discussed earlier in the Population Trend section of this Petition Evaluation, given the close relationship between abundance, population size, and population trend.

The Petition notes that new techniques for analyzing wildlife populations through genetic studies are now helping wildlife managers better estimate population size and viability. Because demographic and genetic processes interact, both factors contribute to the probability of extinction for small, isolated populations (Benson et al. 2019).

2. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition describes what is known about the abundance of mountain lions in the proposed ESU.

- E. Life History
  - 1. Scientific Information in the Petition

The Petition addresses life history details of the mountain lion on pages 7 through 21. Information on taxonomy, morphology, population genetics, effective population size

and extinction risk, reproductive biology, foraging ecology and diet, habitat requirements, and survivorship and causes of mortality are discussed. Additionally, the six genetic subpopulations within the proposed ESU are discussed.

As noted earlier in the "Overview of Mountain Lion Ecology" section of this Petition Evaluation, mountain lions have a polygynous social structure and males do not contribute to rearing young. The ratio of adult females to males is 2:1 or 3:1, and subadult male lions immigrate further from their natal area than sub-adult female lions (Seidensticker et al. 1973, Beier 1993, Beier and Barrett 1993, Santa Cruz Puma Project 2015). The potential for long distance immigration by young male mountain lions has an important demographic influence if the dispersers become breeders and increase the genetic diversity of a population. Generally, as noted in the Petition, population viability is increased by higher genetic diversity in a population and consistent immigration between small populations is required; however, when barriers to dispersal exist population viability may become compromised (Riley et al. 2014, Benson et al. 2016, Benson et al. 2019).

The Petition describes how territorial adult mountain lions can be constrained in their movements when faced with barriers such as a large freeway, or a narrow corridor between habitat patches. As an example, in 13 years of study on the SAM population, only one radio-collared male lion crossed I-15, the major freeway barrier between the SAM and the EPR, and that lion was killed 25 days after the crossing for depredating domestic sheep (Vickers et al. 2015). Although Gustafson et al. (2017) documented three males immigrating into the SAM from the EPR, and four males emigrating from the SAM to the EPR over a 15-year period, only one of the males (M86, an immigrant to the SAM) is known to have successfully bred. While M86 improved the SAM population's genetic diversity (Gustafson et al. 2017), high levels of mortalities due to vehicle strikes and depredation/illegal killings likely reduce the number of immigrants that can successfully establish as breeding adults (Vickers et al. 2015).

The Petition cites Beier and Barrett (1993) and Benson et al. (2019) which indicate that in a small population with a female-biased adult sex ratio and high levels of adult mortalities due to vehicle strikes, and 3.4 times more male than female lions affected by depredation take, there is potential for occasional male lion extinction in the SAM, which could severely limit the short- and long-term viability of the population.

The Petition states that the divergence of the genetic subpopulations in the proposed ESU is likely the result of habitat fragmentation caused by roads and development (Ernest et al. 2003, Ernest et al. 2014, Riley et al. 2014, Vickers et al. 2015, Benson et al. 2016, Gustafson et al. 2017, Gustafson et al. 2018, Benson et al. 2019). The six small and nearly isolated populations have an increased risk of inbreeding depression and extinction due to limited genetic exchange. The Petition states habitat connectivity

and habitat protection is needed to help assure viable populations (Ernest et al. 2014, Riley et al. 2014, Vickers et al. 2015, Benson et al. 2016, Gustafson et al. 2018, Benson et al. 2019).

# 2. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition presents scientific information on life history of the mountain lion, and the biological, genetic, and habitat factors of concern for the six subpopulations within the proposed ESU.

## F. Kind of Habitat Necessary for Survival

1. Scientific Information in the Petition

The Petition addressed mountain lion habitat requirements on pages 19 through 21. As noted in the Petition, mountain lions are primarily solitary and occur in low density. Exceptions to their solitary nature occur in certain situations, e.g., during breeding activities, when females are rearing kittens, or when sub-adults are dispersing with siblings. Mountain lions are territorial and require sufficient cover in order to stalk, ambush, and cache their prey. Because deer are their main prey, a lion population requires sufficient habitat to sustain a deer population and alternate species to prey upon as needed. The Petition describes how large areas of relatively undisturbed habitat with functional connectivity to other suitable habitat areas are needed to allow for successful foraging, resting, breeding, denning, and dispersal. Dispersal includes emigration and immigration (allowing for two-way gene flow), which is essential to maintain exchange of genetic traits between populations, decrease the risk of inbreeding depression, and help assure long term population viability.

As presented in the Petition, mountain lions have large home ranges that may include heterogenous habitats including riparian, chaparral, oak woodlands, coniferous forests, grasslands, and occasionally rocky desert uplands (Grinnell 1914, Grinnell et al. 1937, Williams 1986, Beier and Barrett 1993, Dickson et al. 2005, McClanahan et al. 2017). As a result of their mountain lion study in the SAM population, Dickson and Beier (2002) advised protection of riparian areas from development, road building, and habitat alteration as crucially important to the lion population. They added that habitat adjacent to the riparian areas provide important stalking and feeding cover for the SAM mountain lion population, and prey kill sites and prey caches were most often associated with this vegetation type (Beier et al. 1995).

Although mountain lions will use moderately disturbed areas as they travel and hunt

(Wilmers et al. 2013, Gray et al. 2016), occupancy is lower in developed areas and lions are more likely to use developed areas if they border open spaces (Wang et al. 2015). Mountain lions require a habitat mosaic that provides sufficient space to move away from human-disturbed areas, and connect to expansive, intact, heterogeneous habitats (Beier 1995, Dickson and Beier 2002, Dickson et al. 2005, Zeller et al. 2017).

Research on mountain lions in the SAM suggested that an area of less than 425 miles<sup>2</sup> (1,100 km<sup>2</sup>) was unlikely to support a lion population without some immigration (Beier 1996), and the Santa Monica Mountains (CC-S) are approximately 255 miles<sup>2</sup> (660 km<sup>2</sup>). In highly developed areas, the conservation of natural habitat on both sides of freeways and effective corridors across them are needed (Ng et al. 2004), or translocations may be necessary if large carnivores are to persist in proximity to the megacities (metropolitan areas of >10,000,000 people). of the future (Riley et al. 2014).

2. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition presents scientific information regarding the kind of habitat necessary for the mountain lion's survival, including the importance of functional movement and dispersal corridors between habitat areas, preservation of existing diverse habitat, and adequate buffers from effects of human development, roads, and highways.

- G. Factors Affecting the Ability to Survive and Reproduce
  - 1. Scientific Information in the Petition

The Petition discusses factors affecting the mountain lion's ability to survive and reproduce on pages 40 through 53. These factors include low genetic diversity and inbreeding depression, vehicle strikes, depredation and illegal take, mortality from intraspecific strife (i.e., aggression between lions), orphaned kittens and kitten abandonment, poisoning from rodenticides and other environmental toxicants, increased human-caused wildfires, and climate change. Further, the Petition summarizes the primary threats to population viability of mountain lions in the proposed ESU as the direct impacts of past and present habitat modification and destruction. These factors, as described in the Petition, are briefly summarized below.

Most factors affecting the ability of mountain lions to survive and reproduce in the proposed ESU are caused by humans. Lack of adequate habitat and functional connectivity between the mountain lion subpopulations is the primary driver of declining

mountain lion populations. Habitat loss and fragmentation due to development, roads, and highways has resulted in low effective population size, low genetic diversity, extreme levels of isolation, and high mortality rates, which collectively drive the genetic subpopulations within the proposed ESU toward extinction. Ongoing and future planned development in suitable mountain lion habitat further threatens the subpopulations.

As described earlier in the Population Trend section, the Petitioners noted that the CC-N, CC-S, SGSB, and SAM populations are found to have low genetic diversity, and the SAM population's genetic variation is nearly as low as the endangered Florida panther population (Ernest et al. 2014, Riley et al. 2014, Gustafson et al. 2017). Additionally, effective population sizes of the CC-N, CC-S, SGSB, SAM, and EPR populations are well below the older and less conservative scientific threshold of 50, and the CC-C effective population size is just barely above that threshold at Ne = 56.6 (Ernest et al. 2014, Riley et al. 2014, Benson et al. 2016, Gustafson et al. 2018, Benson et al. 2019). These low effective population sizes suggest inbreeding depression could occur within the short-term (over the duration of five generations) and these populations are at increased risk of extinction.

Vehicle strikes are a known mortality factor for mountain lions, and in California, an estimated 100 mountain lions are killed every year by vehicle strikes (Pollard 2016). From 1981 to 2013, vehicle strikes accounted for 53% (50/94) of mountain lion deaths in the SAM, and 30% in the EPR (46/154) (Vickers et al. 2015). Although the CC-N population is less studied, the Petition noted evidence that vehicle strikes are a significant cause of mortalities in this population. At least six mountain lions have been killed by vehicle strikes on Highway 17 in the Santa Cruz Mountains between 2008 and 2018 (Midpeninsula Regional Open Space 2017, Slade 2018) and news outlets reported at least three vehicle strikes killing mountain lions on the I-280 in San Mateo County between 2014 and 2016.

Another factor identified by the Petition to affect mountain lion survival and reproduction is depredation take. Depredation take results in more deaths of male lions compared to females. Statewide, of mountain lions killed for depredation in 2017, 68% were males (CDFW 2018b), and from 1981 to 2013, 3.4 times more male than female mountain lions were killed for depredation purposes in the SAM and EPR (Vickers et al. 2015). Not only do lions killed via depredation permits diminish the total abundance of lions in these populations, but because they consist predominantly of males, the number of primary gene dispersers is also greatly reduced, which further inhibits adequate gene flow (Vickers et al. 2017).

In addition to the reported depredation take, additional mountain lions are illegally killed, and many incidents likely go undocumented (Beier and Barrett 1993, Vickers et al. 2015). Illegal take has been observed in the CC-S, SAM, and EPR (Beier and Barrett

1993, Riley et al. 2014, Vickers et al. 2015) as well as in the CC-N (Yap 2018, pers. observation); and although 80 mountain lions were reported as being killed under depredation permits in 2017, 89 deaths were being investigated (CDFW 2018b).

The Petition describes intraspecific strife as another factor affecting mountain lion populations and the leading cause of mortality for the nearly isolated mountain lions in the Santa Monica Mountains (CC-S) (Riley et al. 2014). Although intraspecific strife is a common source of mortality in mountain lion populations (Beier and Barrett 1993, Logan and Sweanor 2001, Allen 2014), unusually high levels of intraspecific strife have been observed in the CC-S population (Riley et al. 2014). About 41% (9/22) of deaths in radio-collared mountain lions being tracked from 2002 to 2018 were from intraspecific strife, with multiple cases of aggressive adult males killing their siblings, offspring (male and female), and previous mates (Riley et al. 2014). While males are likely to have larger home ranges to protect food resources and access to females, killing of potential mates has no apparent evolutionary benefit, as it reduces chances of future reproduction (Riley et al. 2014). These high levels of intraspecific strife are likely due to limited space in the Santa Monica Mountains caused by dispersal barriers (Riley et al. 2014, Benson et al. 2019).

In the SAM lion population, intraspecific strife was documented on two occasions (one GPS-collared, one previously GPS-collared) since the publication of Vickers et al. (2015), (W. Vickers unpublished data). Enhanced connectivity between populations would facilitate dispersal which would probably reduce and/or prevent high levels of intraspecific strife and improve survival and reproduction rates (Riley et al. 2014, Benson et al. 2019).

The Petition describes mortality of mountain lion kittens (also known as cubs) due to abandonment by their mother, and notes it is fairly common in the Santa Monica Mountains (CC-S), accounting for 23% (5/22) of the known causes of death for marked/collared animals. Mountain lion kittens can also become orphaned if their mother is killed by vehicle strikes or under depredation permit before they have dispersed. If they are too young to fend for themselves, they likely starve to death or are preyed upon by other predators. If the cubs are more mobile, they may approach areas where they are more likely to encounter humans as they search for food. This was seen in November 2017, when a mother mountain lion was killed by a vehicle strike in the SAM and two of her cubs were found roaming near human establishments – one in a backyard and the other along a road (Veklerov 2018). Both cubs, too young to survive on their own, were placed in the Oakland Zoo.

The Petition discusses the emergence of anticoagulant rodenticide (AR) poisoning as a mortality factor for mountain lions in the proposed ESU. These toxicants are used to suppress pest populations in agricultural or urban settings. The potential for direct and

secondary exposure and illicit use of ARs has led to a relatively recent field of study for determining effects of AR poisoning on various carnivore species (McMillin et al. 2008, Gabriel et al. 2012, Serieys et al. 2015), including mountain lions (Riley et al. 2007, Rudd et al. 2018, Rudd et al. 2019).

In southern California, high levels of ARs in bobcats correlated with notoedric mange fatalities causing a local decline in the population (Riley et al. 2007, Serieys et al. 2015). Notoedric manage is caused by a parasitic mite and has been observed in mountain lions (Uzal et al. 2003, Riley et al. 2007, Serieys et al. 2015).

As summarized in Serieys et al. (2015), ARs interrupt the production of vitamin Kdependent blood clotting proteins, leading to the depletion of these proteins over a period of days inducing mortality by internal hemorrhage. Comprised of two classes of compounds, ARs are the primary chemical method used worldwide for the control of rats and mice. First-generation ARs (FGARs), including warfarin, diphacinone, and chlorophacinone, are more readily metabolized, have a shorter half-life in hepatic tissue (2 weeks to several months), and must be consumed in multiple feedings to reach a lethal dose. Second-generation ARs (SGARs) include brodifacoum, bromadiolone, and difethialone, and were developed to target rodents with genetic resistance to warfarin. Due to prolonged action and increased potency with hepatic half-lives ranging from 6-12 months, SGARs may persist in liver tissue for more than a year in some species. Both classes of compounds have delayed onset of action, and death from AR consumption can occur up to 10 days after ingestion. Individual rodents may continue to accumulate the compounds over a period of days, increasing their attractiveness to predators as they become weakened by the toxicant, and easier to capture. Mountain lions become poisoned by ingesting the contaminated rodents, or by eating prey species that have ingested contaminated rodents.

The Petition discusses the Department's Wildlife Investigations Lab (WIL) studies of AR exposure in necropsied mountain lions since 2016. Results of WIL's recent analyses found AR exposure in 241 of the 252 (95.6%) of mountain lion livers tested from 2016 to 2018 (Rudd et al. 2019). SGARs were more commonly detected than FGARs, despite a 2014 regulatory change restricting SGAR use to certified pesticide applicators. Past and ongoing work by WIL demonstrates widespread exposure to both FGARs and SGARs in California's mountain lions. However, during the two-year study, mortalities related to AR poisoning were not observed on postmortem examination and no consistent occurrence of a disease process compatible with immunosuppression was observed (Rudd et al. 2018, Rudd et al. 2019, Rudd unpublished data).

Conversely, in 2004 a study in the CC-S subpopulation documented two adult mountain lions that died directly from anticoagulant toxicity, and both lions also had infestations of notoedric mange (Uzal et al. 2003, Riley et al. 2007). Two other mountain lions that died

in intraspecific fights also exhibited exposure to two to four different anticoagulants. These results indicate AR toxicity can have direct and possibly indirect effects on mortality (Riley et al. 2007). The Petition notes that in the SAM subpopulation, anticoagulant rodenticide residues were detected in the livers of 100% of deceased animals tested, with up to five different compounds detected in some animals (Riley et al. 2007, Riley et al. 2014, W. Vickers, pers comm).

The Petition also notes exposure of mountain lions to dangerously high levels of illegal pesticides, such as carbofuran, used on illegal marijuana grow sites, which, like ARs, can also bioaccumulate in the liver and potentially cause health issues (Rudd et al. 2019). Further research is needed to investigate the lethal and sub-lethal effects of anticoagulants and other toxicants on wildlife in terrestrial environments (Riley et al. 2007, Gabriel et al. 2015, Rudd et al. 2018).

As noted in the Overview of Mountain Lion Ecology section of this Petition Evaluation, the fisher (*Pekania pennanti*) is a forest carnivore and known prey species for mountain lions in some forested areas of California (Wengert et al. 2014), including the southern geographic region of the WSN subpopulation of lions. Fisher have been documented to suffer mortality from AR exposure, and researchers concluded that mortality from and exposure to toxicants appears to be on the rise, and exposure to multiple ARs increases probability of death (Gabriel et al. 2015).

The Petition describes increased frequency of wildfire as another factor affecting mountain lion survival. Although fire is a natural disturbance in California ecosystems, sprawl development with low/intermediate densities extending into habitats prone to fire have led to more frequent wildfires that burn larger areas (Syphard et al. 2007, Syphard et al. 2009). Most wildfires in California are caused by human ignitions, like power lines, arson, improperly disposed cigarette butts, debris burning, fireworks, campfires, or sparks from cars or equipment (Keeley and Fotheringham 2003, Syphard et al. 2007, Syphard et al. 2012, Bistinas et al. 2013, Balch et al. 2017, Radeloff et al. 2018, Syphard et al. 2019). The Petition noted that although mountain lions are highly mobile and generally able to move away from wildfires, in severe weather conditions winddriven fires can spread quickly (Syphard et al. 2011). If mountain lion movement is constrained by roads and development, and the lions are unable to access escape routes, their chances of surviving wildfires are greatly reduced. Vickers et al. (2015) documented one death of a collared mountain lion in the SAM and one in the EPR due to human-caused wildfires, and the deaths of two collared mountain lions in the CC-S in 2018 have been attributed to the Woolsey Fire. Additionally, increased frequency of fire ignitions can cause shifts in natural fire regimes, potentially leading to large-scale landscape changes, such as vegetation-type conversion and habitat fragmentation, which can impact wide-ranging species like the mountain lion (Jennings et al. 2016).

The Petition also discusses climate change as a factor affecting mountain lion survival and reproduction, and briefly summarizes the scientific consensus on climate change, citing some relevant scientific papers, e.g., Warren et al. (2011) and Wiens (2016). Improving landscape connectivity is a key factor for climate change resilience and adaptation (Heller and Zavaleta 2009), and this holds true for a wide-ranging carnivore like the mountain lion. Without functional connectivity that provides multiple pathways for mountain lion movement, the Central Coast and Southern California mountain lion populations and the prey they depend on may not be able to shift their ranges as available resources shift in response to climate change. Enhanced connectivity that provides multiple corridors for safe passage between suitable habitat areas would improve chances of survival and reproduction by increasing the probability of movement across landscapes by a wider variety of species, and providing alternate escape routes or refugia for animals seeking safety from catastrophic wildfires (Mcrae et al. 2008, Pinto and Keitt 2008, Mcrae et al. 2012, Cushman et al. 2013, Olson and Burnett 2013).

2. Other Relevant Scientific Information

In addition to the limiting factors described above, some diseases contribute to mountain lion mortality, though they are not common at this time. The three diseases reported for mountain lions that were not included in the Petition are described below.

- Feline infectious peritonitis (FIP) is a fatal immune-mediated vasculitis of felids caused by a mutant form of a common feline enteric virus, feline enteric coronavirus. The virus can attack many organ systems and causes a broad range of signs, commonly including weight loss and fever. Regardless of presentation, FIP is ultimately fatal and often presents a diagnostic challenge. In May 2010, a malnourished young adult male mountain lion (Puma concolor) from Kern County, California, USA was euthanized because of unusual behavior and concern for public safety. A postmortem examination was performed, and a PCR for coronavirus performed on kidney tissue was positive, confirming a diagnosis of FIP. Although coronavirus infection has been documented in mountain lions by serology, this was the first confirmed report of an FIP-related mortality (Stephenson et al. 2013).
- 2. Feline leukemia virus (FeLV): A young adult male free-ranging mountain lion was removed from a college campus in Sacramento, California, and blood samples taken shortly after capture revealed it to be anemic, lymphopenic, suffering from renal disease, and feline leukemia virus (FeLV) antibody positive (Jessup et al. 1993). The researchers noted that as human populations expand into and utilize wildlife habitats, free-ranging wild animals may come into contact with diseases most commonly associated with domestic animals. Feline leukemia virus (FeLV)

infection had not previously been reported in free-ranging wild felids in North America. FeLV infection is horizontally and vertically transmitted by body fluids, particularly through saliva. In general, transmission of viruses can occur through two pathways: horizontal and vertical transmission. In horizontal transmission, viruses are transmitted among individuals of the same generation, while vertical transmission occurs from mothers to their offspring. Generally, direct contact between cats is required for effective transmission. Although the origin of the cougar's FeLV infection is a matter of speculation, contact with and consumption of domestic cats, particularly feral domestic cats in urban neighborhoods or along the riparian corridor, may have been the source of this animal's FeLV infection.

- 3. In California, two cases of mountains lions with rabies are known:
  - a) On July 5,1909, along Coyote Creek, near Morgan Hill, in Santa Clara County, a young boy and an adult woman were attacked by a mountain lion. Both victims died, and the physician for the woman determined she died of hydrophobia (Storer 1923).
  - b) In August 1994, two couples staying at a remote Mendocino County cabin reported killing a mountain lion after it charged them. Tests indicated the mountain lion was rabid (CDFG 2000).
  - 3. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition discusses results of numerous scientific studies that describe multiple factors affecting the ability of mountain lions to survive and reproduce within the proposed ESU. The direct impacts of past and present habitat modification and destruction combine to threaten the population viability of mountain lions in the proposed ESU

- H. Degree and Immediacy of Threat
  - 1. Scientific Information in the Petition

The Petition discusses the degree and immediacy of threats to mountain lions on pages 53 through 54. As discussed in Section G of this Petition Evaluation, the petition contains sufficient information indicating that habitat loss, habitat fragmentation, and lack of habitat connectivity have led to small, isolated genetic subpopulations of mountain lions with evidence of inbreeding and a lack of adequate gene flow between them. Mountain lions also face human-caused mortality factors from vehicle strikes,

depredation take, poaching, take associated with public safety incidents, and anticoagulant rodenticides, along with the added stressors of increased wildfire risk and vegetation-type conversions that are not likely to favor mountain lions (Jennings et al. 2016). It is important to consider the cumulative effects of these factors in combination with the overarching future effects of climate change, and the ongoing and future planned development in suitable mountain lion habitat.

The Petition describes how roads and development have fractured habitat connectivity for mountain lions in the proposed ESU, leading to the separation of at least six isolated, genetically distinct populations. Benson et al. (2019) predicted loss of genetic heterozygosity in the SAM and CC-S mountain lion populations, which suggests that inbreeding depression is imminent. If inbreeding depression occurs, these two populations will likely go extinct within 50 years, with median times to extinction of 11.7 years and 15.1 years, respectively (Benson et al. 2019). The Petition states the similarly low genetic diversity and effective population size of the SGSB, and CC-N populations will likely result in a similar fate. And, although the CC-C and EPR populations appear slightly healthier with more genetic diversity and a higher effective population size, the effective population sizes of these populations are still well below the most recent recommended threshold to prevent inbreeding depression in the short-term (Frankham et al. 2014, Gustafson et al. 2018).

The Petition states immediate action is needed to protect areas of existing connectivity, and to restore connectivity between the subpopulations. Anthropogenic pressures, especially vehicle strikes, and depredation take, should be minimized to help recover these populations. For the federally endangered Florida panther, translocation of mountain lions from Texas to Florida helped to increase genetic diversity, but researchers have noted that continued habitat loss, persistent inbreeding, infectious agents, and possible habitat saturation pose new dilemmas. They stated that the intensive management program illustrates the challenges of maintaining populations of large predators worldwide (Johnson et al. 2010).

The Petition describes how sustaining recovery programs, such as that for the Florida panther, requires predictable long-term funding, and conservation of habitat before costs escalate or it is lost. In California, any similar potential genetic rescue/translocation efforts need to be compared to the potential value of strategically located corridors and wildlife crossing infrastructure that allows for dispersal and gene flow, along with a reduction in vehicle-strike mortalities. The Petition states that this latter habitat enhancement emphasis would be a more comprehensive, long-term solution to conserve the mountain lion populations within the proposed ESU in perpetuity. The Petition further emphasized that the preservation of intact linkages, especially the Tehachapi and Sierra Pelona Mountains, is essential to maintain statewide genetic connectivity of mountain lions (Gustafson et al. 2018).

# 2. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition presents scientific information describing multiple threats to the continued existence of mountain lions in the proposed ESU. The Petition concludes that two demographic threats of small effective population sizes and loss of genetic diversity are severe and require immediate attention.

# I. Impact of Existing Management Efforts

1. Scientific Information in the Petition

The Petition discussed the impact of existing management efforts on pages 54 through 69, under the "Inadequacy of Existing Regulatory Mechanisms" section.

The Petition noted the following in regard to an inadequacy of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) (CEQA): Even when a lead agency acknowledges that an effect is "significant," CEQA allows a lead agency to adopt a "statement of overriding considerations" and approve a project if the agency finds that other factors outweigh the environmental costs of the project or that further mitigation is infeasible (Pub. Resources Code, § 21081; Cal. Code Regs., tit. 14, § 15093(b)); Cal. Pub. Res. Code § 21081). The Petition further noted that even if a project may have a significant effect on a "wildlife population" like the CC-S, SAM, SGSB, or EPR mountain lions, an agency could interpret CEQA as still allowing approval of the project. Therefore, the Petitioners conclude that CEQA, in practice, is inadequate to protect the Southern California and Central Coast mountain lions.

Further, the Petition describes how the Northwest Highway 138 EIR contained no analysis of the highway's impacts on mountain lions, given that they are not presently listed as threatened or endangered. Though the Department has urged lead agencies to consider wildlife connectivity in CEQA planning documents, Los Angeles County's responses to CDFW's recommendations indicate that lead agencies have not interpreted CEQA to include a clear legal mechanism for mitigation for impacts on wildlife connectivity, even though such connectivity is critical to the survival of Southern California and Central Coast mountain lions.

The Petition describes multiple projects and human population growth with associated housing developments, and road and highway expansions that could impact mountain lion habitat and movement corridors and contribute to mortality due to vehicle strikes. Planning document inadequacies are also described. Some examples, described in the Petition, are summarized below.
# Natural Community Conservation Planning Act (NCCP), and Habitat Conservation Plans (HCPs)

The San Diego Multiple Species Habitat Conservation Program is a joint NCCP and HCP that includes mountain lions as a covered species, but the program readily concedes that mountain lions (as well as deer) "were not a major consideration in linkage design." In addition, the joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS) states that "[d]ue to the limited availability of habitat in the study area, implementation of the MSHCP is not expected to substantially increase or decrease the population viability of the mountain lion." The EIR/EIS likewise concludes no major populations or critical locations exist for the mountain lion within the plan area and concludes the species is "adequately conserved" under the plan.

The San Diego Multiple Species Conservation Program is an NCCP and HCP that covers 900 square miles in the southwestern portion of San Diego County. The Program lists mountain lions as "conserved" and states that mountain lions "will be covered by the MSCP because 81% of the core areas (105,000± acres) that support its habitat will be conserved". While the Program generally notes linkage, areas were designed to accommodate "large animal movement," the Program does not identify linkages designed for mountain lions or specific measures designed to protect them. Likewise, while the Program states that "[s]pecific design criteria for linkages and road crossings/under crossings are included in subarea plans," not all subarea plans are complete. The San Diego North County Multiple Species Conservation Plan is one of the "sub-area" plans anticipated under the San Diego Multiple Species Conservation Program. However, it has not been completed and is still in development.

The Orange County Transportation Authority NCCP/HCP ("OCTA Plan") lists the mountain lion as a covered species for purposes of the federal HCP, but not for purposes of the NCCP permit. The OCTA Plan contains four "Species Goals" for mountain lions, including (1) acquiring 1,013 acres of suitable habitat; (2) realigning fencing near the Highway 241 toll road; (3) funding of the North Coal Canyon Restoration Project; and (4) a "wildlife crossing policy" requiring pre-construction surveys to ensure existing crossings "maintain or improve functionality" if modified by new freeway projects. However, despite allowing the expansion of two highways in mountain lion habitat (Projects G and J), the OCTA Plan does not require the construction of specific wildlife crossings. The OCTA Plan nonetheless claims that impacts on the mountain lion will be offset through these "Species Goals."

A Western Riverside County Multiple Species HCP offers little protection for the SAM mountain lion population. While this HCP identifies linkages designed to ensure connectivity for mountain lions, the Western Riverside County Regional Conservation Authority has failed to enforce the HCP to protect such linkages when permittees such

as the City of Temecula approve development that would severely constrict or impair such linkages.

A Santa Monica Mountains National Recreation Area General Management Plan ("GMP") was prepared pursuant to NEPA and provides a framework for the management of the Santa Monica Mountains National Recreation Area ("SMMNRA"), administered by the National Park Service, California State Parks, and the Santa Monica Mountains Conservancy. The GMP recognizes that the Santa Monica Mountains mountain lion population's ability to survive in the face of large-scale habitat fragmentation and destruction is uncertain. The GMP states, "it is likely that their persistence would depend upon their capability of dispersing to and from other habitat areas beyond the Santa Monica Mountains." The GMP concedes, "the situation is especially serious for mountain lions" and lists mountain lions as a "park species of concern." The GMP agrees that improvements to facilitate wildlife movement across freeways or through developments may be necessary but does not propose or require specific actions to improve wildlife movement across freeways or through development.

A Ventura County Wildlife Connectivity Ordinance was adopted by the Ventura County Board of Supervisors on March 12, 2019 (the "Connectivity Ordinance") to help facilitate wildlife connectivity and minimize habitat fragmentation for mountain lions, mule deer, California gnatcatchers, bobcats, least bell's vireos, California red-legged frogs, and other species. Two of the linkages targeted in the Connectivity Ordinance are the Santa Monica Mountains – Sierra Madre Mountains connection and the Sierra Madre Mountains – Castaic Connection, which connect wildlife habitat in the Santa Monica Mountains, Santa Susana Mountains, Simi Hills, and Los Padres National Forest. While the Connectivity Ordinance should help allow wildlife to move more easily through private lands between core habitat areas, it would do little to ensure connectivity across major roads and highways because Ventura County does not have jurisdiction over these areas. The Petition also states that Caltrans and its road maintenance and improvement activities are not regulated by the Connectivity Ordinance.

A Los Angeles County Significant Ecological Areas Program is currently in the process of updating its Significant Ecological Areas ("SEAs") Ordinance. The draft ordinance is intended to protect biodiversity in SEAs from incompatible development and ensure that projects reduce habitat fragmentation and edge effects by providing technical review of impacts and requiring mitigation. Like the Ventura County ordinance, the SEAs designations can lead to compact development and allow wildlife to more easily move across private lands between core habitat areas. However, the SEA ordinance is not specifically designed to protect mountain lions and would not regulate Caltrans and its road maintenance and expansion activities. In an environmental review for Southern California national forest land management plans, the U.S. Forest Service found impaired connectivity poses a serious threat to Southern California mountain lions: the "greatest concern for the long-term health of mountain lion populations on the national forests of southern California is loss of landscape connectivity between mountain ranges and large blocks of open space on private land." The review warned that private land development in Southern California is "steadily reducing the habitat linkages that wildlife species need to connect large blocks of national forest land with other public and private natural spaces and habitat reserves."

The Petition notes that there are currently no NCCPs that cover the Central Coast. In addition, no NCCPs cover portions of the Santa Cruz Mountains, except the Santa Clara Valley Habitat Plan; however, that Plan does not cover mountain lions.

Growth is expected to increase in the Monterey Bay Area, leading to further fragmentation of natural habitats by urban or exurban development. The Association of Monterey Bay Area Governments predicts the population in the Monterey Bay Area to rise from 755,403 in 2015 to 883,300 in 2040. In San Luis Obispo County, the population is expected to increase by 41,650 between 2015 and 2045.

The Petition describes numerous other road and highway expansion projects planned for Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara counties. The expansion of existing roads and highways along with increased numbers of automobiles could further impair habitat connectivity for mountain lions in the Central Coast region.

### California Wildlife Protection Act of 1990 (Proposition 117) and CESA

The Petition asserts that CESA listing would build upon protections established by Proposition 117 (Fish & G. Code, §§ 4800-4810) by establishing an affirmative duty to ensure the survival and recovery of Southern California and Central Coast mountain lions by, among other things: (1) prohibiting the approval of projects that could jeopardize the continued existence of mountain lions or result in destruction of essential habitat pursuant to Fish and Game Code section 2053, subdivision (a); (2) requiring state agencies such as Caltrans to utilize their authority to conserve listed species pursuant to section 2055); and (3) requiring implementation of appropriate mitigation measures for projects that could destroy mountain lion habitat or impair connectivity pursuant to section 2054. Also consistent with Proposition 117, the Petition notes that section 2052 establishes that it is the policy of the state to conserve and protect listed species and their habitat, including through acquiring lands.

Regarding the different provisions in Proposition 117 and CESA, the Petition states that Proposition 117 is to be "liberally construed to further its purposes." (Prop. 117 § 9); it

also states that because Proposition 117 and CESA both have similar purposes; Proposition 117 should be construed to be consistent with CESA.

2. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition presents information to indicate existing regulatory mechanisms and conservation efforts do not adequately protect mountain lions within the proposed ESU from impacts that threaten their long-term survival. In particular, as stated in the Petition and cited in scientific reports, land use planning and permanent protection of habitat needs to occur at a larger scale across jurisdictional boundaries, and include multiple functional habitat connections/corridors to allow safe movement by mountain lions and their prey, while also lessening the human-caused mortality factor of vehicle strikes.

- J. Suggestions for Future Management
  - 1. Scientific Information in the Petition

The Petition suggests future management on pages 70 through 72. The ten suggestions focus primarily on essential habitat conservation and connectivity. They are included here in their entirety for easy reference and to compare to other relevant scientific information provided in subsection J.2. below.

- Design and build crossing infrastructure in strategic locations to improve wildlife connectivity and permeability at existing roads and highways. Crossing infrastructure should include but is not limited to overcrossings, underpasses, culverts, and exclusionary fencing that guides animals to safer crossing areas. The following crossing locations have been identified by mountain lion experts and should be prioritized for the implementation of crossing infrastructure: 1) I-15 Freeway at Temecula Creek Bridge to enhance the Palomar Linkage and connect the Santa Ana and Eastern Peninsular Mountain Ranges (Gustafson et al. 2017, Zeller et al. 2017, Ernest et al. 2014, Riley et al. 2018); 2) I-15 Freeway at "Site 5" as described in Riley et al. (2018); 3) Hwy 101 at West Liberty Canyon (Riley et al. 2018.)
- 2. Improve or add large culverts to existing freeways in areas suitable for mountain lion crossing (Vickers [et al.] 2015).
- 3. Dedicate sufficient Wildlife Conservation Board, Habitat Conservation Fund and other state funding sources towards acquiring key mountain lion habitat and for establishment of highway crossing infrastructure.

- 4. Ensure that suitable habitat exists (through preservation or restoration/enhancement) on both sides of crossing structures and culverts (South Coast Wildlands 2008). Restrict human activity near crossing structures and relocate foot trails away from these structures (South Coast Wildlands 2008).
- 5. Fully protect mountain lion habitat, including resource-use patches and corridors (Zeller et al. 2017, Vickers et al. 2015). Prohibit large-scale development in primary travel corridors and habitat linkages, such as in and around the last remaining linkage for statewide genetic connectivity in the Tehachapi and Sierra Pelona Mountains (Gustafson et al. 2018) and in corridor areas between the SAM and EPR (Gustafson et al. 2017).
- 6. Require analysis of region-wide wildlife connectivity in all new development proposals (Gustafson et al. 2018).
- 7. Reduce depredation conflicts that precipitate mountain lion deaths (Vickers et al. 2015). Develop and implement outreach and education activities to promote use of predator-proof enclosures for domestic animals (Vickers et al. 2015). Expand CDFW's new three-step depredation permit policy in the CC-S and SAM areas to include all mountain lions across the state, or at a minimum, within the SGSB, EPR, CC-N, and CC-C population areas. Enhance the policy with enforceable implementation of non-lethal protective measures and reporting requirements.
- 8. Prohibit the use of second-generation anticoagulant rodenticides ("SGARs"), such as brodifacoum, bromadiolone, difenacoum, and difethialone in Southern California and Central Coast mountain lions' core habitat areas and linkages. Limit the use of other pesticides and herbicides that may have negative effects on mountain lion populations in Southern California and the Central Coast.
- 9. Identify "priority areas" for establishing wildlife passage features for the Southern California and Central Coast mountain lions using the best available science, including data collected by various agencies, academic institutions, and organizations, including but not limited to the National Park Service, the Karen C. Drayer Wildlife Health Center at UC Davis, the Road Ecology Center at UC Davis, and the Santa Cruz Puma Project at UC Santa Cruz.
- 10. Require Caltrans to analyze how projects in the State Highway Operation Protection Program and State Transportation Improvement Program can be designed to facilitate wildlife connectivity through wildlife passage features such as culverts, under crossings, overcrossings, bridges, directional fencing,

scuppers, barrier breaks, roadside animal detection systems, etc. Require Caltrans to collect and analyze roadkill data to identify hotspots where mountain lions are killed. Require Caltrans to implement wildlife passage features to the greatest extent feasible and as expeditiously as possible.

2. Other Relevant Scientific Information

The Department is aware of policies and guidelines and other suggestions for future management of mountain lions, as noted below.

- a. Monitor responses to increasing fire frequency to assess how mountain lions and other carnivores will be affected by large-scale changes that may pose a threat to landscape integrity and persistence of puma populations in southern California (Jennings et al. 2016).
- b. Maintain viable mountain lion populations within California; and provide for flexibility in controlling depredation problems (Weaver 1982).
- c. Recommend continued AR screening of livers from mountain lion carcasses to further enhance our understanding about the relative contributions they may have on population health. Continued monitoring would also measure the effectiveness of regulatory changes intended to reduce exposure of non-target wildlife to rodenticides (Rudd et al. 2018).
- d. From the Department's Mountain Lion Depredation, Public Safety, and Animal Welfare Bulletin Number 2017-07 (amendment to Department Bulletin 2013-02): Fundamental to the Department's conservation, education, and outreach regarding mountain lions, the Department works to (a) maintain genetically diverse and demographically viable populations, (b) minimize conflicts between mountain lions and humans, (c) identify and protect important habitats, (d) improve public awareness, and (e) identify and research emerging management and scientific issues.
- e. From the Fish and Game Commission's "Terrestrial Predator Policy", adopted April 19, 2018: It is the policy and practice of the Fish and Game Commission that: existing native terrestrial predator communities and their habitats are monitored, maintained, restored, and/or enhanced using the best available science. The department shall protect and conserve predator populations.
- f. Develop reliable maps of cougar habitat quality and landscape linkages; maps should identify potential corridors for population movement and dispersal.

Evaluate trans-highway movements and vehicle-related mortality of cougars (Cougar Research and Management Needs, Chapter 9, by Ted D. McKinney, in Jenks 2011, CMGWG 2005).

- g. Assess and map the status of, and threats to, each subpopulation. Identify linkages, assess the quality of each linkage, and conserve and restore linkages. Provide incentives to landowners to protect habitat. Consider augmentation (translocation and reintroduction) as a last resort alternative to natural connectivity (Chapter 3, Cougar Habitat, in CMGWG 2005).
  - 3. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted. The Petition includes information to indicate future management actions would benefit mountain lion populations in the proposed ESU, e.g., wildlife corridors and crossing structures over or under freeways and major roads. The Petition also cites studies containing a number of suggestions for future management e.g., land use planning at a larger scale to promote optimal habitat connectivity and gene flow, and for conservation of mountain lion prey and other wildlife species.

- K. Detailed Distribution Map
  - 1. Scientific Information in the Petition

The Petition provided the following map (Petition Figure 1) showing the genetically distinct mountain lion populations in California and Nevada with each color representing a genetic population. The reduced color intensity on the map represents lower probabilities of population assignment and indicates areas with admixture between mountain lion populations (Gustafson et al. 2018).



#### Petition Figure 1.

Map of genetically distinct mountain lion populations in California. The Central Coast North (CC-N), Central Coast Central (CC-C), Central Coast South (CC-S), San Gabriel/San Bernardino (SGSB), Santa Ana Mountains (SAM), and Eastern Peninsular Range (EPR) mountain lion populations should be considered an evolutionarily significant unit (ESU). Each color represents a genetically distinct mountain lion population. White dots are individual animals sampled. Source: Gustafson et al. (2018). 2. Other Relevant Scientific Information

Petition Figure 1 generally matches the historical and recent distribution of the mountain lion as described in Grinnell (1914), Grinnell et al. (1937), Young and Goldman (1946), Sitton (1977), Weaver (1982), Williams (1986), Mansfield and Weaver (1989), CDFG (1990), Torres et al. (1996), and Torres and Lupo (2000). A detailed map (Figure 221) from Grinnell et al. (1937) is provided below for comparison purposes and for historical context.

Torres and Lupo (2000) used the distribution of deer (Odocoileus hemionus) as an indicator to define the distribution of mountain lions since deer are a primary prey species; additional records and observations of lions were added to complete the distribution map (Figure 1).

Weaver (1982) produced a statewide distribution map that included relative density estimates for populations of mountain lions in California.



Fig. 221. Distribution of mountain lions in California: Round spots indicate localities of capture as stated in the Fish and Game Commission bounty records for the 7-year period, 1913–1919; square spots indicate some known localities of record otherwise, most of them as represented by specimens preserved. The approximate former limits, in California, of the two races are shown by broken lines; these races are: 1, California mountain lion; 2, Yuma mountain lion.

#### Figure 221. Distribution of mountain lions in California from Grinnell et al. (1937); page 540.



**Figure 1**. **Mountain Lion Habitat Suitability**. *In* Outdoor California (61) 3:22-23. (Source: Torres and Lupo 2000).

# 3. Conclusion

The Petition's distribution map (Petition Figure 1) sufficiently illustrates the distribution of genetic subpopulations of mountain lions in California. The Petition included additional maps showing mountain lion distribution in relation to road density, vehicle kill locations, and important landscape features (e.g., key habitat linkages) needed to maintain the distribution and genetic health of mountain lion populations in California (see Figure 3, and Figures 5-9 in the Petition).

# L. Sources and Availability of Information

1. Scientific Information in the Petition

The Petition cited more than 140 scientific and administrative documents related to mountain lion biology, ecology, habitat relationships, genetics, and conservation, including geographic and land use factors involved in designating the genetic populations and the Southern California/Central Coast ESU. The Petitioner provided electronic copies of most of these documents.

2. Other Relevant Scientific Information

The Department used additional sources of scientific information cited in this Petition Evaluation document.

3. Conclusion

The Department concludes the Petition meets the requirement in Fish and Game Code section 2072.3 that it include sufficient scientific information to indicate the petitioned action may be warranted.

# V. Recommendation to the Commission

Having reviewed and evaluated relevant information, including the material referenced in the Petition and other information in the Department's possession, the Department has determined the Petition provides sufficient scientific information to indicate that the petitioned action may be warranted. Therefore, the Department recommends the Commission accept the Petition for further consideration pursuant to Fish and Game Code section 2074.2. VI. Literature Cited

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January 16, 2020

Eric Sklar, President California Fish and Game Commission 1416 Ninth Street, Room 1320 Sacramento, CA 95814 Ms. Esther Burkett California Department of Fish and Wildlife P.O. Box 944209 Sacramento, CA 94244

Submitted via electronic mail: Fgc@fgc.ca.gov, Esther.Burkett@wildlife.ca.gov

RE: Petition to List Mountain Lions (*Puma concolor*) as a Threatened Species under the California Endangered Species Act

Dear President Sklar, Ms. Burkett and Members of the Commission,

On behalf of the Humane Society of the United States and our supporters throughout California, I submit the following comments in support of the petition to list mountain lions (*Puma concolor*) in the Southern and Central Coast region of California as Threatened under the California Endangered Species Act (CESA). We support the petitioners' proposal to list the six identified populations in these regions as an Evolutionarily Significant Unit (ESU).

As we detail below, we believe this Southern/Central Coast mountain lion ESU is in need of protection under CESA because of increasing threats to their survival in the region, and that providing such protection would be entirely consistent with both the text and the intent of Proposition 117The California Fish and Game Commission not only has the authority to list this ESU as Threatened under CESA, but must do so if the best available science shows that listing is warranted.

1. Mountain lions in the proposed ESU are rare and the loss of one individual can harm the entire population.

Mountain lions are a rare and cryptic species, even in ideal habitats with limited human influence. This is due not only to their demand for prey availability but also their own territoriality. The best available research suggests that mountain lions live at an average density of two adult per 100km<sup>2</sup>, validating the rarity of this species throughout their range in the U.S.<sup>1</sup>

California does not have a reliable population estimate for mountain lions, but an estimate published in 1989 suggested there were between 4,000 to 6,000 cats of all ages.<sup>2</sup> As stated within the petition, the proposed mountain lion populations in the Southern and Central Coast regions of California are quite small and, as well discuss below, are increasingly at risk from multiple threats, most notably from habitat loss and fragmentation which leads to genetic isolation. Such isolation



may result in inbreeding and a genetic bottleneck, which can lead to the extirpation of a population.

The majority of the proposed mountain lion populations maintain effective population sizes under 50 and total population sizes under 100.<sup>3</sup> As stated within the petition, "an effective population size of 50 is assumed sufficient to prevent inbreeding depression in the short term (over the duration of five generations) and an effective population size of 500 is sufficient to retain evolutionary potential in perpetuity."<sup>4</sup> As such, the mountain lion populations residing in the Southern and Central coast region of California are at risk of extirpation due to their low population size and genetic isolation.

# 2. Mountain lions in California's Southern and Central Coast region are at risk due to increasing threats.

The public values mountain lions and views them as an indicator of healthy environments while posing little risk to people living near them.<sup>5</sup> Americans highly value wildlife, including top carnivores such as mountain lions, and are concerned about their welfare and conservation.<sup>6</sup> Yet, these animals remain incredibly rare and require protection from major threats, which are by and large human caused. Threats to California's Southern and Central Coast mountain lion populations include, but are not limited to the following:

Habitat loss and fragmentation: Habitat loss and fragmentation is the largest threat to long-term survival of mountain lion populations in California. The U.S. human population is expected to grow to 60 million by 2050, meaning more development, more deforestation and less wild and open spaces.<sup>7</sup> Even lands remaining undeveloped will become increasingly fragmented by infrastructure developments. Roads, in particular, are a major mortality factor for small populations of mountain lions in fragmented habitat.<sup>8</sup> Not only do lions often die from vehicle collisions when trying to cross roads, they also become separated from prey sources and are not able to disperse, causing intraspecific aggression between individual lions competing for the same resources.

Mountain lions have been pushed to the far reaches of remaining wild spaces as a result of human population growth and development. This is troubling, as mountain lions and their primary prey require large habitats in order to survive. Moreover, as human population and development increase, so too do mountain lion conflicts with humans.<sup>9</sup>

Not only are wildlife habitats getting smaller, they are also increasingly disconnected from one another, reducing the ability for subadults to disperse.<sup>10</sup> This poses a major threat to the long term survival of populations that require dispersal to gain access to natural resources, and increases the potential for inbreeding.<sup>11</sup> The loss of safe passages between suitable habitat is threatening the long-term survival of populations across the U.S. as they become increasingly isolated.<sup>12</sup>

Mountain lions in California's Santa Ana Mountains are a prime example of how habitat loss and fragmentation are threatening the future survival of a lion population. Lions in the mountain range have been forced to live on a small, fragmented landscape with limited prey sources as a result of human development. The result has been increased conflicts with humans, demographic isolation and genetic restriction.<sup>13</sup> A recent study in the area concluded that mountain lions in the region had a very low



survival rate of less than 56 percent, primarily as a result of deaths from vehicle collisions and killing for mountain lion predation on livestock.<sup>14</sup>

*Inbreeding*: Inbreeding is a threat to mountain lions who are limited by their ability to disperse. Subadult males, the primary dispersers of the species, are vital to the diffusion of genes between lion populations. The loss of genetic variation typically occurs within small populations that become isolated from other populations, causing a genetic bottleneck when closely related individuals breed with one another.<sup>15</sup> Population isolation is frequently attributed to habitat fragmentation and a loss of wildlife corridors that connect populations. This was likely the case with Florida panthers, who showed signs of inbreeding through a high prevalence of cowlicks, kinked tails, sterility and heart murmurs. In order to save the critically endangered Florida panther, wildlife managers released eight female lions from Texas into the Florida population, increasing genetic diversity.<sup>16</sup>

*Poisoning:* While poisoning of mountain lions is rare, it still occurs, mainly through unintentional poisoning on private lands. The use of anticoagulant rodenticide poison to control rodents, such as in homes and yards, is a common threat to mountain lions.<sup>17</sup> Farmers and licensed pest-control companies regularly use rodenticide. Rodents who consume anticoagulant poisons can take up to 10 days to die through internal bleeding, if they are not eaten by another animal first.<sup>18</sup> Mountain lions and other predators become exposed when they consume animals who have been poisoned.

Research in the Santa Monica Mountains National Recreational Area and surrounding habitats fragmented by human development has detected substantial evidence of the exposure to anticoagulant rodenticide poisons in wild carnivores, including mountain lions, bobcats and coyotes.<sup>19</sup> Test results from the study found 95 percent of bobcats, 83 percent of coyotes and 91 percent of mountain lions—including a three-month-old kitten—were exposed to anticoagulant rodenticides.<sup>20</sup> Rodenticide and other anticoagulants can stress mountain lions so that they become susceptible to mange, resulting in dehydration, starvation and death.<sup>21</sup>

3. Protecting mountain lions ensures their ability to create trophic cascades in their ecosystems, benefiting a wide range of flora and fauna.

Mountain lions in the Southern California/Central Coast ESU must be conserved so that other wildlife and wild spaces may continue to receive critical ecosystem benefits. Mountain lions serve important ecological roles, including providing a variety of ecosystem services.<sup>22</sup> Maehr et al. (2001) assert the importance of these cats on the landscape:

One aspect of cougar ecology that is becoming less debatable is its role in biotic communities . . . . *P. concolor* has the potential to structure the distribution and demography of prey (Logan and Sweanor 2001, Maehr et al. 2001). Browse lines, highway collisions, Lyme disease (Wilson and Childs 1997), loss of biodiversity (Alverson et al. 1988, Waller and Alverson 1997), and other problems associated with overabundant white-tailed deer (*Odocoileus virginianus*) hint at the benefits of returning such a predator . . .<sup>23</sup>



As such, conserving these large cats on the landscape creates a socio-ecological benefit that far offsets any societal costs.<sup>24</sup> Their protection and conservation has ripple effects throughout their natural communities. In Zion National Park, researchers found that by modulating deer populations, mountain lions prevented overgrazing near fragile riparian systems. The result was more cottonwoods, rushes, cattails, wildflowers, amphibians, lizards and butterflies, as well as deeper, but narrower stream channels.<sup>25</sup> Multiple recent studies have found that mountain lions leave more carrion--even more than wolves--which is significantly beneficial to ecosystems and further enhances biodiversity.<sup>26</sup>

Biologists consider mountain lions an "umbrella" species—by protecting these cats and their large habitat, a wide array of additional plants and animals in this habitat will also be protected.<sup>27</sup> Mountain lions, as with most large carnivores, are also considered a keystone species because they help drive the ecosystems in which they live.<sup>28</sup> As a large predator, mountain lions regulate many of the other species in their communities, including herbivores, who then regulate the plant community.<sup>29</sup> Importantly, mountain lions limit competition by killing smaller carnivores, such as coyotes, which increases biological diversity.

Mountain lions reduce deadly deer-vehicle collisions<sup>30</sup> and help maintain the health and viability of ungulate populations by preying on sick individuals, reducing the spread of disease.<sup>31</sup> This ecosystem benefit is increasingly important as ungulate diseases, such as chronic wasting disease and brucellosis, continue to spread throughout the country.<sup>32</sup>

#### 4. There is no conflict between CESA listing and Proposition 117.

Contrary to arguments submitted by the California Cattlemen's Association (CCA) and California Farm Bureau Federation (CFBF), there is no conflict between the petitioned CESA listing and Proposition 117. CCA and CFBF assert that CESA listing would functionally override Proposition 117's allowance for take of mountain lions in certain limited circumstances, including take pursuant to permits issued by Department personnel in cases of confirmed livestock or property damage. Cal. Fish and Game Code §§ 4800(b)(1) (take prohibition); 4801-07 (exceptions to take prohibition). They contend that CESA listing would impose additional preconditions to the issuance of mountain lion take permits beyond what is required by Proposition 117.

CCA and CFBF's arguments miss the mark because Proposition117's take permit provisions could be accommodated without conflict by a parallel CESA provision, such that any mountain lion take permit currently issuable under Proposition 117 would likely remain so even after CESA listing. CESA expressly authorizes the Department to issue take permits allowing non-governmental "individuals" to take listed species "for...management purposes." Cal. Fish and Game Code § 2081(a). The depredation-related Proposition 117 take allowances that CCA and CFBF point to as the source of irresolvable conflict would, in fact, likely qualify as the issuance of permits "for...management purposes" and thus would also fall into an exception under CESA's take prohibition. This is true even as to Proposition 117's verbal authorization and in-the-moment immediate take provisions, since in both cases the Department is still required to issue a permit promptly thereafter. Cal Fish and Game Code §§ 4803, 4807. As such, there is no conflict between the depredation permit allowances contained within Proposition 117 and the management take permits allowable under Section 2801(a) of CESA. Finally, we note that CCA and



CFBF's focus on the more burdensome CESA "incidental take" permit process under Section 2081(b) is a red herring – the take permit provision that would actually operate to harmonize CESA with Proposition 117 is the "management purposes" take permit under Section 2081(a).

Furthermore, Proposition 117 must be liberally interpreted to further its purposes, which are consistent with CESA listing. As noted by petitioners in their initial CESA petition, it was the express intent of California voters that Proposition 117 "be liberally construed to further its purposes," Prop. 117 § 9, which are strengthening protections for this "specially protected mammal." Cal. Fish and Game Code § 4800(a). The petitioned CESA listing is entirely consistent with this goal; indeed, the best available science shows that it is *necessary* to the achievement of this goal. To the extent that there is any tension or ambiguity as between the interactions between CESA listing and Proposition 117, they must be resolved in favor of the underlying conservation purpose of both laws. Prop. 117 § 9. Interpreting Proposition 117 to preclude the grant of additional state law protections under CESA would defy both common sense and the will of the voters.

#### 5. The Commission is obligated to list this ESU if science shows that listing is warranted.

The Commission is legally obligated to list this ESU pursuant to CESA, even if potential tension with other state law exists. CESA listing is not discretionary. Rather, the Commission is required to add a species to the list if the best available science shows that listing is warranted. Cal. Fish and Game Code § 2070 ("The commission *shall* add or remove species from either list if it finds, upon the receipt of sufficient scientific information pursuant to this article, and based solely upon the best available scientific information, that the action is warranted.") (emphasis added). To deny the listing petition on the basis of an ill-founded fear of conflict with other provisions of state law would violate the Commission's clear statutory duty to add the petitioned ESU to California's list of Threatened and Endangered Species. Neither Proposition 117 nor any other state law operates to override this clear statutory directive.

#### 6. Conclusion.

California's mountain lions are an iconic symbol of the state and are highly valued among its residents and visitors alike. These large carnivores hold immense intrinsic value as well as play a vital role in supporting other wildlife as well as ecosystem functions. We must ensure that mountain lion populations are given the best opportunity possible to maintain their range throughout the state, including in the Southern and Central Coast regions. Therefore, we request this Commission list mountain lions in this ESU as Threatened under CESA, protecting them from unnecessary harm and ensuring their continued existence in their current range.

Sincerely,

Sabrina Ashjian California State Director The Humane Society of the United States



<sup>&</sup>lt;sup>1</sup> R. A. Beausoleil et al., "Research to Regulation: Cougar Social Behavior as a Guide for Management," *Wildlife Society Bulletin* 37, no. 3 (2013).

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<sup>5</sup> Harry C. Zinn et al., "Societal Preferences for Mountain Lion Management Along Colorado's Front Range. Colorado State University, Human Dimensions in Natural Resources Unit," *5th Mountain Lion Workshop Proceedings* (1996).

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<sup>12</sup> Beier, P. 2010.

<sup>13</sup> Vickers, T. W., et al. 2015.

<sup>14</sup> Vickers, T. W., et al. 2015.

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<sup>19</sup> Riley, S. P. D., et al. 2007.

<sup>20</sup> Riley, S. P. D., et al. 2007.

<sup>21</sup> Riley, S. P. D., et al. 2007.

<sup>22</sup> e.g., J. L. Weaver, P. C. Paquet, and L. F. Ruggiero, "Resilience and Conservation of Large Carnivores in the Rocky Mountains," *Conservation Biology* 10, no. 4 (1996); W.J. Ripple and R.L. Beschta, "Linking a Cougar Decline, Trophic Cascade, and Catastrophic Regime Shift in Zion National Park," *Biological Conservation* 133 (2006); J. A. Estes et al., "Trophic Downgrading of Planet Earth," *Science* 333, no. 6040 (2011); L. Mark Elbroch and Heiko U. Wittmer, "Table Scraps: Inter-Trophic Food Provisioning by Pumas," *Biology letters* 8, no. 5 (2012); L. Mark Elbroch et al., "Nowhere to Hide: Pumas, Black Bears, and Competition Refuges," *Behavioral Ecology* 26, no. 1 (2015); L. M. Elbroch et al., "Vertebrate Diversity Benefiting from Carrion Provided by Pumas and Other Subordinate Apex Felids," *Biological Conservation* 215 (2017).

<sup>23</sup> D. S. Maehr et al., "Eastern Cougar Recovery Is Linked to the Florida Panther: Cardoza and Langlois Revisited," *Wildlife Society Bulletin* 31, no. 3 (2003).: 849

<sup>24</sup> Sophie L. Gilbert et al., "Socioeconomic Benefits of Large Carnivore Recolonization through Reduced Wildlife-Vehicle Collisions," *Conservation Letters* (2016).

<sup>25</sup> Ripple and Beschta, "Linking a Cougar Decline, Trophic Cascade, and Catastrophic Regime Shift in Zion National Park."; Elbroch and Wittmer, "Table Scraps: Inter-Trophic Food Provisioning by Pumas."

<sup>26</sup> "Table Scraps: Inter-Trophic Food Provisioning by Pumas."; Elbroch et al., "Vertebrate Diversity Benefiting from Carrion Provided by Pumas and Other Subordinate Apex Felids.", Elbroch et al., "Nowhere to Hide: Pumas, Black Bears, and

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-----Original Message-----From: KevinWMcAl Sent: Thursday, February 6, 2020 11:16 AM To: FGC <FGC@fgc.ca.gov> Subject: Protect California's Struggling Mountain Lions

Dear California Fish and Game Commission,

I'm writing to urge you to list Southern California and Central Coast mountain lions as "threatened" under the state's Endangered Species Act.

As you know these mountain lions face multiple threats to their survival. Over the past century, habitat loss and fragmentation have led to severe genetic isolation and inbreeding. These big cats are also victims of vehicle collisions, rat poisons and depredation kills, among other threats.

We're in the middle of an extinction crisis, and we simply can't afford to wait to protect keystone species like the mountain lion. As the last remaining large carnivore in Southern California and the Central Coast, mountain lions are vital to maintaining biodiversity. Without them, increased deer populations would overgraze and cause stream banks to erode. And many scavengers, like California condors and numerous insects, that feed on mountain lion prey, would lose a reliable food source. In fact mountain lions exert such a great impact on the environment that songbirds, fish, amphibians, reptiles, rare native plants and butterflies would all potentially diminish if this apex predator were lost.

Please — move forward quickly to protect these struggling mountain lion populations knowing you have my full support.

Sincerely, Kevin W. McAlister From:

Sent: Friday, February 7, 2020 10:48 AM

To: FGC <FGC@fgc.ca.gov>

Subject: Do Not Protect California's Mountain Lions

Dear California Fish and Game Commission,

I'm writing to urge you to NOT list Southern California and Central Coast mountain lions as "threatened" under the state's Endangered Species Act.

As you know the Center for Biodiversity is using emotion not science stating, "We're in the middle of an extinction crisis, and we simply can't afford to wait to protect keystone species like the mountain lion".

There is no need for CDFW to protect mountain lions, there is already legislation that protects them. CDFW should do what other states do, have a draw or license to hunt mountain lions, especially near cities where the negative impacts could be extreme.

Sincerely,

Wendy Tochihara

# Memorandum

Date: February 3, 2020

- To: Melissa Miller-Henson Executive Director Fish and Game Commission
- From: Charlton H. Bonham Director

# Subject: Initial Evaluation of the Petition to List Shasta Snow-Wreath (*Neviusia cliftonii*) as Endangered under the California Endangered Species Act

The Department of Fish and Wildlife (Department) has completed its initial evaluation of the Petition to list Shasta snow-wreath (*Neviusia cliftonii*) as an endangered species under the California Endangered Species Act, Fish and Game Code section 2050 et seq. The Fish and Game Commission (Commission) received the Petition from Ms. Kathleen Roche on September 30, 2019. Pursuant to Fish and Game Code section 2073, the Commission referred the Petition to the Department on October 10, 2019. In accordance with Fish and Game Code section 2073.5, subdivision (b), on November 6, 2019, the Department requested a 30-day extension to further analyze the Petition and complete its evaluation report.

The Department completed the attached Petition evaluation report as required by Fish and Game Code section 2073.5. (See also Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1).) The Department's evaluation report delineates the categories of information required in a petition, evaluates the sufficiency of the available scientific information regarding each of the Petition components, and incorporates additional relevant information that the Department possessed or received during the review period. Based upon the information contained in the petition and other relevant information in the Department's possession, the Department has determined that there is sufficient scientific information available at this time to indicate that the petitioned action may be warranted. The Department recommends that the Petition be accepted and considered.

If you have any questions or need additional information, please contact Chad Dibble, Deputy Director, Ecosystem Conservation Division at (916) 653-6956 or by email at chad.dibble@wildlife.ca.gov or Richard Macedo, Chief, Habitat Conservation Planning Branch at (916) 653-3861 or by email at richard.macedo@wildlife.ca.gov.

Attachment

Melissa Miller-Henson, Executive Director Fish and Game Commission February 3, 2020 Page 2

ec: Department of Fish and Wildlife

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REPORT TO THE FISH AND GAME COMMISSION

# EVALUATION OF A PETITION FROM KATHLEEN ROCHE TO LIST SHASTA SNOW-WREATH AS ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT



Photo of Neviusa cliftonii by Belinda Lo, licensed under CC BY-NC-SA 3.0

Prepared by California Department of Fish and Wildlife

February 2020



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# I. Executive Summary

On September 30, 2019, Ms. Kathleen Roche (Petitioner) submitted a Petition (Petition) to the Fish and Game Commission (Commission) to list Shasta snow-wreath (*Neviusia cliftonii*) as endangered pursuant to the California Endangered Species Act (CESA), Fish and Game Code Section 2050 *et seq*.

The Commission referred the Petition to the Department of Fish and Wildlife (Department) in accordance with Fish and Game Code Section 2073. (Cal. Reg. Notice Register 2019, No. 15-Z, p. 575.) Pursuant to Fish and Game Code Section 2073.5 and Section 670.1, subdivision (d)(1), of Title 14 of the California Code of Regulations, the Department prepared this Petition evaluation report (Petition Evaluation). The purpose of the Petition Evaluation is to assess the scientific information in the Petition in relation to other relevant and available scientific information possessed or received by the Department during the evaluation period, and to recommend to the Commission whether the Petition should be accepted and considered.

After reviewing the Petition and other relevant information, the Department determined the following:

- <u>Population Trend</u>. Scientific information on Shasta snow-wreath's population trends is limited; however, the Petition presents evidence that populations of Shasta snow-wreath were reduced by the filling of Shasta Dam in 1948. The Petition contains sufficient information on the population trend of Shasta snowwreath.
- <u>Range</u>. The Petition contains sufficient information on Shasta snow-wreath's geographic range.
- <u>Distribution</u>. The Petition contains sufficient scientific information on Shasta snow-wreath's distribution.
- <u>Abundance</u>. The Petition contains sufficient scientific information on Shasta snow-wreath's abundance.
- <u>Life History</u>. The Petition contains sufficient information on the known life history and ecology of Shasta snow-wreath.
- <u>Kind of Habitat Necessary for Survival</u>. The Petition contains sufficient information regarding the kind of habitat necessary for Shasta snow-wreath's survival.
- <u>Factors Affecting the Ability to Survive and Reproduce</u>. The Petition contains sufficient information to indicate that the long-term survival of Shasta snow-wreath is threatened by a number of ongoing and future threats such as habitat modification and loss, overutilization, disease, and other factors.

- <u>Degree and Immediacy of Threat</u>. The Petition discusses several projects that threaten the continued existence of Shasta snow-wreath, including the proposed project to raise Shasta Dam and several ongoing vegetation management projects. The Petition contains sufficient information to indicate that threats to the long-term survival of Shasta snow-wreath will continue or potentially worsen in the future.
- <u>Impact of Existing Management Efforts</u>. The Petition contains sufficient information to indicate that existing management efforts do not adequately protect the Shasta snow-wreath from threats to its long-term survival.
- <u>Suggestions for Future Management</u>. The Petition contains sufficient information regarding management suggestions that may aid in conserving Shasta snow-wreath.
- <u>A Detailed Distribution Map</u>. The Petition contains a detailed map of the distribution of Shasta snow-wreath.
- <u>Availability and Sources of Information</u>. The Petition contains sufficient information on the availability and sources of information used in the Petition.

The Department's Petition Evaluation is focused on the scientific information provided in the Petition as well as additional scientific information the Department possesses, or has knowledge of, regarding Shasta snow-wreath populations.

In completing its Petition Evaluation, the Department finds there is sufficient information to indicate the petitioned action may be warranted and recommends the Commission accept and consider the Petition.

# II. Introduction

# A. Candidacy Evaluation

The Commission has the authority to list a native species or subspecies as threatened or endangered under CESA. (Fish & G. Code, §§ 2062, 2067, 2070.) The listing process is the same for species and subspecies. (Fish & G. Code, §§ 2070-2079.1.)

CESA sets forth a two-step process for listing a species as threatened or endangered. First, the Commission determines whether to designate a species as a candidate for listing by evaluating whether the petition provides "sufficient information to indicate that the petitioned action may be warranted." (Fish & G. Code, § 2074.2, subd. (e)(2).) If the petition is accepted for consideration, the second step requires the Department to produce, within 12 months of the Commission's acceptance of the petition, a peer reviewed report based upon the best scientific information available that advises the Commission on whether the petitioned action is warranted. (Fish & G. Code, § 2074.6.)
Finally, the Commission, based on that report and other information in the administrative record, then determines whether the petitioned action to list the species as threatened or endangered is warranted. (Fish & G. Code, § 2075.5.)

A petition to list a species under CESA must include "information regarding the population trend, range, distribution, abundance, and life history of a species, the factors affecting the ability of the population to survive and reproduce, the degree and immediacy of the threat, the impact of existing management efforts, suggestions for future management, and the availability and sources of information. The petition shall also include information regarding the kind of habitat necessary for species survival, a detailed distribution map, and any other factors that the petitioner deems relevant." (Fish & G. Code, § 2072.3; see also Cal. Code Regs., tit. 14, § 670.1, subd. (d)(1).) The range of a species for the Department's petition evaluation and recommendation is the species' California range. (*Cal. Forestry Assn. v. Cal. Fish and Game Com.* (2007) 156 Cal.App.4<sup>th</sup> 1535, 1551.)

Within ten days of receipt of a petition, the Commission must refer the petition to the Department for evaluation. (Fish & G. Code, § 2073.) The Commission must also publish notice of receipt of the petition in the California Regulatory Notice Register. (Fish & G. Code, § 2073.3.) Within 90 days of receipt of the petition (or 120 days if the Commission grants an extension), the Department must evaluate the petition on its face and in relation to other relevant information and submit to the Commission a written evaluation report with one of the following recommendations:

- Based upon the information contained in the petition, there is not sufficient information to indicate that the petitioned action may be warranted, and the petition should be rejected; or
- Based upon the information contained in the petition, there is sufficient information to indicate that the petitioned action may be warranted, and the petition should be accepted and considered.

(Fish & G. Code, § 2073.5, subds. (a)-(b).) The Department's candidacy recommendation to the Commission is based on an evaluation of whether the petition provides sufficient scientific information relevant to the petition components set forth in Fish and Game Code Section 2072.3 and the California Code of Regulations, Title 14, Section 670.1, subdivision (d)(1).

In *Center for Biological Diversity v. California Fish and Game Commission* (2008) 166 Cal.App.4th 597, the California Court of Appeals addressed the parameters of the Commission's determination of whether a petitioned action should be accepted for consideration pursuant to Fish and Game Code Section 2074.2, subdivision (e), resulting in the species being listed as a candidate species. The court began its discussion by describing the standard for accepting a petition for consideration previously set forth in *Natural Resources Defense Council v. California Fish and Game Commission* (1994) 28 Cal.App.4th 1104:

As we explained in *Natural Resources Defense Council*, "the term 'sufficient information' in section 2074.2 means that amount of information, when considered with the Department's written report and the comments received, that would lead a reasonable person to conclude the petitioned action may be warranted." The phrase "may be warranted" "is appropriately characterized as a 'substantial possibility that listing could occur." "Substantial possibility," in turn, means something more than the one-sided "reasonable possibility" test for an environmental impact report but does not require that listing be more likely than not.

(*Center for Biological Diversity, supra*, 166 Cal.App.4th at pp. 609-10 [internal citations omitted].) The court acknowledged that "the Commission is the finder of fact in the first instance in evaluating the information in the record." (*Id.* at p. 611.) However, the court clarified:

[T]he standard, at this threshold in the listing process, requires only that a substantial possibility of listing could be found by an objective, reasonable person. The Commission is not free to choose between conflicting inferences on subordinate issues and thereafter rely upon those choices in assessing how a reasonable person would view the listing decision. Its decision turns not on rationally based doubt about listing, but on the absence of any substantial possibility that the species could be listed after the requisite review of the status of the species by the Department under [Fish and Game Code] section 2074.6.

(Ibid.)

## B. Petition History

On September 30, 2019, the Petitioner submitted the Petition to the Commission. On October 10, 2019, the Commission referred the Petition to the Department for evaluation. On November 6, 2019, the Department requested a 30-day extension of the 90-day Petition evaluation period. The Commission approved the extension request at its December 11, 2019 meeting. The Department submitted this Petition Evaluation to the Commission on February 3, 2020.

The Department evaluated the scientific information presented in the Petition as well as other relevant information the Department possessed at the time of review. The Commission did not receive new information from the public during the Petition Evaluation period pursuant to Fish and Game Code Section 2073.4. Pursuant to Fish and Game Code Section 2072.3 and Section 670.1, subdivision (d)(1), of Title 14 of the California Code of Regulations, the Department evaluated whether the Petition included sufficient scientific information regarding each of the following petition components to indicate whether the petitioned action may be warranted:

- Population trend;
- Range;
- Distribution;
- Abundance;
- Life history;
- Kind of habitat necessary for survival;
- Factors affecting the ability to survive and reproduce;
- Degree and immediacy of threat;
- Impact of existing management efforts;
- Suggestions for future management;
- Availability and sources of information; and
- A detailed distribution maps.
- C. Overview of Shasta Snow-Wreath Ecology

Shasta snow-wreath (*Neviusia cliftonii*) is a dicot shrub in the rose family (Rosaceae) that is native to California and is endemic (limited) to northern California. Shasta snow-wreath is one of only two species in the genus *Neviusia*. The other species is *Neviusia alabamensis*, a rare endemic of the southeast United States. The species was first described by Shevock et al. (1992). Shasta snow-wreath is found exclusively in western Shasta County around the perimeter of Shasta Lake in northern California and is known from a total of 24 occurrences. Eighteen of the occurrences are on federal land, and six are partially or completely on non-federal land (private or other).

Shasta snow-wreath was not known to science until 1992, when it was discovered northeast of Redding, California and described as a new species. Shasta snow-wreath likely remained unrecognized because its flowers, the most distinguishing feature, only appear for a week to ten days in late April or early May. When not in flower, the wiry, deciduous shrub with soft, tooth-edged leaves resembles common shrubs such as ocean spray (*Holodiscus discolor*) and ninebark (*Physocarpus capitatus*) (Shevock et al. 1992).

Another factor that helped Shasta snow-wreath remain undiscovered for so long is that it grows in places dominated by poison oak (*Toxicodendron diversilobum*), making it difficult to access, and its range is far from any university and in a geographic area that

is poorly explored (Shevock et al. 1992). There are no herbarium specimens of Shasta snow-wreath that were collected before 1992 (Roche 2019).

The inflorescence of Shasta snow-wreath is an umbel-like cluster of three to five flowers. Each flower is a ball of approximately 50 long, whiskery white stamens that are each about half a centimeter long. There are sometimes white petals surrounding the stamens, but the petals are often absent (Shevock et al. 1992). The reproductive biology of Shasta snow-wreath is poorly understood. It is unknown if seeds can be produced by selfing (fertilization by pollen from the same plant) or if cross-pollination (fertilization by pollen from another plant) is necessary. It is also not known if pollination occurs via wind or by insects, but from the structure of the flowers, it appears that Shasta snow-wreath might be wind-pollinated (Roche 2019).

The Petition states that there have been no observations of seedlings of Shasta snowwreath, and little is known about its life-cycle stages, time from seedling to maturity, or longevity of individual plants. Shasta snow-wreath is presumed to have originated during the Eocene tertiary geological period (56 to 33.9 million years ago), and is thought to have been more widespread (DeVore et al. 2004, 2005; DeVore and Pigg 2007). Species and genera with ancient origins that once had a more continuous and widespread distribution are regarded as "relicts". Available data suggest that Shasta snow-wreath is a relict, long-lived, clonally propagated shrub that occasionally produces seeds, apparently from sexual reproduction, but the seeds have not been observed germinating in the wild, and propagation attempts have been unsuccessful (Ertter 1993; Stebbins 1993).

## III. Sufficiency of Scientific Information to Indicate the Petitioned Action May Be Warranted

The Petition components are evaluated below, with respect to Fish and Game Code Section 2072.3 and Section 670.1, subdivision (d)(1), of Title 14 of the California Code of Regulations.

## A. Population Trend

1. Scientific Information in the Petition

The Petition discusses population trend for Shasta snow-wreath under the "Population Status" section on pages 20 to 21. The Petition indicates that Shasta snow-wreath is presumed to have been more widespread, and populations more connected along river corridors. The filling of Shasta Lake in 1948 likely inundated many populations because several populations currently reach their lower limit at the edge of Shasta Lake (Lindstrand and Nelson 2006; DeWoody et al. 2012). Shasta snow-wreath has only been known to science since 1992, so information on population trends of the likely

long-lived shrub is limited. Monitoring was initiated for Shasta snow-wreath in 2011, and population data was collected between 2011 and 2013. Monitoring data collected from this study provides a baseline for monitoring future population trends (Jules et al. 2017).

# 2. Conclusion

Scientific information on Shasta snow-wreath's population trends is limited; however, the Petition presents evidence that populations were likely reduced by the filling of Shasta Lake in 1948. The Petition contains sufficient information on population trends of Shasta snow-wreath.

## B. Geographic Range

1. Scientific Information in the Petition

Information regarding geographic range of Shasta snow-wreath appears on pages 10 through 12, and page 21 of the Petition. Shasta snow-wreath is endemic to California, occurring only near Shasta Lake in Shasta County. The total range covers about 250 square miles. The Petition indicates that Shasta snow-wreath is presumed to have been more widespread before the filling of Shasta Lake in 1948 because many populations of Shasta snow-wreath reach their lower limit at the full pool line of Shasta Lake (Lindstrand and Nelson 2006; DeWoody et al. 2012). The Petition also indicates that Shasta snow-wreath is likely unable to expand its range due to its relict status, lack of observed sexual reproduction, and topographic limitations and associated climate differences.

2. Conclusion

The Petition includes sufficient information to describe Shasta snow-wreath's geographic range.

## C. Distribution

1. Scientific Information in the Petition

The Petition discusses current and historic distribution on pages 10 through 14. There are 24 documented element occurrences (EOs) of Shasta snow-wreath in the California Natural Diversity Database (CNDDB) (CNDDB 2019; Roche 2019). Extensive surveys for Shasta snow-wreath within its known distribution and beyond took place between 1992 and 2016 (Roche 2019). The Petition indicates it is unlikely that many more additional populations of Shasta snow-wreath will be discovered since much of its suitable habitat has been extensively searched.

The Petition provides a map of all known occurrences of Shasta snow-wreath on page 12 (Petition Figure 2), which illustrates the distribution of the species. The map is included below as Figure 1.





Source: Kathleen S. Roche 2019a. Prepared from Google Earth Image 05/11/19 and CNDDB Element Occurrences 2018.

2. Other Relevant Scientific Information

The distribution of occurrences shown in Figure 1 closely matches the locations of occurrences of Shasta snow-wreath in the CNDDB (CNDDB 2019).

3. Conclusion

The information provided in the Petition on distribution of Shasta snow-wreath is consistent with other information available to the Department from occurrence records. The Petition contains sufficient scientific information to describe Shasta snow-wreath's distribution.

## D. Abundance

1. Scientific Information in the Petition

The Petition discusses abundance in the "Natural History" section on pages 26 through 28. Shasta snow-wreath appears to be a clonally propagating shrub that is capable of significant vegetative reproduction. Although this species occasionally produces seeds, its seeds are not yet confirmed to germinate in the wild or in attempts to propagate them (Ertter and Shevock 1993). The Petition indicates that all occurrences have some degree of genetic relatedness and states that known occurrences of Shasta snowwreath may be one or several very large clones. For clonal species, the term "genet" is used to describe a group of genetically identical individuals that all originate vegetatively from a single ancestor. Each unit (seemingly individual plant) is referred to as a "ramet". Above ground, these ramets most often appear to be distinct individuals, but they may all be clones of the same plant. The Petition describes a study conducted in 2009 that sampled 21 subpopulations of Shasta snow-wreath to investigate the number of genetic individuals (genets) in each subpopulation. In this study, 21 subpopulations from 17 CNDDB occurrences were sampled (DeWoody et al. 2012; CNDDB 2019). The results of the study indicated that five subpopulations of Shasta snow-wreath were composed of a single genet each. The average number of genets per subpopulation was 3.14, and there was a maximum of 15 genets identified in a single subpopulation (DeWoody et al. 2012; Roche 2019). Some genets occurred in multiple subpopulations (DeWoody et al. 2012). See Table 1, below, for a summary of genets identified per sampled subpopulation.

CNDDB EO #	Name of Sampling Location	Genets
1	Cedar Creek	6
2	Squaw Creek	2
3	Ellery Creek	2
3	South Ellery Creek	4
5	Curl Creek	4
6	Campbell Creek	2
7	Low Pass	4
10	Cove Creek	2
10	South of Cove Creek	4
11	Ripgut Creek	2
12	Stein Creek	15
14	Waters Gulch	2
15	Keluche Creek	2
16	Blue Ridge East	1
16	Blue Ridge Mid	1
16	Blue Ridge West	1
17	Flat Creek	3
18	Brock Creek	3
19	West of Stein Creek	2
20	Shasta Caverns	1
21	Jones Valley	1

**Table 1.** Number of Genets Per Shasta Snow-Wreath

 Subpopulation as Estimated in DeWoody et. al. (2012)

2. Other Relevant Scientific Information

The Department's CNDDB contains information on population size for most occurrences of Shasta snow-wreath. It is assumed that population estimates in the CNDDB represent the number of ramets at each occurrence. Estimates of population size range from ten to thousands of plants (CNDDB 2019). Information on population size from the CNDDB is summarized in Table 2, below. Table 2 also includes information on threats to each occurrence as presented in the Petition. Additional discussion of threats is included in the Factors Affecting Ability to Survive and Reproduce section of this report.

**Table 2.** Summary of Occurrence Information and Threats (adapted from Table 1 in Petition). Occurrence Information as provided in the CNDDB (2019), and Threats as provided in Table 1 of the Petition (Roche 2019).

CNDDB EO #	Size (acres)	Occurrence Information (CNDDB 2019)	Ownership	Threats (as stated in Table 1 in the Petition)
1	18	Dominant understory shrub along with western poison oak ( <i>Toxicodendron diversilobum</i> ).	Non- federal	Potential mining; the Hosselkus Limestone Formation is a high-quality source material for cement production. Fires. Inferred threats: climate change.
2	30	Dominant understory shrub in association with western poison oak ( <i>Toxicodendron diversilobum</i> ).	Federal	Not specified in EO record. In dense vegetation near limestone outcrop. Inferred threats: physical removal through mining or road construction, wildfire, climate change.

CNDDB EO #	Size (acres)	Occurrence Information (CNDDB 2019)	Ownership	Threats (as stated in Table 1 in the Petition)
3*	71	Many thousands of plants in 1993; 100-200 plants on the east side of Gilman Road in 2010; Unknown Number in 2007 and 2014	Federal	Surrounded by invasive plants ( <i>Rubus</i> <i>armeniacus</i> and <i>Cytisus scoparius</i> ) in 1993. Burned over in Hirz fire 2018. Inferred threats: invasive plants, wildfire, climate change.
5	57	2000-3000 plants observed in the 2 western polygons combined in 1993. 50 plants observed in far eastern polygon and >500 seen in far western polygon in 2010	Federal	Not specified in EO record. Inferred threats: wildfire, climate change.
6	8	Greater than 1000 plants observed in 1993; 3000 plants observed in 2010; unknown number observed in 2014	Federal	Possibly threatened by logging in 1993. Road maintenance, raised lake level, and noxious weed invasion in 2010.
7	72	Thousands of plants observed in 1993	Federal	Occurrence is found near a jeep trail. Inferred threats: physical removal, wildfire, climate change.
8	9	1000 plants observed in 1996. Mostly small, widely spaced plants compared to other occurrences.	Federal and Private	Not specified in EO record. Inferred threats: wildfire, climate change.
9	0	No information on population size	Non- federal	Close to mining and roads. Inferred threats: physical removal, sedimentation, invasive species.
10	14	Approximately 20-50 plants seen in 2003. Thousands of plants observed in 2006. Unknown number observed in 2009 and 2014.	Federal	Not specified in EO. Inferred threats: inundation from Shasta Lake, wildfire, climate change.
11	2	Approximately 100 plants seen in 2003	Federal	Not specified in EO. Inferred threats: inundation from Shasta Lake, wildfire, climate change.
12**	57	2 northern polygons: extensive population with thousands of plants seen in 2003, unknown number of plants observed in 2004, 2009, and 2014. Remaining polygons had thousands of plants in 2010	Federal and Private	Timber harvest proposed for area on private land in 2010 but protection measures will be used. Inferred threats wildfire, climate change, invasive species.
14	28	Large population seen in 1994. Unknown number observed during other years (most recently in 2012).	Federal	Previous trail construction probably damaged/destroyed some plants (2001). Scotch broom is encroaching (2010).
15	2	500-1000 plants seen in 2003. Unknown number of plants observed in 2004 and 2014	Federal	Not specified in EO. Inferred threats: inundation from Shasta Lake, wildfire, climate change.
16	7	In 2003, thousands of plants seen at N colony and 250-350 seen at S colony. Unknown number of plants observed in N and S colonies in 2004. 20-30 plants observed in middle colony in 2009. Unknown number of plants across site in 2014.	Federal	Not specified in EO. Inferred threats: inundation from Shasta Lake, wildfire, climate change.

<sup>\*</sup> Includes former EO #4. \*\* Includes former EO #13

CNDDB EO #	Size (acres)	Occurrence Information (CNDDB 2019)	Ownership	Threats (as stated in Table 1 in the Petition)
17	7	1000's of plants observed in 2007.	Federal	Not specified in EO. Inferred threats: wildfire, climate change, possible disturbance from off-highway vehicles.
18	5	100+ plants observed in 2004. Unknown number of plants observed in 2014.	Federal	Not specified in EO. Inferred threats: inundation from Shasta Lake, wildfire, climate change.
19	10	1000's of plants observed in 2006.	Federal	Not specified in EO. Inferred threats: located in dense vegetation, wildfire, invasive species, climate change.
20	2	Northern polygon: fewer than 100 plants observed in 2007, unknown number of plants observed in 2014. Southern polygon: 12 plants observed in 2014.	Federal	Not specified in EO. Inferred threats: dense vegetation, wildfire, invasive species, climate change.
21	4	10-15 plants observed in one colony and 100-200 plants observed in the other colony in 2010. Unknown number of plants observed in 2012 and 2014.	Federal	Not specified in EO. Inferred threats: roads, wildfire, invasive species, climate change.
22	3	Total number of individuals difficult to estimate due to very dense growth along creek; likely 500-1000 shrubs over about 0.69 acre in 2012.	Private	Plants are outside of the timber harvest unit and in the future will be protected within the watercourse and lake protection zone.
23	38	7100+ plants observed in 2012; difficult to determine number of plants since population is very large with some dense clumps. 2500+ estimated in 2013. 5000+ estimated in 2014. Plants were not continuous and were patchy in portions of site.	Private	Portions of site may be threatened by blackberries choking out <i>Neviusia</i> . Majority of population outside harvest unit.
24	1	20-30 plants observed in 2015; small scattered population.	Federal	Not specified in EO. Inferred threats: inundation from Shasta Lake, wildfire, climate change.
25	8	In 2014, northern polygon had 1600- 2150 plants and southern polygon had 100-125 plants.	Federal	Not specified in EO. Inferred threats: wildfire, invasive species, climate change, possibly inundation.
26	1	150-200 plants observed in 2015.	Federal	Not specified in EO. Inferred threats: mining, wildfires, invasive species, climate change.

## 3. Conclusion

The Petition contains sufficient scientific information on Shasta snow-wreath's abundance.

## E. Life History

1. Scientific Information in the Petition

The Petition discusses the life history of Shasta snow-wreath on pages 21 through 31. The Petition describes Shasta snow-wreath as an endemic, relict, long-lived, clonally

propagating shrub in the rose family (Rosaceae). Shasta snow-wreath occasionally produces seeds, apparently from sexual reproduction, but seeds have not been confirmed to germinate in the wild or in attempts to propagate them (Ertter and Shevock 1993). Little is known about the reproductive biology of Shasta snow-wreath. It is unknown if pollination occurs via wind or by insects, but from the structure of the flowers, it appears that Shasta snow-wreath may be wind-pollinated. It is not known if the seeds are produced from selfing (fertilization by pollen from the same plant) or from cross-pollination (fertilization by pollen from another plant). There are no recorded observations of insects visiting blossoms of Shasta snow-wreath, and Ertter and Shevock (1993) indicate that the blossoms have no scent. There have been no observations of seedlings of Shasta snow-wreath, and little is known about its life-cycle stages, time from seedling to maturity, or longevity of individual plants (Roche 2019).

2. Conclusion

The Petition presents sufficient information on the known life history of Shasta snowwreath.

- F. Kind of Habitat Necessary for Survival
  - 1. Scientific Information in the Petition

The Petition describes Shasta snow-wreath habitat on pages 33 through 37. Shasta snow-wreath grows in the dense understory of black oak (*Quercus kelloggii*) and yellow pine (*Pinus ponderosa*) dominated mixed conifer forests and foothill pine (*Pinus sabiniana*) and blue oak (*Quercus douglasii*) woodland around Shasta Lake north of Redding, California (Shevock et al. 1992; Lindstrand and Nelson 2005a, 2005b; Jules et al. 2017; CNDDB 2019). Shasta snow-wreath occupies non-wetland sites on lower slopes of steep mountain valleys on various aspects and occurs in riparian sites within the yellow pine forest community (Calflora 2019). The Petition provides a list of plant species that grow in association with Shasta snow-wreath on pages 33 through 35.

The Petition indicates that Shasta snow-wreath originally was thought to occur only on limestone but is now documented as occurring on other substrates (Lindstrand and Nelson 2005a; Shevock et al. 2005; Lindstrand and Nelson 2006).

The Petition indicates that the area of western Shasta County where Shasta snowwreath occurs experiences a Mediterranean climate with hot, dry summers and wet, cool winters. Winter temperatures at lower elevations are mostly above freezing, and summer temperatures are very high. Mean annual precipitation varies from approximately 70 inches in the upper portions of the watersheds to nearly 40 inches at the lower end. About 90 percent of the precipitation falls between October and April, mostly as rain. Only the highest peaks hold snow into the summer. Summer thunderstorms are common and can release significant localized rain. These storms can also be dry with conditions that encourage fire ignition and spread from lightning strikes.

2. Conclusion

The Petition presents sufficient information regarding the kind of habitat necessary for Shasta snow-wreath's survival.

## G. Factors Affecting the Ability to Survive and Reproduce

1. Scientific Information in the Petition

The Petition discusses the factors affecting Shasta snow-wreath's ability to survive and reproduce on pages 42 through 58 under the Threats section. The Petition identifies the following factors as threats to Shasta snow-wreath: (1) modification or curtailment of habitat or range; (2) overutilization; (3) disease and predation; (4) existing regulatory mechanisms; and (5) other factors. These factors are discussed separately under the headings below.

## Modification or curtailment of habitat or range:

Inundation and other disturbances associated with the Proposed Shasta Dam Project. The Petition indicates that Shasta snow-wreath is threatened by significant destruction, modification, and curtailment of habitat and range as a result of a number of proposed actions. The Petition discusses the proposed U.S. Bureau of Reclamation Action project to raise Shasta Dam as the primary threat to Shasta snow-wreath and its habitat. If implemented, the project at the highest water level would inundate up to an estimated 32,300 acres of land surrounding the existing Shasta Lake, and would destroy known Shasta snow-wreath occurrences and potential habitat, as well as change hydrology and drainage of habitat areas. The Petition indicates that nine occurrences of Shasta snow-wreath will be partly or completely inundated by the proposed raising of Shasta Dam. The Petition also indicates that another eight occurrences would be impacted by other actions associated with raising Shasta Dam, such as relocating roads, bridges, campgrounds, and other facilities. The Petition states that "62 percent of all known occurrences of the plant species" will be affected by raising the Shasta Dam. But the Department's calculations indicated that 71 percent (17 of 24 occurrences) of the known occurrences would be impacted by the Shasta Dam project. The Department contacted the Petitioner to clarify the number of occurrences that would be affected by the Shasta Dam project. The Petitioner confirmed that the Petition correctly states 17 populations would be affected by the raising of Shasta Dam, and indicated that she inadvertently left two more occurrences out of her calculations that would likely be inundated by the Shasta Dam project. With these two additional occurrences included, a total of 19 of 24

occurrences (79 percent) will be affected by the Shasta Dam Project (K. Roche pers. comm. 2019).

Other land management actions. The Petition also discusses other land management actions that may affect Shasta snow-wreath habitat. The Petition notes that habitat may be modified as a result of ongoing management of National Forest System Lands for fire resilience. The Green-Horse Habitat Restoration and Maintenance Project (Green-Horse Project) (Myers 2016) and the Cow Creek Strategic Fuels Reduction Plan Update (Cow Creek Project) (WSRCD 2010) are two fire resilience projects described in the Petition with potential to affect Shasta snow-wreath and associated habitat. The Green-Horse Project includes activities such as: (1) prescribed broadcast burning or under burning; (2) hand thinning and pruning of small trees and brush followed by hand pilling and pile burning; and (3) construction of a 7.41 kilometer (4.61 mile) (1.6 hectares [4 acres]) dozer line to assist fire managers in safely conducting prescribed fire. Eight occurrences of Shasta snow-wreath are documented within the Green-Horse Project area (West 2015; Myers 2016; Roche 2019). The Petition indicates that under the selected alternative for the Green Horse project, a low-intensity fire would damage some above-ground portions of individual plants, while underground portions would be unaffected, and plants would recover in the short-term. The Petition further discusses that a low-intensity surface fire would likely indirectly benefit Shasta snow-wreath populations by reducing riparian cover and competition for resources. The Petition indicates that the Cow Creek Project includes proposed fuel breaks that may overlap the distribution of Shasta snow-wreath (WSRCD 2010).

The Petition discusses the Packers Bay Invasive Plant Species Removal Project (Packers Bay Project) (Kennedy 2018) as a land management action that could pose a threat to Shasta snow-wreath. The Packers Bay Project includes removing non-native invasive broom species [Scotch broom (*Cytisus scoparius*), French broom (*Genista monspessulana*), and Spanish broom (*Spartium junceum*)] infestations and re-establishing native vegetation on approximately 112 acres of National Forest System lands. Vegetation removal actions, including use of herbicides, would occur within the known distribution of Shasta snow-wreath (Kennedy 2018), although there are measures in place to protect sensitive species during herbicide application (Kennedy 2018; EPIC 2019), and removal of invasive species could benefit the Shasta snow-wreath (EPIC 2019).

The Petition also states that U.S. Forest Service road and trail maintenance could also threaten Shasta snow-wreath since several populations occur immediately adjacent to roads or trails. Mining, logging, and other development within or adjacent to occurrences on private land could also impact Shasta snow-wreath by destroying habitat and/or introducing invasive species.

*Invasive species.* The Petition identifies invasive species as a threat to Shasta snowwreath and its habitat. In addition to threats from the invasive broom species described above, Himalayan blackberry (*Rubus armeniacus*) has been recorded at five populations of Shasta snow-wreath (Jules et al. 2017; CNDDB 2019). Himalayan blackberry can spread rapidly, competing for resources with native vegetation and can have severe effects on plant community composition and structure (Cal-IPC 2004).

*Wildfire.* The Petition also discusses wildfire as a potential threat to occurrences of Shasta snow-wreath, but also acknowledges that wildfires may benefit populations of Shasta snow-wreath. The Petition indicates that the Hirz Fire (2018), which burned through one Shasta snow-wreath population, removed above ground portions of Shasta snow-wreath clones, but that resprouting occurred. In addition, the Petition indicates that the California black oak woodlands and Pacific ponderosa pine-Douglas-fir forests where Shasta snow-wreath populations occur exhibit very high departures from historic fire frequencies, and this area historically experienced frequent wildfires with an average fire return rate of 12 years. The Petition notes that restoring a more frequent fire return interval through prescribed burning might benefit Shasta snow-wreath (Jules et al. 2017). Although frequent fire might benefit Shasta snow-wreath, the Petition also indicates that repeat, short-interval fires may push ecosystems into new states, dramatically changing the ecosystem characteristics due to the loss of resilience of the vegetation. The Petition notes that wildfires can also facilitate the reproduction of invasive species. The benefits and threats to Shasta snow-wreath from wildfires are not documented or quantified, but all 24 known occurrences of Shasta snow-wreath could be threatened by wildfire (Roche personal communication 2019).

The Petition also indicates that Shasta snow-wreath may be affected by a loss of suitable habitat in the event of a high-intensity wildfire; however, since Shasta snow-wreath and other riparian species typically grow in moist environments where fire is less able to spread, negative impacts from fire events may not be as severe. If a high-intensity fire altered the hydrologic regime, negative impacts to riparian species such as Shasta snow-wreath would be major and long-term. In addition, high-intensity fire would reduce soil cover (e.g., woody debris, litter, duff), which would adversely impact the structural stability of many plant species. Loss of nutrients stored in the organic layer that are vital for plant growth would also be lost or reduced in a high-intensity fire.

*Other habitat factors.* The Petition indicates that Shasta snow-wreath occurs in an area known to have unstable soils and landslides. That, coupled with Shasta snow-wreath populations growing in an area of known extreme fire and precipitation events, could result in reductions in occurrences and habitats since the risk of debris flow increases after fires.

*Climate change.* The Petition states that climate change could threaten the continued existence of Shasta snow-wreath, but it is unknown how resilient Shasta snow-wreath is to changes in temperature or moisture regimes. The Petition states that the paleo climate Shasta snow-wreath endured included warmer and drier conditions as well as colder and wetter conditions than the species currently experiences (Topel et al. 2012), indicating that Shasta snow-wreath may have considerable plasticity or adaptability to different climate regimes. However, the ability of Shasta snow-wreath to move into nearby suitable climate niches is limited due to the steep terrain, human introduced impediments, and limited dispersal cababilities.

#### **Overutilization:**

The Petition states that Shasta snow-wreath habitat is currently being overutilized for commercial, recreational, scientific, or educational purposes, and habitat use may increase in the future if the Shasta Dam is raised and brings additional human presence to the area. The Petition indicates that Shasta snow-wreath has been, and likely continues to be, collected by gardeners and botanists for growing in personal gardens and for deposit as pressed and dried herbarium specimens. The Petition also states that Shasta snow-wreath is occasionally available from commercial nurseries.

## Disease and predation:

The Petition identifies disease and predation as possible threats to Shasta snow-wreath but indicates that no diseases of Shasta snow-wreath are documented. The Petition cites personal observations by Julie Kierstead Nelson in 2016 that note the appearance of fungi on the leaves of Shasta snow-wreath at one population.

#### Inadequacy of existing regulatory mechanisms:

The Petition states that the inadequacy of existing regulatory mechanisms is contributing to the threats to Shasta snow-wreath. Shasta snow-wreath is not listed under the California Endangered Species Act or the federal Endangered Species Act (CNDDB 2019). Shasta snow-wreath is included on the California Department of Fish and Wildlife Special Vascular Plants, Bryophytes, and Lichens List (CDFW CNDDB 2019) and is currently listed as sensitive by the U.S. Forest Service, Pacific Southwest Region (R5) under the Regional Forester's Sensitive Species List and by the U.S. Bureau of Land Management. Forest Service Sensitive Species are managed to avoid a trend towards federal listing and consist of species identified by the U.S. Forest Service for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, and/or a significant current or predicted downward trend in habitat capability that would reduce a species' existing distribution. The Petition indicates that as Forest Plans are updated to the 2012 Planning Rule Standards, the Shasta-Trinity National Forest may or may not include Shasta snow-wreath in its "species of conservation concern list". Eighteen of the occurrences are partially or completely located federal lands administered by the U.S. Forest Service or the U.S. Bureau of Land Management. The remaining six occurrences are on non-federal land (private or other).

## Other factors:

The Petition discusses pollination and reproduction challenges as other factors that pose threats to Shasta snow-wreath. It is unknown if Shasta snow-wreath is insect- or wind-pollinated. Although achenes (dry, one-seeded fruits) have been observed, the viability of any seeds contained within the achenes is unknown and no seedlings of Shasta snow-wreath have been observed. Germination attempts have been unsuccessful (Ertter and Shevock 1993).

2. Conclusion

The Petition contains sufficient information on the factors affecting the ability of Shasta snow-wreath to survive and reproduce.

- H. Degree and Immediacy of Threat
  - 1. Scientific Information in the Petition

The degree and immediacy of threat to Shasta snow-wreath is discussed in the following sections of the Petition: "Executive Summary" on pages 7 and 8, "Threats" on pages 42 through 58, and "Summary and Justification" on page 59. The Petition indicates that the primary threat to Shasta snow-wreath is significant destruction, modification, and curtailment of habitat by the proposed project to raise the height of Shasta Dam and other ongoing projects. The Petition states that other proposed or ongoing vegetation management projects may have both positive and negative effects on this species, and invasive plant species also pose a threat. Overutilization, disease, and predation appear to pose minor threats to Shasta snow-wreath. In addition, the Petition indicates that other factors such as climate change, landslides, and wildfires appear to be minor influences on Shasta snow-wreath survival, but these factors are difficult to quantify.

2. Conclusion

The Petition contains sufficient information on the degree and immediacy of threats to Shasta snow-wreath.

## I. Impact of Existing Management Efforts

1. Scientific Information in the Petition

The Petition discusses the impact of existing management efforts under the following sections: "Land Ownership and Management Direction" on page 14, "Conservation Status" on page 17, "Other Land Management Actions" on pages 45 through 49, and "Threats" on pages 56 to 57. As discussed in the Petition, 18 of the 24 known occurrences of Shasta snow-wreath are entirely on National Forest System Lands that are managed by the Shasta Lake Ranger District of Shasta-Trinity National Forest. Many occurrences on National Forest System lands are within the Whiskeytown-Shasta-Trinity National Recreation Area. The management emphasis of the National Recreation Area is to provide recreation associated with the reservoirs. The Petition indicates that such management will promote or is compatible with, and does not significantly impair, public recreation and conservation of scenic, scientific, historic, or other values contributing to public enjoyment.

The Petition indicates that one Shasta snow-wreath occurrence is within the Devil's Rock-Hosselkus Research Natural Area of the Shasta-Trinity National Forest, which remains in an unmanaged natural state. The Petition indicates that the Research Natural Area status of this area could potentially be revised with the Forest Plan Revision as Forest Plans are updated to the 2012 Planning Rule standards.

The Petition indicates that Shasta snow-wreath is currently listed as sensitive by the U.S. Forest Service, Pacific Southwest Region under the Regional Forester's Sensitive Species list and by the U.S. Bureau of Land Management for California, and sensitive species are managed to avoid a trend towards federal listing. As Forest Plans are updated to the 2012 Planning Rule standards as described above, the Petition states that the Shasta-Trinity National Forest may, or may not, include Shasta snow-wreath in its list of species of conservation concern.

The Petition also describes ongoing fire resilience and invasive species management projects on National Forest Lands where Shasta snow-wreath is known to occur. The Green Horse, Cow Creek, and Packers Bay projects are described above in the "Factors Affecting the Ability to Survive and Reproduce" section.

Six occurrences of Shasta snow-wreath are partially or completely on non-federal or private lands (CNDDB 2019) and the Petition indicates that these lands are managed to meet landowner goals.

## 2. Conclusion

The Petition contains sufficient information in the impacts of existing management efforts.

## J. Suggestions for Future Management

## 1. Scientific Information in the Petition

The Petition suggests future management actions on pages 59 through 61. The Petition recommends the following specific actions:

- Restrict destruction and removal of occurrences, removal of above ground and below ground plant parts, and modification of habitat for Shasta snow-wreath associated with the proposal to raise Shasta Dam to prevent occurrences and habitat from being inundated or destroyed.
- Reduce harmful disturbances to Shasta snow-wreath plants, plant parts, and habitat that is occurring and planned to occur on federal lands.
- Conduct habitat modeling through geographic information systems and field checking to search for other occurrences and to identify the best places for reintroduction.
- Collect and propagate ramets/genets to conserve diversity in potential habitat and at an off-site location using best available science and practices.
- Implement studies on reproduction and pollination using best available science and methodology including studies of seeds and viability.
- Conduct an organized search for seedlings throughout Shasta snow-wreath's distribution.
- Implement ongoing control of invasive species and studies of effectiveness of control.
- Develop State-level conservation agreements with non-federal landowners.
- Support actions to reduce climate change.
- Identify fungal diseases currently affecting this species and determine potential for spread and methods of potential control.
  - 2. Conclusion

The Petition provides sufficient management suggestions that may aid in conserving Shasta snow-wreath.

## K. Detailed Distribution Map

1. Scientific Information in the Petition

Page 12 of the Petition provides a map prepared by the Petitioner showing the distribution of Shasta snow-wreath. This map is included as Figure 1 on page 8 of this Petition Evaluation Report.

## 2. Other Relevant Scientific Information

The distribution of occurrences shown in Figure 1 closely matches the locations of occurrences of Shasta snow-wreath in the CNDDB (CNDDB 2019).

3. Conclusion

The Petition provides a detailed map that illustrates the Shasta snow-wreath's distribution.

- L. Sources and Availability of Information
  - 1. Scientific Information in the Petition

The "Literature Cited" section of the Petition is on pages 61 through 75. Information sources cited in the Petition include published literature and other sources. The Petitioner provided electronic copies of these documents to the Commission.

2. Other Relevant Scientific Information

The Department used additional sources of scientific information cited in this Petition Evaluation document.

3. Conclusion

The Petition provides sufficient information on the availability and sources of information used in the Petition.

## V. Recommendation to the Commission

In completing its Petition Evaluation, the Department has determined the Petition provides sufficient scientific information to indicate that the petitioned action may be warranted for Shasta snow-wreath. Therefore, the Department recommends the Commission accept the Petition for further consideration under CESA.

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#### **Personal Communication**

Roche, Kathleen. Personal e-mail. Communication. November 4, 2019.

# **California Fish and Game Commission**

# DRAFT Notice of Findings for Foothill Yellow-Legged Frog (Rana boylii)

#### February 13, 2020 DRAFT

**NOTICE IS HEREBY GIVEN** that the California Fish and Game Commission (Commission), at its meeting in Sacramento, California on December 11, 2019, made a finding pursuant to California Fish and Game Code Section 2075.5, in response to a petition requesting that the Commission add the foothill yellow-legged frog (*Rana boylii*) to the list of threatened or endangered species under the California Endangered Species Act (CESA) (Fish and Game Code, Section 2050 et seq.; see also California Code of Regulations, Title 14, Section 670.1, Subsection (i). The Commission made the finding as follows:

- 1. Listing the Southwest/South Coast, West/Central Coast, and East/Southern Sierra clades as endangered is warranted;
- 2. Listing the Northeast/Northern Sierra and Feather River clades as threatened is warranted; and
- 3. Listing the Northwest/North Coast clade is not warranted at this time.

**NOTICE IS ALSO GIVEN** that, at its February 21, 2020 meeting in Sacramento, California, the Commission adopted the following findings outlining the reasons for its determination.

#### I. Background and Procedural History

#### **Petition History**

A petition to list the foothill yellow-legged frog (*Rana boylii*) as threatened under CESA (Petition) was submitted to the Commission on December 14, 2016 by the Center for Biological Diversity (Petitioner). Commission staff transmitted the petition to the California Department of Fish and Wildlife (Department) pursuant to Fish and Game Code Section 2073 on December 22, 2016 and published a formal notice of receipt of the petition on January 20, 2017 (California Regulatory Notice Register 2017, No. 3-Z, p. 46).

A petition to list or delist a species under CESA must include "information regarding the population trend, range, distribution, abundance, and life history of a species, the factors affecting the ability of the population to survive and reproduce, the degree and immediacy of the threat, the impact of existing management efforts, suggestions for future management, and the availability and sources of information. The petition shall also include information regarding the kind of habitat necessary for species survival, a detailed distribution map, and any other factors that the petitioner deems relevant" (Fish and Game Code, Section 2072.3).

On April 17, 2017, the Department provided the Commission with its evaluation of the petition, *Evaluation of the Petition from the Center for Biological Diversity to List the Foothill Yellow-legged Frog (Rana boylii) as Threatened under the California Endangered Species Act*, to assist the Commission in making a determination as to whether the petitioned action may be warranted based on the sufficiency of scientific information (Fish and Game Code, sections 2073.5 & 2074.2; California Code Regulations, Title 14, Section 670.1, subsections (d) & (e)).

Focusing on the information available to the Department relating to each of the relevant categories, the Department recommended to the Commission that the petition be accepted.

At its scheduled public meeting on June 21, 2017 in Smith River, the Commission considered the petition, the Department's petition evaluation and recommendation, and comments received. The Commission found that sufficient information existed to indicate the petitioned action may be warranted and accepted the petition for consideration. Upon publication of the Commission's notice of its findings, the foothill yellow-legged frog was designated a candidate species on July 7, 2017 (California Regulatory Notice Register 2017, No. 27-Z, p. 986).

The Commission's action designating the foothill yellow-legged frog as a candidate species triggered the Department's process for conducting a status review to inform the Commission's decision on whether listing the species is warranted. At its scheduled public meeting on June 21, 2018 in Sacramento, the Commission granted the Department a six-month extension to complete the status review and facilitate external peer review.

The Department completed its review and submitted *Report to the Fish and Game Commission a Status Review of the Foothill Yellow-Legged Frog (Rana boylii) in California* (Status Report) at the Commission's October 2019 meeting. The report represents the Department's final written review of the status of the foothill yellow-legged frog and is based upon the best scientific information available to the Department.

## **Species Description**

Foothill yellow-legged frogs are small- to medium-sized frogs that are typically gray, brown, olive, or reddish with brown-black flecking and mottling, which often matches the local substrate. Foothill yellow-legged frogs have a relatively squat body and granular skin, giving them a rough appearance like toads, and their dorsolateral folds are indistinct compared to other western North American ranids.

Their abdomen is white with variable amounts of dark mottling on the chest and throat, and as their name suggests, the undersides of their hind limbs are often yellow. Foothill yellow-legged frogs reach sexual maturity around two to three years old and can live over a decade. Adult females likely lay one clutch of eggs per year. Egg masses resemble a cluster of grapes with several hundred embryos, and tadpoles metamorphose in the same season the eggs were laid.

Foothill yellow-legged frogs historically ranged from the Willamette River drainage in Oregon west of the Sierra-Cascade crest to at least the San Gabriel River drainage in Los Angeles County in California, and a disjunct population was discovered in the mid-1960s in the Sierra San Pedro Mártir, Baja California Norte, México. In California, the species has been reported from foothill and mountain streams in the Klamath, Cascade, Sutter Buttes, Coast, Sierra Nevada, and Transverse ranges from sea level to 6,400 ft, although rarely above 5,000 ft. Foothill yellow-legged frog populations exhibit strong genetic variation across their range.

Genetic divergence is often depicted as a phylogenetic tree, which visually summarizes the evolutionary relationships among populations and taxa. A branch on a phylogenetic tree that contains a group of lineages comprised of an ancestor and all its descendants is referred to as a monophyletic group, or a clade. Clades are nested hierarchically in a phylogenetic tree, and effective conservation strategies often identify the "major" clades, which represent populations

from the most divergent lineages in that tree, as key management units. These major clades may be sufficiently differentiated into diagnosable species or subspecies, or they may diverge to that point if the evolutionary process continues. Two recent landscape genomics studies recovered five and six deeply divergent clades, respectively. (McCartney-Melstad et al. 2018 and Peek 2018). Genetic diversity within clades is generally lower in the southern part of the foothill yellow-legged frog's range, making them less capable of adapting to changing conditions.

## Federal Status

The foothill yellow-legged frog is currently under review for possible listing as threatened or endangered under the federal Endangered Species Act (ESA) in response to a July 11, 2012 petition submitted by the Center for Biological Diversity. On July 1, 2015, the U.S. Fish and Wildlife Service (USFWS) published its 90-day finding that the petition presented substantial scientific or commercial information indicating that the petitioned action may be warranted and initiated a status review of the species (USFWS 2015). On March 16, 2016, the Center for Biological Diversity sued the USFWS to compel issuance of a 12-month finding on whether listing under the ESA is warranted. On August 30, 2016, the parties reached a stipulated settlement agreement that the USFWS shall publish its 12-month finding in the Federal Register on or before September 30, 2020 (Center for Biological Diversity v. S.M.R. Jewell (D.D.C. Aug. 30, 2016, No. 16-CV-00503)).

## II. Statutory and Legal Framework

The Commission, as established by the California State Constitution, has exclusive statutory authority under California law to designate endangered, threatened, and candidate species under CESA. (California Constitution, Article. IV, Section 20, Subdivision (b); Fish and Game Code, Section 2070.) The CESA listing process for foothill yellow-legged frog began in the present case with the Petitioners' submittal of the Petition to the Commission. The regulatory and legal process that ensued is described in some detail in the preceding section above, along with related references to the Fish and Game Code and controlling regulation. The CESA listing process generally is also described in some detail in published appellate case law in California, including:

- Central Coast Forest Association v. California Fish and Game Commission (2018) 18 Cal. App. 5th 1191;
- Central Coast Forest Association v. California Fish and Game Commission (2017) 2
   Cal. 5th 594;
- Center for Biological Diversity v. California Fish and Game Commission (2008) 166 Cal.App.4th 597;
- California Forestry Association v. California Fish and Game Commission (2007) 156 Cal.App.4th 1535;
- Mountain Lion Foundation v. California Fish and Game Commission (1997) 16 Cal.4<sup>th</sup> 105; and
- Natural Resources Defense Council v. California Fish and Game Commission (1994) 28 Cal.App.4th 1104.

The "is warranted" determination at issue here stems from Commission obligations established by Fish and Game Code Section 2075.5. Under this provision, the Commission is required to

make a finding regarding the candidate species status at the end of the CESA listing process as follows: that the petitioned action is not warranted, that the petitioned action is warranted, or that the petitioned action is not warranted, but listing the candidate species at a different status than that requested by the petitioner is warranted.

The Commission made the finding under Fish and Game Code Section 2075.5(e)(1) that listing the Northwest/North Coast clade is <u>not warranted</u>. The Commission made the finding under Section 2075.5(e)(2) that listing the Feather River and Northeast/Northern Sierra clades as <u>threatened</u> is warranted and that listing the East/Southern Sierra, West/Central Coast, and Southwest/South Coast clades as <u>endangered</u> is warranted.

The Commission was guided in making these determinations by statutory provisions and other controlling law. The Fish and Game Code, for example, defines an endangered species under CESA as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, over exploitation, predation, competition, or disease." (Fish and Game Code, Section 2062.) Similarly, the Fish and Game Code defines a threatened species under CESA as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter." (*Id.*, Section 2067.)

The Commission also considered Title 14, Section 670.1, subsection (i)(1)(A), of the California Code of Regulations in making its determination. This provision provides, in pertinent part, that a species shall be listed as endangered or threatened under CESA if the Commission determines that the species' continued existence is in serious danger or is threatened by any one or any combination of the following factors:

- 1. Present or threatened modification or destruction of its habitat;
- 2. Overexploitation;
- 3. Predation;
- 4. Competition;
- 5. Disease; or
- 6. Other natural occurrences or human-related activities.

Fish and Game Code Section 2070 provides similar guidance; this section provides that the Commission shall add or remove species from the list of endangered and threatened species under CESA only upon receipt of sufficient scientific information that the action is warranted. Similarly, CESA provides policy direction not specific to the Commission per se, indicating that all state agencies, boards, and commissions shall seek to conserve endangered and threatened species and shall utilize their authority in furtherance of the purposes of CESA. (Fish and Game Code, Section 2055.) This policy direction does not compel a particular determination by the Commission in the CESA listing context. Nevertheless, "[I]aws providing for the conservation of natural resources' such as the CESA 'are of great remedial and public importance and thus should be construed liberally." (*California Forestry Association v. California Fish and Game Commission*, supra, 156 Cal. App.4th at pp. 1545-1546, citing *San Bernardino Valley Audubon Society v. City of Moreno Valley* (1996) 44 Cal.App.4th 593, 601; Fish and Game Code, sections 2051, 2052.)

Finally, in considering these factors, CESA and controlling regulations require the Commission to actively seek and consider related input from the public and any interested party. (See, e.g., Id., sections 2071, 2074.4, 2078; California Code of Regulations, Title 14, Section 670.1, Subsection (h).) The related notice obligations and public hearing opportunities before the Commission are also considerable. (Fish and Game Code, sections 2073.3, 2074, 2074.2, 2075, 2075.5, 2078; California Code Regulations, Title 14, Section 670.1, subsections (c), (e), (g), (i); see also Government Code, Section 11120 et seq.) All of these obligations are in addition to the requirements prescribed for the Department in the CESA listing process, including an initial evaluation of the petition and a related recommendation regarding candidacy, and a review of the candidate species' status culminating with a report and recommendation to the Commission as to whether listing is warranted based on the best available science. (Fish and Game Code, sections 2073.4, 2074.6; California Code of Regulations, Title 14, Section 670.1, subsections (d), (f), (h).)

## III. Factual and Scientific Bases for the Commission's Final Determination

The Commission has determined that each of the six foothill yellow-legged frog genetic clades described in the Status Report— Northwest/North Coast, Feather River, Northeast/Northern Sierra, East/Southern Sierra, West/Central Coast, and Southwest/South Coast—qualify as a "species or subspecies" under CESA and listing the foothill yellow-legged frog by genetic clade is the prudent approach based on the genetic divergence among the six clades, the genetic diversity within the six clades, the reproductive isolation of the six clades, the relative connectivity of populations within each of the six clades, and due to the disparate degrees of imperilment among the six clades; these bases are supported in the Department's Status Report and presentation to the Commission on December 11, 2019. The clades are as described in the Status Report sections 3.2.2 through 3.2.7 and corresponding figures 7 through 18 and depicted in slide number 8 of the Department's December 11, 2019 PowerPoint presentation to the Commission.

The factual and scientific bases for the Commission's identification of the six clades, the determination that designating three clades as an endangered species under CESA is warranted, the determination that designating two clades as a threatened species under CESA is warranted, and the determination that designating one clade as a threatened or endangered species is not warranted, are set forth in detail in the Commission's record of proceedings including the Petition, the Department's petition evaluation report, the Department's Status Report, written and oral comments received from members of the public, the regulated community, tribal entities, the scientific community, and other evidence included in the Commission's record of proceedings. The issues addressed in these findings represent some, but not all of the evidence, issues, and considerations affecting the Commission are addressed in detail in the record before the Commission, which record is incorporated herein by reference.

## Threats

## Present or Threatened Modification or Destruction of Habitat

The most widespread, and potentially most significant, threats are associated with dams and their flow regimes, particularly in areas where they are concentrated and occur in a series along a river. (DFW 2019). Dams and their operations can result in several factors that contribute to population declines and possible extirpation; these factors include confusing breeding cues, scouring and stranding of egg masses and tadpoles, reducing the quality and

quantity of breeding and rearing habitat, diminishing tadpole growth rate, creating barriers to gene flow, and supporting the establishment and spread of non-native species (Hayes et al. 2016). Subpopulations of foothill vellow-leaged frogs on regulated rivers are more genetically isolated, and the type of water operations significantly affects the degree of connectivity and associated gene flow among them (Peek 2010, 2018; DFW 2019). Reservoirs created behind dams are often uninhabitable and represent barriers to gene flow (Bourgue 2008; Peek 2010, 2018). This decreased connectivity can lead to loss of genetic diversity, which can reduce a species' ability to adapt to changing conditions (Palstra and Ruzzante 2008). Dams can result in aseasonal or asynchronous breeding cues, scouring and stranding of egg masses and tadpoles, reduction in quality and quantity of breeding and rearing habitat, slower tadpole growth rate, barriers to gene flow among populations, and establishment and spread of nonnative species (Hayes et al. 2016). These impacts appear to be most severe when the dam is operated for the generation of hydropower that use hydropeaking and pulse flows (Kupferberg et al. 2009c, Peek 2018). Foothill yellow-legged frog abundance below dams is an average of five times lower than in unregulated rivers (Kupferberg et al. 2012). The number, height, and distance upstream of dams in a watershed influenced whether foothill yellow-legged frogs still occurred at sites that were occupied in 1975 (lbid.)

The other widespread threat to foothill yellow-legged frog habitat is climate change. While drought, wildland fires, floods, and landslides are natural, and ostensibly necessary, disturbance events for preservation of native biodiversity, climate change is expected to result in increased frequency and severity of these events in ways that may exceed species' abilities to adapt (Williams et al. 2008, Hoffmann and Sgrò 2011, Keely and Syphard 2016). These disturbance events, which can lead to local extirpations, will occur across a landscape of mostly fragmented and small populations, so the likelihood of natural recolonization will be highly impaired (DFW 2019). Climatic changes in flow regime can lead to increased competition, predation, and disease transmission as species become concentrated in areas that remain wet into the late summer (Adams et al. 2017a, Kupferberg and Catenazzi 2019). Loss of riparian vegetation from wildland fires can result in increased stream temperatures or concentrations of nutrients and trace heavy metals that inhibit growth and survival (Spencer and Hauer 1991, Megahan et al. 1995, Burton et al. 2016). Stream sedimentation from landslides following fire or excessive precipitation can destroy or degrade breeding and rearing habitat (Harvey and Lisle 1998, Olson and Davis 2009, Kupferberg et al. 2011b). At least some models predict unprecedented dryness in the latter half of the century (Cook et al. 2015).

Several other activities have the potential to destroy or degrade foothill yellow-legged frog habitat, but they are less common across the range (DFW 2019); they also tend to have relatively small areas of impact, although they can be significant in those areas, particularly if populations are already small and declining (DFW 2019). Activities that lead to potential impacts include mining, cannabis cultivation, vineyard expansion, overgrazing, timber harvest, recreation, and some stream habitat restoration projects (Harvey and Lisle 1998, Belsky et al. 1999, Merelender 2000, Pilliod et al. 2003, Bauer et al. 2015).

#### Predation

Predation is a likely contributor to foothill yellow-legged frog population declines where the habitat is degraded by one or many other risk factors (Hayes and Jennings 1986). Several studies have demonstrated the synergistic impacts of predators and other stressors: foothill yellow-legged frogs, primarily as demonstrated through studies on tadpoles, are more susceptible to predation when exposed to some agrochemicals, cold water, high velocities,

excess sedimentation, and even the presence of other species of predators (Harvey and Lisle 1998, Adams et al. 2003, Olson and Davis 2009, Kupferberg et al. 2011b, Kerby and Sih 2015, Catenazzi and Kupferberg 2018). Foothill yellow-legged frog tadpoles appear to be naïve to chemical cues from some non-native predators; they have not evolved those species-specific predator avoidance behaviors (Paoletti et al. 2011). Furthermore, early life stages are often more sensitive to environmental stressors, making them more vulnerable to predation, and foothill yellow-legged frog population dynamics are highly sensitive to egg and tadpole mortality (Kats and Ferrer 2003, Kupferberg et al. 2009c). Predation pressure is likely positively associated with proximity to anthropogenic changes in the environment, so in more remote or pristine places, it probably does not have a serious population-level impact (DFW 2019).

#### Disease

Perhaps the most widely recognized amphibian disease is chytridiomycosis, which is caused by the fungal pathogen Batrachochytrium dendrobatidis (Bd). Previous studies suggested foothill yellow-legged frogs may not be susceptible to Bd-associated mass mortality; skin peptides strongly inhibited growth of the fungus in the lab, and the only detectable difference between Bd+ and Bd- juvenile foothill vellow-legged frogs was slower growth (Davidson et al. 2007). At Pinnacles National Park in 2006, 18% of post- metamorphic foothill yellow-legged frogs tested positive for Bd; all were asymptomatic and at least one Bd+ foothill yellow-legged frog subsequently tested negative, demonstrating an ability to shed the fungus (Lowe 2009). However, recent studies have found historical evidence of Bd contributing to the extirpation of foothill vellow-legged frogs in southern California, an acute die-off in 2013 in the Alameda Creek watershed, and another in 2018 in Coyote Creek (Adams et al. 2017a,b; Kupferberg and Catenazzi 2019). Bd is likely present in the environment throughout the foothill yellow-legged frog's range, and with bullfrogs and treefrogs acting as carriers, it will remain a threat to the species; however, given the dynamics of the two recent die-offs in the San Francisco Bay area, the probability of future outbreaks may be greater in areas where the species is under additional stressors like drought and introduced species (Adams et al. 2017a, Kupferberg and Catenazzi 2019). Therefore, as with predation, foothill yellow-legged frogs are less likely to experience the adverse impacts of diseases in more remote areas with fewer anthropogenic changes to the environment (DFW 2019).

## Other Natural Events or Human-Related Activities

Agrochemicals, particularly organophosphates that act as endocrine disruptors, can travel substantial distances from the area of application through atmospheric drift and have been implicated in the disappearance and declines of many species of amphibians in California including foothill yellow-legged frogs (LeNoir et al. 1999, Davidson 2004, Lind 2005, Olson and Davis 2009). Foothill yellow-legged frogs appear to be significantly more sensitive to the adverse impacts of some pesticides than other native species (Sparling and Fellers 2009, Kerby and Sih 2015).

The prevalence of small populations is a threat. Many foothill yellow-legged frog populations are small, isolated from other populations, and possess low genetic diversity (McCartney-Melstad et al. 2018, Peek 2018). Genetic diversity is important in providing a population the capacity to evolve in response to environmental changes, and connectivity among populations is important for gene exchange and in minimizing probability of local extinction (Lande and Shannon 1996, Williams et al. 2008, Eriksson et al. 2014). Small populations are at much

greater risk of extirpation primarily through the disproportionate impact of demographic, environmental, and genetic stochasticity than robust populations (Lande and Shannon 1996, Palstra and Ruzzante 2008). Based on a foothill yellow-legged frog population viability analysis, populations in regulated rivers face a 4- to 13-fold greater extinction risk in 30 years than populations in unregulated rivers due to smaller population sizes (Kupferberg et al. 2009c). The threat posed by small population sizes is significant and the general pattern shows increases in severity from north to south; however, many sites, primarily in the northern Sierra Nevada, in watersheds with large hydropower projects are also at high risk (DFW 2019).

#### **Endangered Clades**

The Commission determined that the continued existence of the Southwest/South Coast, West/Central Coast, and East/Southern Sierra clades in the State of California are in serious danger or threatened by one or a combination of the factors described above.

The Commission also determined that the information in the Commission's record constitutes the best scientific information available and established that designating the Southwest/South Coast, West/Central Coast, and East/Southern Sierra clades as endangered species under CESA is warranted.

The species has disappeared from nearly all known historically-occupied locations of the Southwest/South Coast clade and only two populations from this clade are known to be extant (DFW 2019, McCartney-Melstad et al. 2018, Peek 2018). These populations appear to be extremely small and rapidly losing genetic diversity, making them at high risk of extirpation (McCartney- Melstad et al. 2018, Peek 2018).

Foothill yellow-legged frogs appear to be extirpated from a relatively large proportion of historically occupied sites within the West/Central Coast clade, particularly in the heavily urbanized northern portion around the San Francisco Bay. In the northern portion of the clade, nearly all the remaining populations are located above dams, which line the mountains surrounding the Bay Area, and two are known to have undergone recent disease-associated die-offs (DFW 2019). These higher elevation sites are more often intermittent or ephemeral streams than the lower in the watersheds. As a result, the more frequent and extreme droughts that have dried up large areas may have contributed to recent declines (DFW 2019). Illegal cannabis cultivation, historical mining effects, overgrazing, and recreation likely contributed to declines and may continue to threaten remaining populations (DFW 2019).

Like the Southwest/South Coast clade, widespread extirpations in the East/Southern Sierra clade were observed as early as the 1970s (DFW 2019). Dams and introduced species were credited as causal factors in these declines in distribution and abundance, and mining and disease may also have contributed (DFW 2019). This area is relatively arid, and drought effects appear greater here than in northern areas that exhibit both more precipitation and a smaller difference between drought years and the historical average (DFW 2019). There is a relatively high number of hydropower generating dams in series along the major rivers in this clade and at least one new proposed dam near one of the remaining populations (DFW 2019). Some of the most dramatic declines experienced by any frog in the family that includes foothill yellow-legged frogs in California occurred in the Sierra Nevada east of the San Joaquin Valley, where over half of the state's total pesticide usage occurs (Sparling et al. 2001). Like the Southwest/South Coast clade, the East/Southern Sierra clade has low genetic variability and a trajectory of continued loss of diversity (Peek 2018).

## Threatened Clades

The Commission determined that the Feather River and Northeast/Northern Sierra clades in the state of California, while not presently threatened with extinction, are likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by CESA.

The Northeast/Northern Sierra clade occupies a relatively small area with many hydropower dams (DFW 2019). The general pattern in the Northeast/Northern Sierra clade, and across the range, is that unregulated rivers or reaches have more areas that are occupied more consistently over time and in larger numbers than regulated rivers or reaches (DFW 2019). The area is also more mesic and experienced less of a change in precipitation during the recent drought than more southern clades (DFW 2019). However, this pattern may not continue as some models suggest loss of snowmelt will be greater in the northern Sierra Nevada, and one of the climate change exposure models suggests that a comparatively large proportion of the lower elevations will experience climatic conditions not currently known from the area by the end of the century (DFW 2019).

Despite the Feather River clade being included in the Northeast clade as defined in one recent study, the Feather River clade is very distinct and located primarily in Plumas and Butte counties (DFW 2019, Peek 2018). The Feather River clade is the smallest, has a high density of hydropower dams (DFW 2019), and recently experienced one of the largest, most catastrophic wildfires in California history (DFW 2019). Despite the threats, foothill yellow-legged frogs appear to continue to be relatively broadly distributed within the clade, although with all the dams in the area, most populations are likely disconnected (DFW 2019). The clade is the only clade where foothill yellow-legged frogs and Sierra Nevada yellow-legged frogs overlap and can hybridize (DFW 2019). The genetic variation within the clade is greater than the other clades except for the Northwest/North Coast (DFW 2019). Most of the area within the clade's boundaries is U.S. Forest Service-managed, and little urbanization pressure or known extirpations exist in this area (DFW 2019). The Feather River clade shares many of the same threats as the Northeast/Northern Sierra clade (e.g., relatively small area with many hydropower dams) (DFW 2019).

## Not Warranted Determination

The Commission determined that the Northwest/North Coast clade in the State of California, is not presently threatened with extinction and is not likely to become endangered in the foreseeable future in the absence of the special protection and management efforts required by CESA.

The Northwest/North Coast clade is the largest, with the most robust populations and the greatest genetic diversity (McCartney-Melstad et al. 2018, Peek 2018). The area is the least densely populated by humans; contains relatively few hydropower dams, particularly further north; and has the highest precipitation in the species' California range (DFW 2019). The species is still known to occur in most, if not all, historically occupied watersheds; presumed extirpations are mainly concentrated in the southern portion of the clade around the heavily urbanized San Francisco Bay area (DFW 2019). This is the only clade with an increasing trend in genetic diversity (Peek 2018). The proliferation of cannabis cultivation, particularly illicit grows in and around what is known as the Emerald Triangle (Humboldt, Mendocino and Trinity counties), the apparent increase in severe wildland fires in the area, and potential climate

change effects are cause for concern (DFW 2019). As a result, this clade does not currently warrant listing as either endangered or threatened (DFW 2019).

## IV. Final Determination by the Commission

The Commission has weighed and evaluated the information for and against designating the six clades as threatened or endangered under CESA. The information includes scientific and other general evidence in the Petition; the Department's Petition evaluation report; the Department's Status Report; the Department's related recommendations; written and oral comments received from members of the public, the regulated community, various public agencies, and the scientific community; and other evidence included in the Commission's record of proceedings.

Based upon the evidence in the record, the Commission has determined that the best scientific information available indicates that the continued existence of the Northwest/North Coast clade of foothill yellow-legged frog is not in serious danger or threatened by present or threatened modifications or destruction of the species' habitat, predation, competition, disease, or other natural occurrences or human-related activities, where such factors are considered individually or in combination. (See generally California Code Regulations, Title 14, Section 670.1, Subsection (i)(2); Fish and Game Code, Section 2075.5, Subdivision (a)(1).) The Commission determines that there is sufficient scientific information to indicate that designating the Northwest/North Coast clade as threatened or endangered is not warranted.

Based upon the evidence in the record the Commission has determined that the best scientific information available indicates that the continued existence of the Feather River clade, Northeast/Northern Sierra clade, East/Southern Sierra clade, West/Central Coast clade, and Southwest/South Coast clade are in serious danger or threatened by present or threatened modifications or destruction of the species' habitat, predation, competition, disease, or other natural occurrences or human-related activities, where such factors are considered individually or in combination. (See generally California Code Regulations, Title 14, Section 670.1, Subsection (i)(1)(A); Fish and Game Code, sections 2062, 2067.) The Commission determines that there is sufficient scientific information to indicate that designating the East/Southern Sierra, West/Central Coast, and Southwest/South Coast clades as endangered species under CESA and designating the Feather River and Northeast/Northern Sierra clades as a threatened species under CESA is warranted at this time. With the adoption and publication of these findings, each of these five clades of foothill yellow-legged frog for purposes of its legal status under CESA and, for further proceedings under CESA, shall be listed as follows:

- Southwest/South Coast clade endangered;
- West/Central Coast clade endangered;
- East/Southern Sierra clade endangered;
- Northeast/Northern Sierra clade threatened; and
- Feather River clade threatened.

With the adoption and publication of these findings the foothill yellow-legged frog shall be removed from the list of candidate species maintained pursuant to Fish and Game Code Section 2074.2.

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# DRAFT

#### CALIFORNIA FISH AND GAME COMMISSION FINDING OF EMERGENCY AND STATEMENT OF PROPOSED EMERGENCY REGULATORY ACTION FOR RE-ADOPTION OF EMERGENCY REGULATIONS

Emergency Action to Re-adopt subsection (b)(91.2) of Section 7.50, Title 14, California Code of Regulations Re: Upper Klamath-Trinity spring Chinook Salmon sport fishing emergency regulations

Date of Statement: February 24, 2020

#### I. Emergency Regulation in Effect to Date

The California Fish and Game Commission (Commission) approved an emergency rulemaking adding subsection (b)(91.2) of Section 7.50, Title 14, California Code of Regulations (CCR) that became effective June 26, 2019. The emergency regulation opened the lower Klamath River between July 1 and August 14 and the upper Trinity River and New River between July 1 and August 31 for spring Chinook Salmon fishing to reduce adverse impacts to local economies resulting from California Endangered Species Act (CESA) protections for upper Klamath-Trinity spring Chinook Salmon (UKTSCS).

On December 11, 2019, the Commission re-adopted the emergency regulations for an additional 90-day period, extending the effective period to March 23, 2020. That rulemaking was approved by the Office of Administrative Law on December 23, 2019.

#### II. Request for Approval of Re-adoption of Emergency Regulations

On February 21, 2020, the Commission re-adopted the emergency regulations for a second time. The Commission has initiated a certificate of compliance rulemaking to permanently adopt the limited fishing opportunity in most of the above described reaches. Upon the completion of the certificate of compliance rulemaking (anticipated June 2020), the permanent (non-emergency) regulations would be effective in time for the season to open July 1, 2020.

The emergency circumstances remain unchanged since the initial adoption of the emergency regulations that became effective June 26, 2019.

III. Statement of Facts Constituting the Need for Emergency Regulatory Action

#### Background

Regulations concerning the take of spring Chinook Salmon (where catch and release, or harvest, constitute take) in the Klamath River Basin are codified in subsection (b)(91.1) of Section 7.50, Title 14, CCR.
On July 23, 2018, the Commission received a petition to list UKTSCS as endangered under CESA. The petition cited declining population trends evident of extremely low UKTSCS abundance compared to historical status and how current low numbers make UKTSCS vulnerable to extinction.

The Commission referred the petition to the Department of Fish and Wildlife (Department) for an evaluation of the merits of the petition. In November 2018, the Department submitted its evaluation report and recommended that the Commission accept and consider the petition.

On February 6, 2019, the Commission considered the Department's evaluation report and public comments received and found that there is sufficient information to indicate that the petitioned action may be warranted, after which the Commission then accepted the petition for consideration. Acceptance of the petition initiates a one-year review by the Department for determining the species status, which includes either a recommendation to the Commission that the petitioned action is not warranted, or a recommendation that the species be listed as threatened or as endangered. During the status review period, the species is considered a "candidate" species, which automatically confers CESA take prohibition measures (Fish and Game Code Section 2085).

At the February 6, 2019 meeting, the Department recommended that the Commission adopt emergency regulations to help protect UKTSCS from take by minimizing confusion by sport anglers who may not have been aware of the UKTSCS candidacy protections. The Commission adopted the emergency regulation on February 6, 2019 (effective February 28 through August 27, 2019) to close salmon fishing in the Trinity and Klamath rivers to make Klamath River Basin spring Chinook Salmon sport fishing regulations consistent with CESA protections.

In response to the closure, the Commission received testimony and letters from the Del Norte County and Siskiyou County boards of supervisors and other members of the public requesting that the Commission consider shortening the closed periods, or otherwise allow some sport fishing take during the spring Chinook Salmon fishing season. The concern expressed was that a complete closure would create economic harm to businesses (i.e., local tourism, fishing guides, motels, restaurants, and other infrastructure).

The Department held public meetings in March 2019 with affected stakeholders to help inform regulatory options for some level of limited take of spring Chinook Salmon during its candidacy period. The Department reported back to the Commission options to mitigate economic hardship. At its April 17, 2019 meeting, the Commission adopted emergency regulations that allow limited take at the end of the traditional spring season, while also providing substantial protection to UKTSCS, consistent with Fish and Game Code Section 2084. These are the regulations in subsection (b)(91.2) of Section 7.50, Title 14, CCR, effective June 26, 2019 – March 23, 2020 that are proposed for re-adoption.

**Emergency Regulation Re-adoption** 

The proposed action is to re-adopt for another 90 days the emergency regulation subsection (b)(91.2) of Section 7.50, Title 14, CCR, with no change from the previous emergency rulemaking (Table 1, Figure 1). The regulations in subsection (b)(91.2)

supersede the spring Chinook Salmon fishing regulations in subsection (b)(91.1) of Section 7.50, Title 14, CCR.

Table 1. S	Summary of	regulatory	changes in	response to	Commission	acceptance of the	Э
UKTSCS	petition.						

Reach	Subsection 7.50(b)(91.1) Regulations to be Superseded	June 2019 Emergency Regulations Subsection 7.50(b)(91.2)	Re-adoption of Emergency Regulations Subsection 7.50(b)(91.2)
Klamath (Iron Gate Dam to Weitchpec) 7.50(b)(91.1)(E)2.a.	0 salmon bag and possession limit from Jan. 1-Aug.14	Closed to salmon fishing through Aug. 14	No change
Klamath (Weitchpec to Klamath River mouth) 7.50(b)(91.1)(E)2.b.	2 salmon bag and possession limit from Jan. 1-Aug. 14	1 salmon bag limit; 2 salmon possession limit Jul. 1 – Aug 14	No change
Trinity (Old Lewiston Bridge to Hwy 299 bridge at Cedar Flat) 7.50(b)(91.1)(E)6.b.	2 salmon bag and possession limit from Jan. 1- Aug. 31	1 salmon bag limit; 2 salmon possession limit Jul. 1 – Aug 31	No change
Trinity (Hwy 299 bridge at Cedar Flat to Denny Road bridge at Hawkins Bar) 7.50(b)(91.1)(E)6.c.	2 salmon bag and possession limit from Jan. 1- Aug. 31	1 salmon bag limit; 2 salmon possession limit Jul. 1 – Aug 31	No change
New River (confluence of the East Fork to confluence w/ Trinity) 7.50(b)(91.1)(E)6.d.	Closed to salmon fishing	1 salmon bag limit; 2 salmon possession limit Jul. 1 – Aug 31	No change
Trinity (Denny Road bridge at Hawkins Bar to mouth of the South Fork Trinity) 7.50(b)(91.1)(E)6.e.	2 salmon bag and possession limit from Jan. 1- Aug. 31	1 salmon bag limit; 2 salmon possession limit Jul. 1 – Aug 31	No change
Trinity (from the mouth of the South Fork Trinity to confluence w/ Klamath River) 7.50(b)(91.1)(E)6.f.	0 salmon bag and possession limit from Jan.1- Aug. 31	Closed to salmon fishing through Aug. 31	No change



Figure 1. Map of proposed re-adoption of emergency regulations

# **Emergency Finding**

The proposed re-adoption of the emergency regulations is necessary to continue the alleviation of the anticipated economic hardship of the February 2019 spring Chinook Salmon closure to local communities, while still providing protections to wild origin UKTSCS. As a resource-based economy, both Siskiyou and Del Norte counties articulated their reliance on fishing, tourism, and other recreational opportunity as vital components of their economies. This emergency regulation continues to align with the recommendation by the Del Norte County Board of Supervisors to provide a level of protection of UKTSCS that balances the local economic pulse that the summer months of salmon fishing bring to the region. As evidenced from creel surveys, the latter months (May, June, July) are the most commonly fished months for salmon, and the July 1 opening date was selected to include fishing during the Independence Day (July 4) weekend for local and out-of-area anglers to have that angling opportunity. Some anglers stay in the area following the spring salmon season to also participate in the Klamath River fall-run Chinook Salmon season.

IV. Impact of Regulatory Action

The potential for significant statewide adverse fiscal impacts that might result from the proposed regulatory action has been assessed, and the following determinations relative to the required statutory categories have been made:

(a) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:

None. The proposed emergency regulation would result in a return closer to the pre-February 2019 baseline for spring Chinook Salmon fishing. The re-adoption of the emergency regulation will maintain fishing on certain reaches of the Klamath, Trinity and New rivers for a limited duration of July 1-August 14 (Klamath River) and July 1-August 31 (Trinity River and New River). Protections under CESA would be maintained from the period of January 1 to June 30 (a closure of six months), with no new program costs or savings compared to the emergency regulations expiring March 24, 2020.

(b) Nondiscretionary Costs/Savings to Local Agencies:

The proposed re-adoption of the emergency regulation is expected to continue a return to increased spring Chinook Salmon angler spending. The open periods are proposed over historically high angler visitation periods that should optimize the potential for increased visitor expenditures, sales tax and transient occupancy tax revenue to the affected areas [see the Addendum to the Economic and Fiscal Impact Statement (STD 399) for more detail].

(c) Programs Mandated on Local Agencies or School Districts:

None.

 (d) 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.

V. Authority and Reference

The Commission proposes this emergency action pursuant to the authority vested by sections 200, 205, 265, 270, 315, 316.5, 399 and 2084 of the Fish and Game Code, and to implement, interpret, or make more specific sections 200, 205, 265, 270, 316.5 and 2084 of the Fish and Game Code.

VI. Section 399 Finding

Pursuant to Section 399 of the Fish and Game Code, the Commission finds that the adoption of this regulation is necessary for the immediate preservation of the public peace, health and safety, or general welfare.

VII. Studies, Reports, or Documents Supporting Factual Emergency

Klamath River Basin spring creel surveys are performed by the Department and its partners. These surveys inform the Department of angler fishing effort in the number of trips, and hours spent. The creel data (preliminary) gathered during the late period of the 2019 spring season (which begins May 5) suggest that the maintenance of fishing on the lower Klamath River and the upper Trinity River during the month of July (where the creel survey ended August 5) appears to have been successful at maintaining angler trips for the river reaches, and thus appears to have a minor economic benefit relative to 2018 (see Figure 2 below, and the Addendum to the STD 399 for more detail).



Figure 2. CDFW spring creel survey, Lower Klamath River, July 2 to August 5, 2014-2019.

- VI. Re-adoption Criteria
  - (a) Same or Substantially Equivalent

Pursuant to subdivision (h) of Section 11346.1 of the Government Code, a readoption may be approved only if the text is "the same as or substantially equivalent to an emergency regulation previously adopted by that agency." The language proposed for this re-adoption rulemaking is the same as the language of the original emergency regulation.

(b) Substantial Progress

Subdivision (h) of Section 11346.1 of the Government Code, specifies "Readoption shall be permitted only if the agency has made substantial progress and proceeded with diligence to comply with" standard rulemaking provisions.

(1) The Commission has complied with this requirement by proceeding with due diligence to determine whether or not listing UKTSCS as a threatened or endangered species is warranted.

Laws Related to the Emergency Regulations - Listing under CESA

A. Petition and Acceptance

Fish and Game Code Section 2070 requires the Commission to establish a list of endangered species and a list of threatened species. Any interested person may petition the Commission to add a species to the endangered or threatened list by following the requirements in Fish and Game Code sections 2072 and 2072.3. If

a petition is not factually incomplete and is on the appropriate form, it is forwarded to the Department for evaluation.

Fish and Game Code Section 2073.5 sets out the process for accepting or rejecting a petition to list a species, and if the petition is accepted, a process for actually determining whether listing of the species as threatened or endangered is ultimately warranted. The first step toward petition acceptance involves a 90-day review of the petition by the Department to determine whether the petition contains sufficient information to indicate that the petitioned action may be warranted. The Department prepares a report to the Commission that recommends rejection or acceptance of the petition based on its evaluation.

Fish and Game Code Section 2074.2 provides that, if the Commission finds that the petition provides sufficient information to indicate that the petitioned action may be warranted, the petition is accepted for consideration and the species that is the subject of the petition becomes a "candidate species" under CESA. CESA prohibits unauthorized take of a candidate species, just as it prohibits such take of threatened and endangered species, from the time the Commission notifies interested parties and the public generally of its acceptance of the petition. Fish and Game Code Section 88, defines "Take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

Once a petition is accepted by the Commission, all activities, whether new or ongoing, that cause take of the candidate species are in violation of the prohibition on unauthorized take of listed or candidate species found in Fish and Game Code Section 2080, unless:

- the take is authorized in regulations adopted by the Commission pursuant to Fish and Game Code Section 2084;
- the Department authorizes the take through memorandums of understanding for scientific, education or management purposes, or via incidental take permits issued on a project-by-project basis pursuant to Fish and Game Code Section 2081; or
- the take is allowed under Fish and Game Code Section 2080.1.
- B. Status Review Final Action on the Petition

The Commission's acceptance of a petition initiates a 12-month review of the species' status by the Department, pursuant to Fish and Game Code Section 2074.6, to determine whether the species should be listed as threatened or endangered. Unlike the Department's initial evaluation, which focuses largely on the sufficiency of information submitted in the petition, the 12-month status review involves a broader inquiry into, and evaluation of, available information from other sources. The Commission is required to solicit data and comments on the proposed listing soon after the petition is accepted, and the Department's written status report must be based upon the best scientific information available.

Pursuant to Fish and Game Code Section 2074.6, within 12 months of the petition's acceptance, the Department must provide the Commission a written

status report that indicates whether the petitioned action is warranted. The Commission may grant an extension of up to six months if the Director determines an extension is necessary to complete independent peer review of the report, and to provide a minimum of 30 days for public review of the peer reviewed report prior to the public hearing specified in Fish and Game Code Section 2075. The Commission must schedule the petition for final consideration at its next available meeting after receiving the Department's status report (Fish and Game Code Section 2075). In its final action on the petition, the Commission is required to decide whether listing the species as threatened or endangered "is warranted" or "is not warranted." If listing is not warranted in the Commission's judgment, take of the former candidate species is no longer prohibited under CESA (Fish and Game Code Section 2075.5).

If the Commission decides that listing the species "is warranted," the former candidate species then becomes a listed species.

(2) The Commission has complied with this requirement by proceeding with due diligence to complete the certificate of compliance rulemaking.

Department staff began preparing the rulemaking documents for the certificate of compliance rulemaking in June 2019, however, there was not sufficient time to complete the documents, hold three hearings pursuant to Section 255 of the Fish and Game Code, and prepare a final statement of reasons prior to the expiration of the 180-day period. The notice for the certificate of compliance rulemaking was published January 10, 2020. Discussion and adoption hearings are scheduled for February and April 2020.

As part of the rulemaking, the Department is evaluating creel survey results to help determine the effect of the emergency regulations on both the species and the local economic impacts the regulations are designed to address. The preliminary creel data gathered during the late period of the 2019 spring season (which begins May 5) suggest that the maintenance of fishing on the lower Klamath River and the upper Trinity River during the month of July (where the creel survey ended August 5) appears to have been successful at maintaining angler trips for the river reaches, and thus appear to have a minor economic benefit relative to 2018.

The re-adoption of the emergency regulation is needed to allow the Commission adequate time to comply with Administrative Procedure Act and Fish and Game Code provisions.

# Informative Digest (Plain English Overview)

# **Proposed Regulatory Action**

The California Fish and Game Commission (Commission) approved an emergency rulemaking adding subsection (b)(91.2) of Section 7.50, Title 14, California Code of Regulations (CCR) that became effective June 26, 2019. The emergency regulation opened the lower Klamath River between July 1 and August 14 and the upper Trinity River and New River between July 1 and August 31 for spring Chinook Salmon fishing to reduce adverse impacts to local economies resulting from California Endangered Species Act (CESA) protections for upper Klamath-Trinity spring Chinook Salmon (UKTSCS).

On December 11, 2019, the Commission re-adopted the emergency regulation for an additional 90-day period. The re-adopted regulation will expire March 24, 2020.

The Commission re-adopted the emergency regulations for a second time on February 21, 2020. If approved by the Office of Administrative Law, this final emergency regulation will be effective approximately March 24 through June 21, 2020.

The Commission has initiated a certificate of compliance rulemaking to permanently adopt the limited fishing opportunity in most of the above described reaches. Upon the completion of the certificate of compliance rulemaking (anticipated June 2020), the permanent (non-emergency) regulations would be effective in time for the season to open July 1, 2020.

The emergency circumstances remain unchanged since the initial adoption of the emergency regulations that became effective June 26, 2019.

The proposed emergency regulatory action will allow limited sportfishing take of spring Chinook Salmon consistent with Fish and Game Code Section 2084, which allows the Commission to authorize the taking of any fish by hook and line for sport that is listed as an endangered, threatened, or candidate species. The economic factors, coupled with the temporary and sudden nature of the Fish and Game Code Section 2085 protections for candidate species, constitutes an emergency that authorizes the Commission to address the matter through regulation.

The proposed emergency regulation will allow limited fishing opportunity on UKTSCS in the Klamath River downstream of the Highway 96 bridge at Weitchpec, the Trinity River from the Old Lewiston Bridge to the mouth of the South Fork Trinity River, and the New River main stem downstream of the confluence of the East Fork to the confluence with the Trinity River. Under the proposed emergency regulation, these areas will open July 1 and remain open until their regularly scheduled spring season close, after which fall season regulations will apply.

The proposed emergency regulatory action will allow for harvest of spring Chinook Salmon in areas where the majority of fish encountered will be of Trinity River Hatchery origin, including the later July 1 season opening in the lower Klamath River and the upper Trinity River (above the confluence of the South Fork Trinity River).

# **Benefits**

The primary benefit under the proposed emergency action is to ameliorate the economic losses associated with a total closure of the spring Chinook Salmon sport fishery due to the designation of UKTSCS as a candidate species under CESA. Under this proposed emergency action, a portion of the spring Chinook Salmon season would be open to sport fishing, while the proposed July 1 opening date for spring Chinook Salmon sport fishing protects the majority of migrating wild UKTSCS. The proposed regulatory action also reduces the daily bag limit to one fish, a reduction from historical two fish daily bag limits for spring Chinook Salmon, providing additional protective measures. The July 1 proposed opening date will allow for partial economic activity in the region associated with the fishery which will enable businesses to maintain infrastructure critical to the sport fishing public.

The pursuit, catch and harvest of spring Chinook Salmon in the Klamath River Basin has a long tradition in which generations of families have participated. Maintaining this opportunity, to some degree, will ensure that these opportunities persist into the future. Additionally, spring Chinook Salmon fishing provides recreational opportunities and salmon is a desired, natural food source which contributes to a healthy diet.

# **Consistency and Compatibility with Existing State 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 authorize the taking of any fish by hook and line for sport that is listed as an endangered, threatened, or candidate species (Section 2084, 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 Emergency Regulatory Language for Re-Adoption

Subsection (b)(91.2) is added to Section 7.50, Title 14, CCR, as follows:

# § 7.50. Alphabetical List of Waters with Special Fishing Regulations.

... [No changes to subsections (a) through (b)(91.1)]

(91.2) Special Order Regarding Take of Chinook Salmon in Anadromous Waters of the Klamath River Basin Downstream of Iron Gate and Lewiston dams.

Notwithstanding subsection (b)(91.1) of Section 7.50, between January 1 and August 14 on the Klamath River and between January 1 and August 31 on the Trinity River, South Fork Trinity River and New River, Chinook Salmon may not be taken or possessed except as authorized on the identified segments of rivers as listed in the following table. All other restrictions apply.

Body of Water	Open Season and Special Regulations	<u>Daily Bag and</u> Possession Limit
(A) Klamath River segment identified in subsection 7.50(b)(91.1)(E)2.b.	July 1 through August 14	<u>1 Chinook Salmon</u> <u>2 Chinook Salmon in</u> possession
(B) Trinity River segment identified in subsection 7.50(b)(91.1)(E)6.b.	July 1 through August 31	<u>1 Chinook Salmon</u> 2 Chinook Salmon in possession
(C) Trinity River segment identified in subsection 7.50(b)(91.1)(E)6.c.	July 1 through August 31	<u>1 Chinook Salmon</u> 2 Chinook Salmon in possession
(D) New River segment identified in subsection 7.50(b)(91.1)(E)6.d.	July 1 through August 31	<u>1 Chinook Salmon</u> <u>2 Chinook Salmon in</u> possession
(E) Trinity River segment identified in subsection 7.50(b)(91.1)(E)6.e.	July 1 through August 31	<u>1 Chinook Salmon</u> 2 Chinook Salmon in possession

... [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, 399 and 2084, Fish and Game Code. Reference: Sections 200, 205, 265, 270, 316.5 and 2084, Fish and Game Code.

DEPARTMENT NAME	NAME CONTACT PERSON		EMAIL ADDRESS	TELEPHONE NUMBER
ish and Game Commission Margaret Duncan margaret.duncan@			wildlife.ca.gov	916-653-4674
Descriptive title from Notice Register OR FORM 400 2nd Re-adopt Section 7.50, subsection (b)(91.2), Title 14, CCR Re: Emergency Klamath Spring Chinook Salmon				
A. ESTIMATED PRIVATE SECTOR COST IMPA	<b>CTS</b> Include calculations and a	ssumptions in the r	ulemaking record.	
1. Check the appropriate box(es) below to indica	te whether this regulation:			
a. Impacts business and/or employees	e. Imposes repor	ting requirements		
b. Impacts small businesses	f. Imposes prescr	iptive instead of pe	erformance	
c. Impacts jobs or occupations	g. Impacts indivi	duals		
d. Impacts California competitiveness	$\overline{\times}$ h. None of the at	oove (Explain belov	v):	
_	Emergency acti	on only requires f	iscal impact statement (see	below).
If any box in Items 1 If box in Item 1.h.	a through g is checked, com is checked, complete the Fisc	plete this Econo cal Impact Stater	mic Impact Statement. nent as appropriate.	
2. The(Agency/Department)	estimates that the eco	nomic impact of th	is regulation (which includes	the fiscal impact) is:
Below \$10 million				
Between \$10 and \$25 million				
Between \$25 and \$50 million				
$\square$ Over \$50 million <i>/If the economic impact</i>	is over \$50 million, agencies are rec	nuired to submit a S	tandardized Regulatory Impact	* Assessment
as specified in Governm	ent Code Section 11346.3(c)]			
3. Enter the total number of businesses impacted	l:			
Describe the types of businesses (Include non)	profits):			
Enter the number or percentage of total businesses impacted that are small businesses	:			
4. Enter the number of businesses that will be cre	eated: e	liminated:		
Explain:				
5. Indicate the geographic extent of impacts:	Statewide			
Γ	Local or regional (List areas):			
6. Enter the number of jobs created:	and eliminated:			
Describe the types of jobs or occupations imp	acted:			
<ol> <li>Will the regulation affect the ability of Californi other states by making it more costly to produ</li> </ol>	a businesses to compete with ce goods or services here?	YES	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**



STATE OF	CALIFORNIA -	DEPARTMENT	OF FINANCE

#### ECONOMIC AND FISCAL IMPACT STATEMENT

# **ECONOMIC IMPACT STATEMENT (CONTINUED)**

<b>B. ESTIMATED COSTS</b> Include calculations and assum	ptions in the rulemaking record.	,
	· · · · · · · · · · · · · · · · · · ·	
1. What are the total statewide dollar costs that business	es and individuals may incur to comply with this regul	ation over its lifetime? \$
a. Initial costs for a small business: \$	Annual ongoing costs: \$	Years:
b. Initial costs for a typical business: \$	Annual ongoing costs: \$	Years:
c. Initial costs for an individual: \$	Annual ongoing costs: \$	Years:
d. Describe other economic costs that may occur:		
2. If multiple industries are impacted, enter the share of	otal costs for each industry:	
3. If the regulation imposes reporting requirements, enter Include the dollar costs to do programming, record keeping	r the annual costs a typical business may incur to com ng, reporting, and other paperwork, whether or not the p	ply with these requirements. aperwork must be submitted. \$
4. Will this regulation directly impact housing costs?	YES NO	
lf '	/ES, 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	e or absence of Federal regulations:	
Enter any additional costs to businesses and (or individ	use that may be due to State. Foderal differences, C	
<b>C. ESTIMATED BENEFITS</b> Estimation of the dollar value	e of benefits is not specifically required by rulemaking	law, but encouraged.
1. Briefly summarize the benefits of the regulation, which health and welfare of California residents, worker safet	may include among others, the	
2. Are the benefits the result of: specific statutory re-	quirements, or 📋 goals developed by the agency b	ased on broad statutory authority?
Explain:		
3. What are the total statewide benefits from this regulat	on over its lifetime? \$	
4. Briefly describe any expansion of businesses currently	doing business within the State of California that wou	ld result from this regulation:
<b>D. ALTERNATIVES TO THE REGULATION</b> Include cal specifically required by rulemaking law, but encourage	culations and assumptions in the rulemaking record. ed.	Estimation of the dollar value of benefits is not
1. List alternatives considered and describe them below.	If no alternatives were considered, explain why not:	

(REGULATIONS AND ORDERS) STD. 399 (REV. 12/2013)

**ECONOMIC IMPACT STATEMENT (CONTINUED)** 

				,
2. Summarize the t	total statewide costs ar	nd benefits from this regulation and e	ach alternative considered:	
Regulation:	Benefit: \$	Cost: \$		
Alternative 1:	Benefit: \$	Cost: \$		
Alternative 2:	Benefit: \$	Cost: \$		
3. Briefly discuss an of estimated co	ny quantification issues osts and benefits for th	that are relevant to a comparison nis regulation or alternatives:		
<ol> <li>Rulemaking law regulation man actions or proce</li> <li>Explain:</li> </ol>	requires agencies to dates the use of speci edures. Were performa	consider performance standards as a fic technologies or equipment, or pr ance standards considered to lower	n alternative, if a escribes specific compliance costs?	NO
E. MAJOR REGUI	LATIONS Include calc	ulations and assumptions in the rule	emaking record.	
	California Enviro submit the	nmental Protection Agency (Cal e following (per Health and Safe	/EPA) boards, offices and de ty Code section 57005). Othe	partments are required to rwise, skip to E4.
1. Will the estimate	ed costs of this regulat	ion to California business enterprises	exceed \$10 million? YES	NO
		If YES, com If NO	plete E2. and E3 skip to E4	
2. Briefly describe Alternative 1:	each alternative, or coi	nbination of alternatives, for which a	cost-effectiveness analysis was pe	rformed:
– Alternative 2:				
– (Attach addition	al pages for other altern	atives)		
2 For the regulati	ion and each alternativ	wint described optor the actimated	total cost and overall cost effectiv	veness ratio
Regulation: T	fotal Cost S	Cost-effectiv	eness ratio: \$	
Alternative 1: T	Total Cost \$	Cost-effectiv	eness ratio: \$	
Alternative 2: T	otal Cost \$	Cost-effectiv	eness ratio: \$	
4. Will the regulation exceeding \$50 after the major	on subject to OAL revie million in any 12-mont regulation is estimatec	w have an estimated economic impach h period between the date the major l to be fully implemented?	et to business enterprises and indi regulation is estimated to be filed	viduals located in or doing business in California with the Secretary of State through12 months
YES [	NO			
If YES, agencies Government Co	are required to submit a de Section 11346.3(c) ar	<u>Standardized Regulatory Impact Asses</u> ad to include the SRIA in the Initial State	<u>sment (SRIA)</u> as specified in ment of Reasons.	
5. Briefly describe	the following:			
The increase or	decrease of investmer	it in the State:		
The incentive fo	or innovation in produc	ts, materials or processes:		
The benefits of residents, work	the regulations, includ er safety, and the state	ing, but not limited to, benefits to the 's environment and quality of life, amo	health, safety, and welfare of Cali ong any other benefits identified l	fornia by the agency:

# ECONOMIC AND FISCAL IMPACT STATEMENT (REGULATIONS AND ORDERS) STD. 399 (REV. 12/2013)

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#### FISCAL IMPACT STATEMENT

<b>A. FISCAL EFFECT ON LOCAL GOVERNMENT</b> Indicate appro- current year and two subsequent Fiscal Years.	priate boxes 1 through 6 and attach calculations and assumptions of fiscal impact for the
1. Additional expenditures in the current State Fiscal Year wh (Pursuant to Section 6 of Article XIII B of the California Const	ich are reimbursable by the State. (Approximate) stitution and Sections 17500 et seq. of the Government Code).
\$	
a. Funding provided in	
Budget Act of or Ch	napter, Statutes of
b. Funding will be requested in the Governor's Budget A	ct of
Fiscal	Year:
2. Additional expenditures in the current State Fiscal Year wh (Pursuant to Section 6 of Article XIII B of the California Cons	ich are NOT reimbursable by the State. (Approximate) stitution 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 exp	ressed in their approval of Proposition No.
Date of Election:	
d. Issued only in response to a specific request from affe	cted 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 gove	ernment which will, at a minimum, offset any additional costs to each;
g. Creates, eliminates, or changes the penalty for a new o	crime or infraction contained in
3. Annual Savings. (approximate)	
\$	
4. No additional costs or savings. This regulation makes only te	chnical, non-substantive or clarifying changes to current law regulations.
5. No fiscal impact exists. This regulation does not affect any lo	cal entity or program.
S 6. Other. Explain The proposed emergency action to permit	limited take of spring Chinook Salmon at high visitation periods is expected to
increase local sales and transient occupancy tax re	venues to local governments in the impacted areas (see Addendum).
increase local sales and transient occupancy tax re	venues to local governments in the impacted areas (see Addendum).

STATE OF CALIFORNIA — DEPARTMENT OF FINANCE

#### ECONOMIC AND FISCAL IMPACT STATEMENT

(REGULATIONS AND ORDERS) STD. 399 (REV. 12/2013)

# FISCAL IMPACT STATEMENT (CONTINUED)

PAGE 5

<b>B. FISCAL EFFECT ON STATE GOVERNMENT</b> Indicate appropriate boxes 1 through 4 and attach calc year and two subsequent Fiscal Years.	culations and assumptions of fiscal impact for the current
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	
2. Savings in the current State Fiscal Year. (Approximate)	
\$	
3. No fiscal impact exists. This regulation does not affect any State agency or program.	
X 4. Other. Explain The proposed re-opening of portions of the Klamath River Basin to spring Chinool	c Salmon fishing may result in small gains in California
state sales tax and may increase salmon card sales revenue to the CA Department of Fish	and Wildlife (see Addendum).
<b>C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS</b> Indicate appropriate boxes 1 thro impact for the current year and two subsequent Fiscal Years.	ough 4 and attach calculations and assumptions of fiscal
1. Additional expenditures in the current State Fiscal Year. (Approximate)	
\$	
2. Savings in the current State Fiscal Year. (Approximate)	
¢	
<ul> <li>3. No fiscal impact exists. This regulation does not affect any federally funded State agency or program.</li> </ul>	
4. Other. Explain	
FISCAL OFFICER SIGNATURE	DATE
A	
The signature attests that the agency has completed the STD. 399 according to the instruction, the impacts of the proposed rulemaking. State boards, offices, or departments not under an $A_3$ highest ranking official in the organization	s in SAM sections 6601-6616, and understands gency Secretary must have the form signed by the
AGENCY SECRETARY	DATE
Finance approval and signature is required when SAM sections 6601-6616 require completion	n of Fiscal Impact Statement in the STD. 399.
DEPARTMENT OF FINANCE PROGRAM BUDGET MANAGER	DATE
<u>A</u>	

### STD399 CALCULATIONS WORKSHEET ADDENDUM

Emergency Action to Re-adopt subsection (b)(91.2) of Section 7.50, Title 14, California Code of Regulations Re: Upper Klamath-Trinity spring Chinook Salmon sport fishing emergency regulations

# **Economic Impact Statement**

Emergency regulations do not require Economic Impact Assessment; only Fiscal impacts must be evaluated (California Government Code Section 11346.1).

# **Fiscal Impact Statement**

In February 2019, the Fish and Game Commission (Commission) accepted a petition to list upper Klamath-Trinity spring Chinook Salmon (UKTSCS), which confers candidacy status on UKTSCS. During the candidacy period, California Endangered Species Act (CESA) take prohibition measures apply (Fish and Game Code Section 2085). The Commission adopted emergency regulations in February 2019 prohibiting take on certain portions of the Klamath and Trinity rivers to help protect UKTSCS by minimizing confusion by sport anglers who may not have been aware of the CESA candidacy protections. The Commission received testimony and letters from the public, as well as the Del Norte County and Siskiyou County boards of supervisors that a complete prohibition of spring Chinook Salmon take would create economic harm to businesses (i.e., local tourism sector, fishing guides, motels, restaurants, and other retail), and requesting that the Commission consider shortening the closed periods, or otherwise allow some sport fish take during the spring Chinook Salmon fishing season. The California Department of Fish and Wildlife (Department or CDFW) assessed the ability under Section 2084 of the Fish and Game Code to allow for some level of sport fish take by hook and line, while still providing protective spring Chinook Salmon regulatory measures. The Commission adopted a special order emergency action April 17, 2019 to mitigate potential adverse economic and fiscal impacts of a complete prohibition of take. The emergency regulations were effective June 26 through December 23, 2019. The Administrative Procedure Act provides that the Office of Administrative Law may approve not more than two re-adoptions, each for a period not to exceed 90 days, of an emergency regulation that is the same as or substantially equivalent to an emergency regulation previously adopted by that agency if the agency has made substantial progress and proceeded with due diligence to complete a standard rulemaking. The Commission re-adopted the June 2019 emergency regulations on December 11, 2019 which extended the effective date through March 23, 2020. The Commission re-adopted the emergency regulations for a second time on February 21, 2020. If approved by the Office of Administrative Law, this final emergency regulation will be effective approximately March 24 through June 21, 2020. The Commission is scheduled to adopt the standard rulemaking at its April 17, 2020 meeting.

The emergency regulations maintain limited sport fishing take of spring Chinook Salmon on the Klamath River downstream of the Highway 96 bridge at Weitchpec between July 1 and August 14, and the Trinity River from the Old Lewiston Bridge to the mouth of the South Fork Trinity River, and the New River main stem downstream of the confluence of the East Fork to the confluence with the Trinity River between July 1 and August 31.

This final re-adoption of the emergency regulations maintains limited angling opportunity on certain areas of the lower Klamath River and the upper Trinity River during historically high visitation periods, as shown in Figure 1, Angler Days by Early, Middle, and Late Portions of CDFW Spring Creel Survey data. Since 2014, the period from July 2 to August 5 reflects a much higher share of angler activity. The 2019 emergency action that opened portions of the rivers to angling resulted in increased angler days (+147 days) over the previous year as shown in Figure 2.

Angler Days by Early, Middle and Late Portions of CDFW Spring Creel Survey 6000 5000 # Estimated Angler Days 4000 3000 2000 1000 0 2010 2011 2012 2013 2014 2015 2016 2017 2018 目 EARLY (May 5 - June 3) MIDDLE (June 4 - July 1) LATE (July 2 - August 5)

Figure 1. Angler Days by Early, Middle, and Late Portions of CDFW Spring Creel Survey data, 2010 – 2018.



Figure 2. CDFW Spring Creel Survey Lower Klamath River, July 2 to August 5, 2014 – 2019.

The period on the lower Klamath River between July 1 and August 14, and the upper Trinity River and New River between July 1 and August 31, coincides with generally higher work and school vacations and should optimize the potential for increased visitor expenditures, sales tax, and transient occupancy tax revenues to the affected areas, particularly: Crescent City and Klamath (Del Norte County), Eureka, Arcata, and Willow Creek (Humboldt County), Yreka (Siskiyou County), and Weaverville (Trinity County). Angler spending is anticipated to be received by an array of small businesses that serve sport fishing activities.

# A. Fiscal Impact on Local Government

# 1. Tax Revenue Impact Projections Methods

The proposed re-opening was evaluated as to what extent it would impact travel times, visits to each fishery area, and length of stay to each area. The activities involve participant expenditures in the retail, food and accommodations, automotive service and fuel, sporting equipment sales/rent/lease, and recreational services sectors. Direct expenditures generate local sales and transient occupancy tax for the Klamath River Basin area local governments.

# a. Local Sales Tax

The California State Board of Equalization reports local sales tax rates for the areas under evaluation. Local sales tax rates in Del Norte, Siskiyou, Trinity, and Humboldt counties range from 1.30% to 1.83%. Increases in visitor spending due to increased numbers of visits and in the length of stay could result in sales tax revenue gains that are estimated to range from \$3,288 to \$3,536 over the open period.

# b. Transient Occupancy Tax (TOT)

Lower Klamath River spring Chinook Salmon angler creel data sorted by zip code of origin show that a large share (65%) of anglers participating in the fishery are from out of the area (Figure 3).

Sport anglers' survey responses reveal that those who travel a greater distance to the fishery area are more likely to choose to stay overnight in the area. Those who live in the closest proximity to fishery sites and those who fish in the earliest hours of the day show a lower likelihood of staying overnight. Overnight stays are often at private campgrounds, motels, and hotels, all of which collect TOTs. County treasurer tax collectors report the county TOTs, with rates in Del Norte, Siskiyou, Trinity, and Humboldt counties ranging from 8% to 10%. The projected gains in overnight stays range from 974 to 1,047 nights, which could result in gains in local TOT revenues to local governments from \$15,333 to \$16,490 over the open period.





# B. Fiscal Impact on State Government

# 1. State Government Sales Tax Revenue

Additional spending in the impacted Klamath River Basin areas is expected to also translate into small increases in California state tax revenue in the range of \$13,434 to \$14,449 over the period proposed to remain open, given a six percent state sales tax rate (excluding local taxes) in the affected cities and counties (Table 1).

# Table 1. Angler Days Estimated State and Local Sales Tax Revenue 2018-2019, (2019\$).

Survey Year	Angler Days	Spending per Day	Total Angler Local Spending	State Sales Tax Revenues	Local Sales Tax Revenues
2018	1,947	\$ 115	\$ 223,905	\$ 13,434	\$ 3,288
2019	2,094	\$ 115	\$ 240,810	\$ 14,449	\$ 3,536

Source: California Department of Tax and Fee Administration, CDFW Spring Creel Survey, U.S. Department of the Interior, *In-River Sport Fishing Economics Technical Report*, National Oceanographic and Atmospheric Administration, National Marine Fisheries Service, September 2011.

# 2. California Department of Fish and Wildlife Revenue Impact

# a. Changes in North Coast Salmon Report Card Sales

Estimates of North Coast Salmon Report Card sales losses or gains are based on the Department License and Revenue Branch (LRB) sport fishing license volume and revenue historical records. Surveys of the Klamath River Basin fishing community, fishers and businesses also inform the estimates.

Apparent relations between changes in take limits and report card sales may not be indicative of continued patterns in the future. Other factors may influence participation in the fishery, such as gas prices, weather, consumer confidence and other unknowns.

While difficult to predict, the proposed re-adoption could result in an estimated maintenance of North Coast Salmon card sales in the range of 1,000 to 3,000, cards, which could result in card sales revenue gains to the Department from \$6,740 to \$20,220 at the 2020 card price of \$6.74. Any changes in card sales revenue for the two fiscal years after the sunset of the proposed emergency regulation extension cannot be projected as the future status of the candidate species is not known at this time.

#### **Print Form**

Appendix E

# DRAFT

# Notice of Exemption

<b>To:</b> Office of Planning and Research P.O. Box 3044, Room 113 Sacramento, CA 95812-3044	From: (Public Agency):
County Clerk County of:	(Address)
Project Title:	
Project Applicant:	
Project Location - Specific:	
Project Location - City:	Project Location - County:
Description of Nature, 1 urpose and Dene	
Name of Public Agency Approving Project Name of Person or Agency Carrying Out I Exempt Status: <b>(check one):</b> Ministerial (Sec. 21080(b)(1); 152 Declared Emergency (Sec. 21080( Emergency Project (Sec. 21080( Categorical Exemption. State typ Statutory Exemptions. State code Reasons why project is exempt:	t: Project: 268); 0(b)(3); 15269(a)); b)(4); 15269(b)(c)); be and section number: e number:
Lead Agency Contact Person:	Area Code/Telephone/Extension:
If filed by applicant: 1. Attach certified document of exemp 2. Has a Notice of Exemption been fil	ption finding. Ied by the public agency approving the project? □Yes □No
Signature:	Date: Title:
□ Signed by Lead Agency □ S	Signed by Applicant
Authority cited: Sections 21083 and 21110, Public Reference: Sections 21108, 21152, and 21152.1, F	Resources Code.       Date Received for filing at OPR:         Public Resources Code.



#### ATTACHMENT TO NOTICE OF EXEMPTION

#### Emergency regulation 14 CCR 7.50(b)(91.2) - Take of Chinook Salmon CESA

The California Fish and Game Commission (Commission) has taken final action under the Fish and Game Code and the Administrative Procedure Act with respect to the rulemaking identified on the Notice of Exemption. 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 regulations relying on the statutory exemption for "Specific actions necessary to prevent or mitigate an emergency" contained in Section 21080(b)(4)of the Public Resources Code and the categorical exemption for "Actions by Regulatory Agencies for Protection of Natural Resources" contained in CEQA Guidelines section 15307 (Cal. Code Regs., tit. 14, §§ 15307.)

#### Specific Actions Necessary to Prevent or Mitigate an Emergency

Regulations concerning the take of spring Chinook Salmon (where catch and release, or harvest, constitute take) in the Klamath River Basin are codified in subsection (b)(91.1) of Section 7.50, Title 14, California Code of Regulations (CCR).

On July 23, 2018, the Fish and Game Commission (Commission) received a petition to list Upper Klamath-Trinity Spring Chinook Salmon (UKTSCS) as endangered under the California Endangered Species Act (CESA). The petitioners, the Karuk Tribe and the Salmon River Restoration Council, submitted information indicating that declining population trends are evidence of extremely low UKTSCS abundance compared to historical status, and the current low numbers make UKTSCS vulnerable to extinction.

On February 6, 2019, the Commission found that there is sufficient information to indicate that the petitioned action may be warranted, after which the Commission then accepted the petition for consideration. Acceptance of the petition initiates a one-year review by the Department of Fish and Wildlife (Department) for determining the species status, which will include either a recommendation to the Commission that the petitioned action is not warranted, or a recommendation that the species be listed as threatened or as endangered. During the status review period, the species is considered a "candidate" species, which automatically confers CESA take prohibition measures (Fish and Game Code Section 2085). The Commission also adopted emergency regulations 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 February went into effect February 28, 2019 and expired August 28, 2019. Those regulations prevented recreational fishing in portions of the Klamath and Trinity rivers that previously allowed for limited take of chinook salmon.

At its February 6, 2019 meeting, the Commission 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 the Commission consider shortening the closed periods or otherwise allow some take of Chinook salmon during the spring season. 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

# DRAFT

nature of 2085 protections for candidate species, constitute an emergency that this regulation addresses.

#### **Categorical Exemption to Protect Natural Resources**

Moreover, the limited fishing opportunity allowed under these regulations provides protection to the resource as follows:

- 1. The opening date in the lower Klamath River protects the majority of wild-origin UKTSCS which enter and migrate through the lower Klamath River by reducing the spring Chinook Salmon fishing season by six months. These wild salmon are destined for spawning in the Upper Salmon River and Upper South Fork Trinity River. Similarly, the opening date on the upper Trinity River protects wild UKTSCS by reducing the fishing season.
- 2. Lowering the bag limit from historic levels still reduces harvest, which provides protection for the wild UKTSCS population.
- 3. The objectives for hatchery production of spring Chinook Salmon at Trinity River Hatchery are to mitigate for the loss of spring Chinook Salmon habitat and spawning above Lewiston and Trinity dams, and to provide for foregone sport and tribal harvest opportunities associated with this loss. The regulation is consistent with the mitigation fishery objective. The opening date on the upper Trinity River protects UKTSCS, since the majority of the fish in this area between July and August are produced and stocked by the Trinity River Hatchery.
- 4. Integration of the feedback received during the February 6, 2019 Commission meeting and March 2019 Department outreach meetings into the proposed emergency regulations will help minimize economic hardship or loss associated with the February 2019 spring Chinook Salmon fishing closures. In particular, allowing fishing during the economically important Independence Day (July 4) weekend at the specified locations should provide significant economic benefits while minimizing effects to wild UKTSCS.

Item No. 20B

# STAFF SUMMARY FOR FEBRUARY 6, 2019

# 20B. UPPER KLAMATH-TRINITY RIVER SPRING CHINOOK SALMON

### Today's Item

Information □ Action ⊠

If FGC finds that listing Upper Klamath-Trinity River (UKTR) spring Chinook salmon (also referred to as Upper Klamath-Trinity Spring Chinook Salmon (UKTSCS)) may be warranted, consider adopting emergency regulations regarding Klamath River Basin sport fishing.

# **Summary of Previous/Future Actions**

• Today consider adopting emergency regulations Feb 6, 2019, Sacramento

# Background

Acceptance of a petition under CESA 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 confers CESA take prohibition measures to protect the species.

If FGC accepts the petition to list UKTSCS under agenda item 20A, DFW requests FGC adopt emergency regulations to protect UKTSCS during the status evaluation period. The proposed emergency regulations are necessary to better ensure reduced take of both migrating and spawning populations of UKTSCS in the Klamath River Basin for which recreational harvest is authorized under the current regulatory framework.

As specified in the DFW memo (Exhibit 1), the emergency regulations would amend Section 7.50 relating to Klamath River Basin sport fishing. The recommended actions will supersede existing regulations for spring Chinook salmon (subsections (b)(91.1)(E)2.a., 2.b., 6.b., 6.c., 6.e., and 6.f. of Section 7.50). The recommended actions concerning subsection (b)(91.1)(E)6.b. will also impact Klamath River fall Chinook salmon (KRFC) regulations by prohibiting the take of any Chinook salmon in a segment of the Trinity River until October 15. (KRFC quota management applies September 1 through December 31 on the Trinity River.)

Additionally, Klamath River Basin Chinook salmon possession limits (subsections (C)2.a. and (C)2.b.) are proposed to be changed from 2 to "Closed to salmon fishing. No take or possession of Chinook salmon" for the river segments and dates listed in the DFW memo.

# Significant Public Comments (N/A)

# Recommendation

*FGC staff:* If FGC accepts the UKTSCS petition for further evaluation during Agenda Item 20A, adopt emergency regulations as recommended by DFW.

**DFW:** If FGC accepts the UKTSCS petition for further evaluation during Agenda Item 20A, adopt emergency regulations specified in the DFW memo.

# Exhibits

1. DFW memo, received Jan 30, 2019

# **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 conservation of Upper Klamath-Trinity River spring Chinook salmon.
- 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.
- 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 recommended by the California Department of Fish and Wildlife.

Item No. 19

# STAFF SUMMARY FOR APRIL 17, 2019

# 19. UPPER KLAMATH-TRINITY RIVER SPRING CHINOOK SALMON

# Today's Item

Information  $\Box$  Action  $\boxtimes$ 

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 Feb 6, 2019; Sacramento warranted
- Adopted emergency regulations to reconcile Feb 6, 2019; Sacramento recreational take regulations with the CESA prohibition
- 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.

# **Commission Designated Wild Trout Waters**

It is the policy of the Fish and Game Commission to:

 Designate certain state waters to be managed exclusively for wild trout. Commission designated wild trout waters should provide a quality experience by providing the angler with an opportunity to fish in aesthetically pleasing and environmentally productive waters with trout populations whose numbers or sizes are largely unaffected by the angling process.

Waters designated by the Commission for wild trout management shall meet the following criteria:

- A. Angler Access
  - Open for public angling with unrestricted access when of sufficient dimensions to accommodate anglers without overcrowding. or
  - 2. Open for public angling with controlled access under a plan approved by the Commission setting forth the number of anglers and the method of distribution.
- B. Able to support, with appropriate angling regulations, wild trout populations of sufficient magnitude to provide satisfactory trout catches in terms of number or size of fish.
- II. Wild trout waters shall be managed in accordance with the following stipulations:
  - A. Domestic strains of catchable-sized trout shall not be planted in designated wild trout waters.
  - B. Hatchery-produced trout of suitable wild and semi-wild strains may be planted in designated waters, but only if necessary to supplement natural trout reproduction.
  - C. Habitat protection is of utmost importance for maintenance of wild trout populations. All necessary actions, consistent with State law, shall be taken to prevent adverse impact by land or water development projects affecting designated wild trout waters.
- III. The Department shall prepare and periodically update a management plan for each water designated as a wild trout water.
- IV. Certain designated wild trout waters may be further designated by the Commission as "Heritage Trout Waters", to recognize the beauty, diversity, historical significance, and special values of California's native trout. Heritage Trout Waters shall meet the following additional criteria:
  - A. Only waters supporting populations that best exemplify indigenous strains of native trout within their historic drainages may qualify for designation.
  - B. Heritage Trout Waters shall be able to provide anglers with the opportunity to catch native trout consistent with the conservation of the native trout present.
- V. Recognizing the importance of native trout to California's natural heritage, the Department shall emphasize education and outreach efforts to inform the public about our native trout,

their habitats, and the activities for restoration of native trout when implementing the Heritage Trout Program.

A. Implement a Heritage Trout Angler Recognition Certificate through which anglers will have the opportunity to have their catches of California native trout recognized by the Commission. The criteria for receiving the formal recognition shall be maintained by the Department's Heritage and Wild Trout Program. To receive a certificate of recognition, anglers shall submit an application with supporting materials to the Department for review.

The following waters are designated by the Commission as "wild trout waters":

- 1. American River, North Fork, from Palisade Creek downstream to Iowa Hill Bridge (Placer County).
- 2. Carson River, East Fork, upstream from confluence with Wolf Creek excluding tributaries (Alpine County).
- 3. Clavey River, upstream from confluence with Tuolumne River excluding tributaries (Tuolumne County).
- 4. Fall River, from Pit No. 1 powerhouse intake upstream to origin at Thousand Springs including Spring Creek, but excluding all other tributaries (Shasta County).
- 5. Feather River, Middle Fork, from Oroville Reservoir upstream to Sloat vehicle bridge, excluding tributaries (Butte and Plumas counties).
- 6. Hat Creek, from Lake Britton upstream to Hat No. 2 powerhouse (Shasta County).
- 7. Hot Creek, from Hot Springs upstream to west property line of Hot Creek Ranch (Mono County).
- 8. Kings River, from Pine Flat Lake upstream to confluence with South and Middle forks excluding tributaries (Fresno County).
- 9. Kings River, South Fork, from confluence with Middle Fork upstream to western boundary of Kings Canyon National Park excluding tributaries (Fresno County).
- 10. Merced River, South Fork, from confluence with mainstem Merced River upstream to western boundary of Yosemite National Park excluding tributaries (Mariposa County).
- 11. Nelson Creek, upstream from confluence with Middle Fork Feather River excluding tributaries (Plumas County).
- 12. Owens River, from Five Bridges crossing upstream to Pleasant Valley Dam excluding tributaries (Inyo County).
- 13. Rubicon River, from confluence with Middle Fork American River upstream to Hell Hole Dam excluding tributaries (Placer County).
- 14. Yellow Creek, from Big Springs downstream to confluence with the North Fork of the Feather River (Plumas County).
- 15. Cottonwood Creek, upstream from confluence with Little Cottonwood Creek, including tributaries (Inyo County).
- 16. Klamath River, from Copco Lake to the Oregon border (Siskiyou County).
- 17. McCloud River, from Lake McCloud Dam downstream to the southern boundary of Section 36, T38N, R3W, M.D.B. & M. (Shasta County).
- 18. Deep Creek, from confluence with Green Valley Creek downstream to confluence with Willow Creek (San Bernardino County).

- 19. Middle Fork Stanislaus River, from Beardsley Afterbay Dam to Sand Bar Diversion Dam (Tuolumne County).
- 20. Truckee River, from confluence with Trout Creek downstream to the Nevada State line (excluding the property owned by the San Francisco Fly Casters Club) (Nevada and Sierra counties).
- 21. Sespe Creek, a 25-mile section between the Lion Campground and the boundary of the U.S. Forest Service, Los Padres National Forest (Ventura County).
- 22. East Fork Carson River, from Hangman's Bridge near Markleeville downstream to the Nevada state line (Alpine County).
- 23. Bear Creek, Bear Valley Dam (impounding Big Bear Lake) downstream to the confluence with the Santa Ana River (San Bernardino County).
- 24. Lavezolla Creek (Sierra County).
- 25. Laurel Lake #1 and Laurel Lake #2 (Mono County).
- 26. Middle Fork San Joaquin River Northern boundary of the Devils Postpile National Monument downstream to the Lower Falls (3.6 miles); and footbridge just above the confluence with Shadow Creek downstream to the footbridge just above upper Soda Springs Campground (4 miles) (Madera County).
- 27. South Fork Kern River watershed from its headwaters downstream to the southern boundary of the South Sierra Wilderness (Tulare County).
- 28. Golden Trout Creek drainage, including tributaries, from confluence with the Kern River upstream to the headwaters (Tulare County).
- 29. Eagle Lake, north of Susanville (Lassen County).
- 30. Upper Kern River, from the Forks of the Kern, upstream to Tyndall Creek in Sequoia National Park (Tulare County).
- 31. Heenan Lake, near Markleeville and Monitor Pass (Alpine County).
- 32. Upper Truckee River, including tributaries, upstream from the confluence with Showers Creek (El Dorado and Alpine counties).
- 33. Sacramento River, including tributaries, from Box Canyon Dam downstream to Scarlett Way in Dunsmuir (Siskiyou County) and from the county bridge at Sweetbriar downstream to Lake Shasta (Shasta County).
- 34. Long Lake (Plumas County).
- 35. Piru Creek, including tributaries, upstream of Pyramid Lake (Ventura and Los Angeles counties).
- 36. Upper Stony Creek including tributaries, upstream from Mine Camp Campground (Colusa, Glenn, and Lake counties).
- 37. Lower Honeymoon Lake (Fresno County).
- 38. Upper East Fork San Gabriel River, including tributaries, upstream from Heaton Flat (Los Angeles County).
- 39. Royce Lake #2 (Fresno County).
- 40. Lower Yuba River, from Englebright Dam to the confluence with the Feather River (Yuba and Nevada counties).
- 41. Parker Lake (Mono County).

- 42. South Fork San Joaquin River and all tributaries from Florence Lake upstream to the boundary of Kings Canyon National Park including the Piute Creek drainage (Fresno County).
- 43. Sallie Keyes Lakes (Fresno County).
- 44. Sacramento River from Keswick Dam downstream to the Red Bluff Diversion Dam (Shasta and Tehama counties)
- 45. Pauley Creek from the confluence with the Downie River upstream to the headwaters (Sierra County).
- 46. Caples Creek from the confluence with the Silver Fork American River upstream to Caples Lake Dam (El Dorado and Alpine counties).
- 47. Putah Creek from Lake Solano upstream to Monticello Dam on Lake Berryessa (Solano and Yolo counties).
- 48. Lake Solano (Solano and Yolo counties).
- 49. Milton Reservoir (Nevada and Sierra counties).
- 50. Gerle Creek Divide Reservoir (El Dorado County).
- 51. Manzanita Lake (Shasta County).
- 52. Maggie Lake (Tulare County).
- 53. Little Kern River drainage, including tributaries, from the confluence with the Kern River upstream to the headwaters (Tulare County).
- 54. Hilton Lake #1 (Davis Lake) (Mono County).
- 55. South Fork Smith River, from the confluence with Blackhawk Creek upstream to the Island Lake Trail crossing, including the following tributaries: Buck Creek, Quartz Creek, Eight Mile Creek, Williams Creek, Harrington Creek and Prescott Fork and excluding all other tributaries (Del Norte County).
- 56. South Fork Smith River, from the confluence with Goose Creek upstream to Blackhawk Creek, including Goose Creek and Hurdygurdy Creek and excluding all other tributaries (Del Norte County).
- 57 Hilton Lake #2 (Mono County).
- 58. South Fork Smith River, from the confluence with Craigs Creek upstream to the confluence with Goose Creek, including Craigs Creek, Rock Creek, and Coon Creek and excluding all other tributaries (Del Norte County).
- 59. Hilton Lake #4 (Mono County).
- 60. North Fork Smith River, from the confluence with Middle Fork Smith River upstream to the Oregon state line, including Stoney Creek, Diamond Creek, North Fork Diamond Creek, and excluding all other tributaries (Del Norte County).
- 61. Hilton Lake # 5 (Mono County). Hilton Lake #5 is located at the latitude/longitude of 37°28'37.99"N, 118°45'39.39W and elevation of 10,700 feet, in the Hilton Creek drainage, near Tom's Place.

The following "wild trout waters" are further designated by the Commission as "heritage trout waters".

1. Clavey River, upstream from confluence with Tuolumne River, excluding tributaries (Tuolumne County).

- 2. Golden Trout Creek drainage, including tributaries, from confluence with the Kern River upstream to the headwaters (Tulare County).
- 3. Eagle Lake, north of Susanville (Lassen County).
- 4. Upper Kern River, from the Forks of the Kern, upstream to Tyndall Creek in Sequoia National Park (Tulare County).
- 5. Heenan Lake, near Markleeville and Monitor Pass (Alpine County).
- 6. Upper Truckee River, including tributaries, upstream from the confluence with Showers Creek (El Dorado and Alpine counties).
- 7. Piru Creek, including tributaries, upstream of Pyramid Lake (Ventura and Los Angeles counties).
- 8. Upper Stony Creek including tributaries, upstream from Mine Camp Campground (Colusa, Glenn, and Lake counties).
- 9. Upper East Fork San Gabriel River, including tributaries, upstream from Heaton Flat (Los Angeles County).
- 10. Lower Yuba River, from Englebright Dam to the confluence with the Feather River (Yuba and Nevada counties).
- 11. Little Kern River drainage, including tributaries, from the confluence with the Kern River upstream to the headwaters (Tulare County)
- 12. South Fork Smith River, from the confluence with Blackhawk Creek upstream to the Island Lake Trail crossing, including the following tributaries: Buck Creek, Quartz Creek, Eight Mile Creek, Williams Creek, Harrington Creek and Prescott Fork and excluding all other tributaries (Del Norte County).
- 13. South Fork Smith River, from the confluence with Goose Creek upstream to Blackhawk Creek, including Goose Creek and Hurdygurdy Creek and excluding all other tributaries (Del Norte County).
- 14. South Fork Smith River, from the confluence with Craigs Creek upstream to the confluence with Goose Creek, including Craigs Creek, Rock Creek, and Coon Creek and excluding all other tributaries (Del Norte County).

(Amended: 01/04/94; 06/22/95; 03/06/97; 11/06/98; 04/02/99; 12/08/00; 04/03/03; 12/12/08, 11/04/09, 10/21/10, 11/17/11; 11/07/12, 11/06/13, 12/03/14; 12/10/15; 10/20/16; 12/06/17; 12/13/18)

# Memorandum

Date: November 19, 2019

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

From: Charlton H. Bonham Director

### Subject: Agenda Item for the December 11, 2019 Fish and Game Commission Meeting: *Recommendations for Designation of new Wild Trout Waters for 2019*

Fish and Game Code, Section 7260(c), grants the Fish and Game Commission (Commission) the authority to designate Heritage Trout Waters recognizing the beauty, diversity, historical significance, and special value of California's native trout. Designations are limited to waters that: support populations that best exemplify indigenous strains of native trout within their historic drainages; provide anglers with an opportunity to catch native trout in a manner that promotes the conservation of native trout; where stocking of hatchery trout has been restricted; and where angling regulations maintain the wild trout fishery through natural reproduction.

Fish and Game Code, Section 1727(b), requires the Department of Fish and Wildlife (Department) to annually prepare a list of no less than 25 miles of stream or stream segments and at least one lake deemed suitable for designation as Wild Trout Waters and to submit this list to the Commission. To comply with these requirements, the Department proposes the following waters:

North Fork Smith River, from the confluence with Middle Fork Smith River upstream to the Oregon state line, including Stoney Creek, Diamond Creek, North Fork Diamond Creek, and excluding all other tributaries (Del Norte County).

This proposed Heritage Trout Water designation incorporates approximately 33 miles of perennial stream habitat, most of which are located on public lands administered by the U.S. Forest Service, Six Rivers National Forest. The North Fork Smith River and its tributaries contain self-sustaining populations of both Coastal Cutthroat Trout and Coastal Rainbow Trout within their historic range/native drainages and is a fast-action fishery (> 2 fish per hour), with trophy trout (>18") potential. The Smith River watershed is of state and national importance with National Recreational Area and Wild and Scenic River designations, prized salmonid fisheries, and the prestigious status of the longest free-flowing, undammed river system in the United States - making this fishery a unique resource in the state and a quintessential candidate for Heritage Trout designations.

Melissa Miller-Henson, Executive Director Fish and Game Commission November 19, 2019 Page 2

The Department has conducted annual direct observation (snorkel) and intermittent angling surveys of this portion of the Smith River drainage, both of which support designation as a high-quality stream fishery, with robust populations of both Coastal Cutthroat and Rainbow trout. This designation will expand upon, and be contiguous with, the 2016, 2017, and 2018 designations in the South Fork Smith River drainage, which included: South Fork Smith River, from the confluence with Blackhawk Creek upstream to the Island Lake Trail crossing, including the following tributaries: Buck Creek, Quartz Creek, Eightmile Creek, Williams Creek, Harrington Creek and Prescott Fork and excluding all other tributaries (Del Norte County) (2016,2017); South Fork Smith River, from the confluence with Goose Creek upstream to the confluence with Blackhawk Creek, including Goose Creek and Hurdygurdy Creek and excluding all other tributaries; and South Fork Smith River, from the confluence with Craigs Creek upstream to Goose Creek, including Craigs Creek, Rock Creek and Coon Creek and excluding all other tributaries (Del Norte County) (2018). The Department has consulted both Del Norte County Fish and Game Advisory Committee and Smith River Alliance regarding previous and current designations within the Smith River watershed.

*Hilton Lake # 5 (Mono County).* Hilton Lake #5 is located at the latitude/longitude of 37°28'37.99" N, 118°45'39.39W and elevation of 10,700 feet, in the Hilton Creek drainage, near Tom's Place.

Hilton Lake #5 is part of an interconnected lake complex known as Hilton Creek Lakes and is a fast-action fishery (>2 fish per hour) for Brook Trout. There are 10 lakes within this basin, eight of which support self-sustaining trout fisheries with varying species composition. Anglers have the opportunity to achieve a so-called "Sierra Grand Slam" (catching four trout species within the same day, including Brown, Brook, Rainbow and Golden trout in the Hilton Creek Lakes basin).

The basin is located in a remote and scenic wilderness setting. This Wild Trout designation expands upon the 2018 designation of Hilton Lake #4 and Hilton Lake #1 (aka Davis Lake) and 2017 designation of Hilton Lake #2 and incorporates approximately 6 surface acres of aquatic habitat. The HWTP has conducted angling assessments and visual reconnaissance of spawning habitat, both of which support designation as a high quality, self-sustaining, lake fishery. Future proposed designation of other lakes in the drainage is planned, with the long-term intent of having all the lakes supporting self-sustaining trout fisheries within the basin designated as Wild Trout Waters. Further evaluation of the visitor use patterns, fishing pressure, and potential harvest in Hilton Lake #3 is required.

The Department has verified that no restoration of amphibians or other native aquatic species is planned within the drainage; thus, no conflict exists with managing this area for recreational angling into the future.
Melissa Miller-Henson, Executive Director Fish and Game Commission November 19, 2019 Page 3

The recommended streams and lakes meet existing criteria to satisfy the requirements for designation as Wild and/or Heritage Trout Waters and no changes in angling regulations are necessary at this time. If you have any questions or need additional information, please contact

Kevin Shaffer, Chief, Fisheries Branch at (916) 327-8841 or kevin.shaffer@wildlife.ca.gov.

Attachments

ec: Stafford Lehr, Deputy Director Wildlife and Fisheries Division <u>Stafford.Lehr@Wildlife.ca.gov</u>

> Kevin Shaffer, Chief Fisheries Branch Kevin.Shaffer@Wildlife.ca.gov

Karen Mitchell Senior Environmental Scientist Fisheries Branch Karen.Mitchell@Wildlife.ca.gov

# North Fork Smith River Designated Heritage and Wild Trout Waters - 2019





# Hilton Lake #5 Designated Wild Trout Water - 2019





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Phone (707) 464-7204 December 10, 2019

# COUNTY OF DEL NORTE BOARD OF SUPERVISORS

981 "H" Street, Suite 200 Crescent City, California 95531

> Fax (707) 464-1165

California Fish and Game Commission 1416 Ninth Street, Room 1320 Sacramento, CA 95814

Submitted via email to: fgc@fgc.ca.gov

Subject: Potential North Fork Smith River Heritage Trout Designation

Dear Commissioners:

The Del Norte County Board of Supervisors (Board) wishes to comment on the proposed North Fork Smith River Heritage Trout Designation. We do have concerns that have not been addressed by the California Department of Fish and Wildlife (Department) regarding this proposal.

Primarily, we are concerned with the fact that the Board received notice of the proposed designation on November 18; less than a month in advance of the Fish and Game Commission agenda date for this item, on December 11. The lack of notice on the Department's part does not provide the Board with enough time to acceptably deliberate these important issues that affect our Smith River watershed. As has been noted in our September 27, 2016 letter to the Department regarding the Upper South Fork Smith River Heritage Trout Designation, we take these proposals seriously and hope that the Department decides to provide us with additional notice in the future. For this reason, we must object to the designation of the entire North Fork Smith River without more time to properly consider its effects.

The Board is also concerned about the lack of information on how these designations may impact private property located along these reaches. It does not appear that any analysis was conducted in the *South Fork Smith River Fishery Management Guidelines* prepared in 2017 with regard to Heritage Trout designation effects on adjacent landowners. This is essential information for the Board to have while deliberating. Related to this, the Board is troubled by the fact that new designations are being proposed before Management Plans are adopted and circulated for past designations.

At this time, we are unable to support the proposed designation of the North Fork Smith River as a "Heritage Trout" water. We further request that this reach be withdrawn from designation until such time the Board can properly deliberate, with the information that was supposed to be provided to us in 2016, about how this looks from a regulatory perspective. We look forward to this information and hope that in the future, the Department seeks to coordinate with us early and often.

Regards,

Lori L. Cowan, Chair Del Norte County Board of Supervisors

ec: California Department of Fish and Wildlife Tina Bartlett, Northern Regional Manager Tina.Bartlett@wildlife.ca.gov

# California Fish and Game Commission Staff Report on Staff Time Allocation and Activities

February 12, 2020

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 and to specific activities during December 2019 and January 2020. 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 25% 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.

In this reporting period, the special projects category continues to take a larger proportion of staff time for items such as document accessibility, strategic planning, and work related to the California Law Revision Commission review. In December, staff spent considerable time preparing the Commission's first risk assessment report to comply with the State Leadership Accountability Act; a biennial report that identifies risks to our organization and mitigating strategies, it was submitted to the California Department of Finance by the year-end deadline.

As noted in the staff summary and the table below, staff departures resulted in vacancies in approximately one quarter of our positions. With a small staff, even one departure has a tremendous impact on staff workload, so refilling positions swiftly is a high priority.

Task Category	December Staff Time	January Staff Time
Regulatory Program	13%	17%
Non-Regulatory Program	2%	3%
Commission/Committee Meetings	26%	12%
Legal Matters	5%	5%
External Affairs	4%	7%
Special Projects	9%	7%
Administration	15%	18%
Leave Time	15%	13%
Unfilled Positions	24%	26%
Total Staff Time <sup>1</sup>	108%	107%

#### **General Allocation**

<sup>1</sup> Total staff time is greater than 100% due to overtime

#### **Activities for December 2019**

- Prepared for and conducted one publicly noticed meeting (December 11-12 Commission)
- Began preparations for two publicly noticed meetings (January 15 Wildlife Resources Committee, January 16 Tribal Committee)
- Advertised and recruited for the deputy executive director position
- Participated in Red Abalone Fishery Management Plan Project Team and Administrative Team meetings
- Conducted stakeholder discussion about the draft Delta fisheries management policy and potential revisions to the Commission's Striped Bass Policy
- Participated in multi-agency Chronic Wasting Disease Task Force meeting
- Prepared and submitted biennial report to comply with the State Leadership Accountability Act

#### Activities for January 2020

- Finalized preparations for and conducted two publicly noticed meetings (January 15 Wildlife Resources Committee, January 16 Tribal Committee)
- Began preparations for one publicly noticed meeting (February 21 Commission)
- Conducted interviews for the deputy executive director position
- Advertised and recruited for staff services analyst and regulatory analyst positions
- Participated in Western Association of Fish and Wildlife Agencies mid-winter meeting in Monterey
- Participated in public outreach for recreational Dungeness crab marine life protections regulations
- Conducted stakeholder discussion about the draft Delta fisheries management policy and potential revisions to the Commission's Striped Bass Policy
- Participated in Red Abalone Fishery Management Plan Project Team and Administrative Team meetings
- Participated in a DFW-hosted stakeholder workshop on experimental fishing permits program development
- Attended information session and site tour of the Wildlife Way Station in Los Angeles County with DFW staff and Commissioner Burns
- Conducted planning meetings with DFW for FGC/DFW sesquicentennial celebrations
- Participated in quarterly regulation coordination meeting with DFW
- Participated in Marine Protected Areas Statewide Leadership Team meeting to review joint work plan tasks

# **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/final statements of reasons
- Prepare administrative records

#### Non-Regulatory Program

- DFW partnership, including jointly developing management plans and concepts
- Process and analyze non-regulatory requests

# Commission/Committee Meetings and Support

- Research and compile subjectspecific 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

#### Legal Matters

- Public Records Act requests
- Process appeals and accusations
- Process requests for permit transfers

# External Affairs

- Engage and educate legislators, monitor legislation
- Maintain state, federal and tribal government relations

# **Special Projects**

- Coastal Fishing Communities
- Fisheries Bycatch Workgroup
- Streamline routine regulatory actions

- Track and respond to public comments
- Consult, research and respond to inquiries from the Office of Administrative Law
- Develop, review and amend Commission policies
- Research and review adaptive management practices
- Review and process California Endangered Species Act petitions
- 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
- Process kelp and state water bottom leases
- Litigation
- Prepare administrative records
- Correspondence
- Respond to public inquiries
- Website maintenance
- Strategic planning
- Aquaculture best management practices

• Website accessibility issues

# Administration

- Staff training and development
- Purchases and payments
- Contract management
- Personnel management

### Leave Time

- Holidays
- Sick leave
- Vacation or annual leave

- Service Based Budgeting Initiative
- Budget development and tracking
- Health and safety oversight
- Internal processes and procedures
- Document archival
- Jury duty
- Bereavement

# California Fish and Game Commission DRAFT Powers of the Executive Director February 14, 2020 DRAFT

The California Fish and Game Commission (Commission) has a wide range of responsibilities, some general in nature and some very specific. While the Commission meets at least once per month via committee or regular meetings, its authorities require daily actions to meet its responsibilities and, hence, employs an executive director and other staff to assist in conducting the Commission's operations.

The Commission believes that inherent in the employment of its executive director and other staff, those staff members have authority to carry out functions to help the Commission fulfill its responsibilities. However, the Commission adopts this document to explicitly authorize and ensure that its staff has the ability to maintain full functionality of the Commission.

By adopting this document, the Commission grants power for future actions and ratifies past staff action consistent with this grant.

# **Conditions of Delegations**

- 1. The Commission reserves the power to continue to exercise all lawful authority and this action is not a relinquishment of any such authority.
- 2. The delegations herein are not exclusive and the Commission reserves the power to delegate other powers by other means on a temporary or permanent basis
- 3. These delegations do not supersede any previous delegations (including authority in regulation such as: CESA petition processing in Section 670.1, regulatory petition processing in Section 662, and adding meeting agenda items in Section 665(a)(3)(B)4.).
- 4. The executive director is granted the power to further delegate to other Commission staff or legal counsel the authority provided herein to the extent not expressly prohibited by this delegation, or not expressly prohibited by law.
- 5. The executive director shall report to the Commission at each regular meeting on important delegated actions.

# Delegations

The Commission hereby grants the following authority upon its executive director:

# Regulations

- 1. Perform all functions necessary to carry out decisions of the Commission regarding regulatory actions; those functions include, but are not limited to:
  - a. Prepare and submit notices and other documents to the Office of Administrative Law (OAL) consistent with Commission action on a regulatory agenda item.
  - b. Communicate with OAL regarding submissions and responding to issues raised by OAL or the public.
  - c. Withdraw rulemaking submissions in response to OAL objections or proposed objections and resubmit revised documents addressing OAL issues or concerns

- d. Develop final statements of reason and associated responses to public comments.
- e. Draft and file statements of proposed emergency regulatory action, consistent with Commission actions.
- f. Submit to OAL amendments to Commission regulations in response to a final determination regarding the listing status of a species under the California Endangered Species Act.
- g. Submit to OAL amendments to Commission regulations for autoconformance to federal regulations.

# Adjudicatory Matters

- 2. Issue warnings in lieu of instituting a discretionary suspension or revocation of any license or permit.
- 3. Issue notice of revocation for instances of non-discretionary revocation (such as that under California Fish and Game Code Section 12155).
- 4. Assign hearing officers for the conduct of hearings on adjudicatory matters pending before the Commission (with a proposed decision resulting for the Commission's final consideration).
- 5. Entry of any orders that do not terminate the proceeding either in response to a party's motion or without prompting.
- 6. Issue notices regarding the status of adjudicatory matters pending before the Commission.
- 7. Reject untimely appeals.
- 8. Enter orders terminating any proceeding in response to settlement of the parties or in an otherwise uncontested matter.

# **Ongoing and Pending Litigation**

- 9. Accept service of process on behalf of the Commission.
- 10. Refer litigation to the Office of the California Attorney General and request representation.
- 11. Make procedural determinations related to litigation strategy.
- 12. Negotiate terms of settlements in response to offers from other parties (with final approval reserved to the Commission).

# California Environmental Quality Act

- 13. All actions necessary to comply with the California Environmental Quality Act (CEQA), the guidelines generally implementing CEQA, and the Commission's Certified Regulatory Program approved under CEQA, except that the following authority is not delegated: (1) Reviewing and considering a final environmental impact report (or equivalent document) or approving a negative declaration prior to approving a project, and (2) making findings as required by Sections 15091 and 15093 of the Public Resources Code. This delegation includes but is not limited to:
  - a. Determining whether a project is exempt.
  - b. Conducting or causing to be conducted an initial study and deciding whether to prepare a draft EIR or negative declaration.

- c. Preparing a negative declaration or EIR.
- d. Determining that a negative declaration has been completed within a period of 180 days.
- e. Preparing responses to comments on environmental documents.
- f. Filing notices.

#### **Contracts and Procurement**

- 14. Obligate and manage Commission funds and all associated processing for the expenditure of those funds.
- 15. Execute contracts and amendments to contracts on behalf of the Commission or authorize the execution of those documents.
- 16. Acquire, maintain and dispose of tangible property, excluding real property, deemed appropriate for aiding in Commission and Commission staff functioning.
- 17. Execute leases and amendments to leases consistent with Commission approval to lease specific water bottoms for purposes of aquaculture.
- 18. Execute leases and amendments to leases consistent with Commission approval to lease kelp beds for the exclusive harvest of kelp.

#### Interagency and External Affairs

- 19. Act as tribal liaison and engage in consultations and negotiations with California tribes and tribal communities.
- 20. Represent Commission interests on formal and informal interagency and stakeholder work groups, leadership teams, and committees.
- 21. Submit reports to the California State Legislature where required by California Fish and Game Code.
- 22. Meet with legislators, legislative staff, and legislative committees and caucuses concerning subjects related to the work of the Commission, consistent with Commission direction.
- 23. Meet with local, state and federal government entities concerning subjects related to the work of the Commission.
- 24. Meet with members of the public and representatives of organizations concerning subjects related to the work of the Commission.

# **General Administration**

- 25. Administer all personnel rules and take any personnel actions relating to employees of the Commission, contractors, or volunteers.
- 26. Make all necessary preparations for conducting Commission meetings.
- 27. Receive and send correspondence.
- 28. Develop and maintain document retention schedules for all Commission records and maintain Commission records consistent with those schedules.

- 29. Authorize federal acquisitions through the Migratory Bird Conservation Commission, when the affected county/counties and the California Department of Fish and Wildlife are in support.
- 30. Perform other administrative actions as may be necessary to supervise, direct, conduct, and administer the operations of the Commission pursuant to its duties under the California Fish and Game Code and other provisions of California law applicable to the Commission.

Received February 10, 2020 Orginal signed copy on file

# Memorandum

Date: February 10, 2020

- To: Melissa Miller-Henson Executive Director Fish and Game Commission
- From: Charlton H. Bonham Director

#### Subject: Mountain Lion Necropsy Report for 2019

Please find the attached report on mountain lion necropsies performed by the Department during 2019. This report was compiled by Department staff to comply with Section 4807 of the Fish and Game Code.

If you have any questions or need additional information, please contact Kari Lewis, Chief, Wildlife Branch, at (916) 445-3789.

Attachment

ec: Stafford Lehr, Deputy Director Wildlife and Fisheries Division Stafford.Lehr@wildlife.ca.gov

> Kari Lewis, Chief Wildlife Branch Wildlife and Fisheries Division Kari.Lewis@wildlife.ca.gov

Stella McMillin Environmental Program Manager Wildlife Branch Wildlife and Fisheries Division Stella.McMillin@wildlife.ca.gov State of California NATURAL RESOURCES AGENCY Department of Fish and Wildlife

Report to the Fish and Game Commission Regarding Findings of Necropsies on Mountain Lions Taken Under Depredation Permits in 2019

Prepared by the Wildlife Investigations Lab Wildlife Branch, Wildlife and Fisheries Division

January 10, 2020

Submitted in compliance with Section 4807 of the Fish and Game Code

#### **Summary**

According to California Department of Fish and Wildlife (CDFW) records at the time of this report, CDFW issued 194 mountain lion depredation permits in calendar year 2019 and 50 mountain lions were reported as being lethally taken.

The CDFW amended its mountain lion depredation, public safety, and animal welfare policy in December 2017. The purpose of the amendment is to avoid, where possible, mountain lion mortalities resulting from the issuance of depredation permits within specific geographically and genetically isolated mountain lion populations in Southern California as defined by Ernest et al. 2014<sup>1</sup>. A three-tier stepwise process allows the CDFW to first issue non-lethal mountain lion depredation permits that include hazing by the permit holder or authorized agent prior to the issuance of a lethal depredation permit within the Santa Ana and Santa Monica Mountains (implementation areas). In 2019, four non-lethal depredation permits were issued in these implementation areas. Only one of these incidents from the Santa Ana Mountains subsequently resulted in the lethal take of a mountain lion on depredation.

CDFW staff issued the greatest numbers of permits in April, May, September, and December (Figure 1). The reasons for property owners obtaining mountain lion depredation permits varied; however, goats accounted for the highest number of the total reported incidents (43%) followed by sheep (32%) (Figure 2).

Although 50 mountain lions were reported as being taken in 2019, CDFW staff necropsied 67 depredation carcasses, with five necropsies still pending at the time of this report. Fifty-eight percent of mountain lions necropsied to date were male and 35% were female; the sexes of four lions were not specified (Table 1). Sixty-seven percent of mountain lions necropsied to date were aged as adults (24 months or older); 22% were sub-adults (13-24 months of age); 7% were juveniles (12 months or younger); and the ages of 2 mountain lions were not recorded (3%; Table 2). The highest number of depredation mountain lion carcasses came from CDFW's North Region (34%; Table 3).

Necropsied mountain lion stomach contents that could be identified most frequently contained hoofstock such as goat (18%); however, other contents were observed including a mylar balloon (Figure 3).

Note: There are two main factors that may contribute to a greater number of depredation necropsies recorded than the number of mountain lions reported as taken on depredation by the CDFW Wildlife Incident Reporting system (WIR). First, reporting parties and CDFW staff have reported intermittently being unable to close WIR depredation incidents and report take. Additionally, the WIR system experienced technical difficulties during the month of August and paper permits were issued during that time. CDFW continues to make efforts to recover these permits, input reported data, and update the WIR system.

<sup>&</sup>lt;sup>1</sup> Ernest, Holly B., T.W. Vickers, S.A. Morrison, M.R. Buchalski, W.M. Boyce. 2014. Fractured Genetic Connectivity Threatens a Southern California Puma (Puma concolor) Population. PLoS ONE 9(10): e107985. doi:10.1371/journal.pone.0107985.

Figure 1. Monthly summary of lethal and non-lethal mountain lion depredation reports for 2019. The number of depredation permits issued each month and the number of mountain lions taken are shown.



Figure 2. Number of lethal and non-lethal depredation permits issued in 2019 and the type of property damage reported (i.e. animal(s) reported to have been taken by a mountain lion). These numbers are based upon the number of incidents and not the total number of animals claimed to have been taken in a single incident.



Fable 1. Sex of depredating n	nountain lions necropsie	ed by CDFW in 2019.
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Sex	Total by Sex	
Male	39	
Female	24	
Not indicated	4	

# Table 2. Ages of depredating mountain lions necropsied by CDFW in 2019.

Age Class	Total by Age Class	
Juvenile <sup>1</sup>	5	
Sub Adult <sup>2</sup>	15	
Adult <sup>3</sup>	45	
Not indicated	2	

<sup>1</sup> Juvenile: 12 months or younger <sup>2</sup> Sub Adult: 13-23 months <sup>3</sup> Adult: 24 months or older

Table 3. Geographic distribution of depredating mountain lions necropsied by CDFW in 2019.

CDFW Region	Total by Region
Northern	21
North Central	16
Bay Delta	12
Central	11
South Coast	6
Inland Desert	1

Figure 3. Stomach contents of depredating mountain lions necropsied by CDFW in 2019<sup>†</sup>.



<sup>†</sup> Note: One lawful method of take for depredating mountain lions is by cage trapping. Cage traps are typically baited with the remainder of a depredated carcass.

From: Rachelle Fisher <rachelle@strategicearth.com>
Sent: Wednesday, December 11, 2019 1:01 PM
To: FGC <FGC@fgc.ca.gov>
Cc: Miller-Henson, Melissa@FGC <Melissa.Miller-Henson@fgc.ca.gov>; Ashcraft, Susan@FGC
<Susan.Ashcraft@fgc.ca.gov>; Pope, Elizabeth@FGC <elizabeth.pope@fgc.ca.gov>; DCTF
<info@dungenesscrabtaskforce.com>
Subject: Dungeness Crab Task Force - Submission of 2019 Legislative Report

Dear President Sklar,

On behalf of the California Dungeness Crab Task Force (DCTF), the DCTF Administrative Team would like to submit the following report containing recommendations from the DCTF regarding management of the California Dungeness crab fishery. The report can also be accessed via the <u>DCTF's webpage</u>.

Pursuant to Fish and Game Code Section 8276.4, the DCTF is directed to review and evaluate the California Dungeness crab fishery and make management recommendations to the Joint Committee on Fisheries and Aquaculture, the California Department of Fish and Game, and the Fish and Game Commission. The recommendations in this report seek to respond to a range of issues facing the industry (e.g., marine life entanglements, domoic acid, Assembly Bill 1472, regulatory needs, etc.) and help inform the efforts of fisheries managers in addressing them.

If you have any questions about this document or about the DCTF, please contact Rachelle Fisher at 805-845-9852 or info@dungenesscrabtaskforce.com.

Sincerely, Rachelle Fisher and Kelly Sayce DCTF Administrative Team --Rachelle Fisher, MAS Senior Associate Strategic Earth Consulting P: 805-845-9852 C: 714-330-7976 rachelle@strategicearth.com http://www.strategicearth.com/



#### REPORT

TO:	Joint Committee on Fisheries and Aquaculture, Mike McGuire, Chair California Fish and Game Commission, Eric Sklar, President California Department of Fish and Wildlife, Charlton Bonham, Director
CC:	California Ocean Protection Council, Mark Gold, Executive Director California Fish and Game Commission, Melissa Miller-Henson, Executive Director California Fish and Game Commission, Elizabeth Pope, Acting Marine Advisor California Department of Fish and Wildlife, Craig Shuman, Marine Region Manager Pacific States Marine Fisheries Commission, Dave Colpo, Sr. Program Manager
FROM:	California Dungeness Crab Task Force
DATE:	December 11, 2019
RE:	October 2019 recommendations from the California Dungeness Crab Task Force as requested by Fish and Game Code 8276.4
APPENDICES:	<ol> <li>(1) Dungeness Crab Fishing Gear Working Group Fact Sheet</li> <li>(2) DCTF Charter - Updated October 2019</li> <li>(3) DCTF Summary from October 16-17, 2019</li> <li>(4) January 15, 2016 Interim Report</li> <li>(5) January 13, 2017 Final Report</li> <li>(6) December 20, 2017 Final Report</li> <li>(7) Marine Life Entanglement Settlement 2019- Case 3:17-cv-05685-MMC</li> <li>(8) DCTF Meeting Summary from October 16-18, 2017 meeting</li> <li>(9) Tri-State Dungeness Crab Commission Memorandum of Understanding (MOU)</li> <li>(10) DCTF Membership List</li> <li>(11) Assembly Bill 1472</li> <li>(12) Dungeness Crab Fishing Gear Working Group Updates and Recommendations, November 12, 2019</li> </ol>

This report provides recommendations from the California Dungeness Crab Task Force (DCTF) to the Joint Committee on Fisheries and Aquaculture (the Legislature), the California Department of Fish and Wildlife (CDFW), and the Fish and Game Commission (the Commission) to inform future Dungeness crab fishery management. The report includes an update on the DCTF's activities since October 2017, and more specifically, recommendations for a financial audit of the Dungeness Crab Account, new Legislation to address safety concerns in the fishery, address requests from the Tri-State Dungeness Crab Committee, and to address domoic acid and marine life entanglement issues.

The DCTF's work was completed pursuant to Fish and Game Code §8276.4 with financial support as directed by Fish and Game Code §8276.5.

Additional information, including DCTF history, previous reports, and meeting summaries with details on the development of the recommendations provided in this report, is available on the DCTF webpage: <u>http://www.opc.ca.gov/2009/04/dungeness-crab-task-force/</u>.

#### BACKGROUND

The commercial Dungeness crab fishery is one of the most valuable and productive fisheries in California<sup>1, 2</sup> with an average ex-vessel value<sup>3</sup> of approximately \$55.6 million per calendar year.<sup>4</sup> This is due in large part to strong demand for product by consumers, including international markets. The California Dungeness crab fishery has faced recently unprecedented events (e.g. elevated levels of domoic acid, whale entanglements (Appendix 1) resulting in litigation against the industry) that have created management and economic challenges for fishery managers and the Dungeness crab industry. Members of the Dungeness crab industry continue to show an interest in remaining engaged on the fishery's management to maintain the health of the fishery, safeguard its economic viability, minimize ecological impacts, and preserve the California fishing communities that rely on the resource.

The fishery consists of a diverse group of individuals, communities, viewpoints, and opinions regarding the management goals and objectives for the California Dungeness crab fishery generally vary by production level, vessel size, and homeport location.<sup>5,6</sup> This makes it challenging at times for fishery participants to reach agreements. Nonetheless, the DCTF continues to reach agreements and forward recommendations to fisheries managers and those with decision-making authority. The DCTF looks forward to continuing this work and informing the Legislature, CDFW, and the Commission on the outcomes of their discussions regarding the industry's priority issues.

#### Management of the California Commercial Dungeness Crab Fishery

The California Dungeness crab commercial fishery is managed by CDFW pursuant to California Fish and Game Code §8275 *et seq*, which requires the fishery to use a 3-S management strategy (sex, size, and season). Commercial harvest is restricted to male crabs, greater than 6.25 inches carapace (body) width, from mid-November through the end of June (Central Management Area<sup>7</sup>) and December 1 through July 15 (Northern Management Area). The California Fish and Game Code specifies the opening of the season for the Central Management Area (the area between in Sonoma-Mendocino county line and the Mexican border) as November 15 and the Northern Management Area (the area between in Sonoma-Mendocino county line and the Oregon border) as December 1.<sup>8</sup> In 2018-19, there were 552 permits, of which 437 were active and

http://www-csgc.ucsd.edu/EXTENSION/ADVISORS/Pomeroy.html.

<sup>&</sup>lt;sup>1</sup> Hackett, Steven, D. King, D. Hansen and E. Price. 2009. *The Economic Structure of California's Commercial Fisheries*. Technical Report . California Department of Fish and Game, Sacramento. http://www.dfg.ca.gov/marine/economicstructure.asp

<sup>&</sup>lt;sup>2</sup> The Dungeness crab fishery is an important contributor to the economy of several port communities such as Crescent City (Pomeroy, C., et al. 2010. Pomeroy, C., et al. (2011). California's North Coast Fishing Communities: Historical Perspective and Recent Trends. California Sea Grant Technical Report T-072,. La Jolla, CA: 350p. http://www.csgc.ucsd.edu/EXTENSION/ADVISORS/Pomeroy.html)

<sup>&</sup>lt;sup>3</sup> Ex-vessel value is the amount paid to fishermen when they land (deliver) their catch to buyers the docks.

<sup>&</sup>lt;sup>4</sup> Pers. communication C. Juhasz, California Department of Fish and Wildlife.

<sup>&</sup>lt;sup>5</sup> Dewees, C.M. et al. 2004. Racing for crabs: Cost and management options evaluated in Dungeness crab fishery. California Agriculture. Vol. 58(4): 186-193.

<sup>&</sup>lt;sup>6</sup> Pomeroy, C., et al. 2010. California's North Coast Fishing Communities: Historical Perspective and Recent Trends. California Sea Grant Technical Report T-072. La Jolla, CA: 350p.

<sup>&</sup>lt;sup>7</sup> The Central Management Area refers to all coastal districts south of the Mendocino/Sonoma County Line to the Mexican border.

<sup>&</sup>lt;sup>8</sup> Preseason crab quality testing is used to predict the meat recovery rate prior to the season opener. A recovery rate of 25% is required for the December 1 season opener in the Northern Management Area. If this standard is not met, testing

115 were inactive (or "latent"<sup>9</sup> referring to those permits (vessels) with landings of less than 200lbs in the previous season).

In contrast to the commercial fishery, the Dungeness crab recreational fishery is managed by the Commission, with measures such as a specified season, daily bag limits, and minimum size requirements. The specifics of the season vary by region while CPFVs are the only sport fishing mode that has trap limits.

#### DCTF PROCESS AND PROCEDURES

The DCTF's operating and voting procedures are described in Fish and Game Code §8276.4 and the DCTF Charter (<u>Appendix 2</u>). The DCTF is composed of 27 members, including 17 members representing commercial fishing interests, two members representing sport fishing interests, two members representing commercial passenger fishing vessel (CPFV) interests, two members representing university of California Sea Grant, and two members representing the California Department of Fish and Wildlife (CDFW).

The California Ocean Protection Council (OPC) and CDFW carried out the most recent DCTF commercial fishing elections (as described in Fish and Game Code §8276.4) for half of the port complexes. Commercial fishermen are elected to the DCTF by their peers to represent their home port complexes and production level. The other half of the ports will have elections in 2020 and OPC and CDFW will conduct DCTF elections every three years in each port, on a staggered basis. Additionally, as mandated in Fish and Game Code §8276.4, the Chair of the OPC appointed members for the seven non-commercial fishing seats. following a public solicitation for nominations. The results of the 2019 DCTF commercial fishing elections and the results of the non-commercial fishing representatives from the public solicitation are available on the DCTF's webpage.

The DCTF Charter establishes ground rules, member roles, and voting procedures for the group and was most recently amended in October 2019. In keeping with those procedures and in response to the Legislature's request for management recommendations, the DCTF Charter states that, "a proposed recommendation that receives an affirmative vote of at least 15 of the voting members of the DCTF may be transmitted ... [and] shall be considered to be the consensus of the task force, and shall be considered to be evidence of consensus in the Dungeness crab industry." The following voting protocol, described in the DCTF Charter, was used to conduct straw polls and final voting on DCTF recommendations:

- **Thumbs Down:** I do not agree with the proposal. I feel the need to block its adoption and propose an alternative.
- Thumbs Sideways: I can accept the proposal although I do not necessarily support it.
- Thumbs Up: I think this proposal is the best choice of the options available to us.
- Abstention: At times, a pending decision may be infeasible for a Member to weigh in on.

Thumbs up and thumbs sideways are *both* counted as affirmative votes in determining whether a recommendation has the required 15-vote majority.

is repeated at specific time intervals until this recovery rate is achieved, with the fishery opening no later than January 15, regardless of test results at that time. Requirements for preseason testing do not apply in the Central Management Area.

<sup>&</sup>lt;sup>9</sup> The Department does not use the term "latent" permit(s) formally. The definition of latent was developed by the DCTF.

#### DCTF VOTES AND ANALYSIS

The following recommendations were developed by the DCTF over the course of one meeting held on October 16-17, 2019. The recommendations represent agreements of DCTF members (as per voting protocols defined in the DCTF Charter (<u>Appendix 2</u>); however, in some cases they are not the *verbatim* language used when the votes were taken. Because of the iterative nature of the conversations at the DCTF meetings, the language of some of the recommendations has been adjusted to improve clarity. The verbatim language, together with the voting record is included in <u>Appendix 3</u> for reference. Some recommendations are grouped together for clarity. Explanatory notes are provided below recommendations when necessary.

# **DCTF RECOMMENDATIONS- October 16-17, 2019**

#### The Dungeness Crab Account, Fish and Game Code §8276.5

Fish and Game Code §8276.5 mandates that an annual accounting of the Dungeness Crab Account be provided by CDFW. During the October 2019 DCTF meeting, CDFW provided an update of the accounting through the 2018-19 fiscal year. The DCTF provided recommendations for transparency and use of the Dungeness Crab Account.

**Recommendation 1:** In accordance with Fish and Game Code §8276.5, the DCTF recommends CDFW conduct a detailed audit of the Dungeness Crab Account. The DCTF recommends additional reporting information with more information about income (i.e., income from biannual tags, biannual tag permits, replacement tags, and fines) and expenses (i.e., additional detail on Licence and Revenue Branch, Law Enforcement Division, and Marine Region expenses and other overhead expenses). The detailed audit should also include annual income, expense, and balance for all years since inception of the commercial Dungeness Crab Trap Limit Program and the Dungeness Crab Account.

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Vote of all DCTF Members (ex officio Members abstained):

#### NOTES:

An accounting of the uses of the Dungeness Crab Account through the 2018-19 fiscal year was provided at the October 2019 DCTF meeting.<sup>10</sup> The DCTF continues to have questions as to the sources of revenue in the account (e.g., Is the revenue only based on biannual trap tag sales? Does it also include replacement tags and/or the biannual permit?) and requests clarity on where the funds paid as part of the commercial Dungeness Crab Trap Limit Program are deposited. Additionally, the DCTF continues to have questions about how funds are being used within all areas of CDFW. For example, commercial fishermen indicated they have not seen changes in enforcement activities since the inception of the program and are concerned the funds are being used to subsidize other enforcement needs outside the Commercial Dungeness Crab Trap Limit program. With a \$2.2M surplus following the 2018-19 fiscal year, the DCTF requires a detailed audit of the account to better assess whether the CDFW is collecting excess funds. If excess funds are being collected, the DCTF would like to explore opportunities to reduce the costs of the program to fishermen as

<sup>&</sup>lt;sup>10</sup> California Department of Fish and Wildlife. 2019. 2019 Dungeness Crab Fishery Updates. Presentation to the California Dungeness Crab Task Force. Santa Rosa, CA. October 2019. http://www.opc.ca.gov/webmaster/ftp/project\_pages/dctf/meeting-5/ CDFWData\_DCTF%20Meeting\_Oct262015-2.pdf

outlined in Fish and Game Code §8276.5, and/or recommend other uses for the excess funds collected to support the commercial Dungeness crab fishery (e.g., support litigation on behalf of the fleet).

**Recommendation 2:** Reiterating recommendation 3 from the December 20, 2017 report (<u>Appendix</u> <u>6</u>), the DCTF recommends amending Fish and Game code §8276.4 and §8276.5 to prioritize the allocation of \$150,000 dollars per year from the Dungeness Crab Account to support the administration and facilitation of the DCTF through 2029.

The DCTF recommends that the Legislature and the Administration (California Natural Resources Agency, Ocean Protection Council (OPC), CDFW) work together to ensure that Dungeness Crab Account funds are used to support a higher level of administration and facilitation support of the DCTF than is currently allocated within the 2019-2021 DCTF administration and facilitation contract, including, but not limited to, funding DCTF member/alternate travel, increasing the number of DCTF and Executive Committee meetings per year, and supporting emergency meetings, as needed.

The DCTF recommends expanding the spending authority of the Dungeness Crab Account to CDFW, as needed and available, to support priority needs identified by the DCTF including \$150,000/year for DCTF operations.

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Vote of all DCTF Members (ex officio Members abstained):

#### NOTES:

In the DCTF's January 2016 report (<u>Appendix 4</u>), the DCTF expressed support for reauthorizing and continuing the DCTF beyond 2019. In the DCTF's last report (<u>Appendix 6</u>), a recommendation was made to amend Fish and Game code §8276.4 to allocate \$150,000 per year from the Dungeness Crab Account (see Fish and Game code section §8276.5) to support the organization's activities. As of July 2019, CDFW entered into a two-year contract with a contractor to facilitate and administer the DCTF at a rate of \$75,000 per year. The contract stipulates that the contractor administer up to one DCTF meeting and up to three Executive Committee conference calls per year. The DCTF believes this is inadequate to allow the DCTF to adequately and efficiently address the evolving priorities of the industry (see January 2017: Recommendation 4, page 14 of this report and <u>Appendix 5</u>). The DCTF believes the request to use funds from the Dungeness Crab Account is reasonable considering an October 2019 presentation from CDFW indicating a \$2.2M surplus in the Dungeness Crab Account.<sup>11</sup> The DCTF appreciates that CDFW must use the Dungeness Crab Account to cover costs to administer and enforce the commercial Dungeness Crab Account as required by Fish and Game Code Section 8276.5(a) to ensure transparency of the account's use (see Recommendation 1, above).

#### **Domoic Acid and The Dungeness Crab Fishery**

<sup>&</sup>lt;sup>11</sup> California Department of Fish and Wildlife. 2019. 2019 Dungeness Crab Fishery Updates. Presentation to the California Dungeness Crab Task Force. Santa Rosa, CA. October 2019. http://www.opc.ca.gov/webmaster/\_media\_library/2009/04/DCTFUpdates-Oct2019Meeting-10142019.pdf

Since the 2015-16 commercial fishing season, elevated levels of domoic acid have threatened delays in the commercial California Dungeness season opener. The California Department of Public Health (CDPH), Office of Environmental Health Hazard Assessment (OEHHA), and CDFW are continuing to work collaboratively to ensure an orderly, timely openers that also consider public safety. At the October 2019 DCTF meeting, the agencies requested guidance from the DCTF related to the management of domoic acid in the Dungeness crab fishery.

**Recommendation 3:** The DCTF supports the concept of biotoxin management zones to create more understanding and predictability for the fleet in how the commercial Dungeness crab fishing season may open every year. The DCTF understands that CDPH, OEHHA, and CDFW (the agencies) will be working to develop a proposal for the biotoxin management zone areas. DCTF members will work with their ports to identify suggestions for zone lines to be considered by the agencies. The DCTF expects a follow up discussion with the agencies prior to the finalization of the biotoxin management plan zones.

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*Vote of all DCTF Members (nonvoting Members abstained):* 

#### NOTES:

The DCTF supports biotoxin management zones in concept as it provides more predictability to help fishermen better plan for the upcoming season based on their business model. Biotoxin management zones are a tool currently employed in other states to manage sampling and domoic acid delays. Biotoxin management zones are predefined areas that help improve the predictability of the boundaries within which delays and openers will occur. The size of each zone would need to be considered based on fishing effort, known domoic acid hot spots, number of sample sites available per area, buffer areas, etc.

The DCTF understands that the agencies will be working in the coming months to develop draft biotoxin management zones for the DCTF's consideration. DCTF Members will work within their ports to provide the agencies with guidance in the near-term and anticipates CDFW sharing the draft biotoxin management zones with the DCTF at their October 2020 meeting.

**Recommendation 4:** The DCTF supports CDPH, OEHHA, and CDFW (agencies) pursuing the authority to implement evisceration options in California through the appropriate legislative processes as an option that could be available to the industry in response to elevated domoic acid levels in Dungeness crab. The DCTF also recommends the California Legislature approve a bill(s) that would provide these legal authorities to the agencies.

Once California is in a place to begin implementing evisceration options, the DCTF recommends Hazard Analysis and Critical Control Points (HACCP) plans be developed in consultation with the industry. The DCTF recommends the evisceration option not be available to the industry unless there is a delay in fishing until or after February 1.

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*Vote of all DCTF Members (nonvoting Members abstained):* 

#### NOTES:

Since the 2015-16 season, the commercial Dungeness crab fishery has continued to experience hardship and loss of certain markets due to domoic acid season delays. Some members of the industry would like there to be opportunities available to fish in the event of domoic acid delays. That being said, the DCTF flagged that HACCP plans would only be available to a few processors that have operations that would qualify for such a plan. Evisceration options will be unavailable to those who serve the live markets, which are predominant in the Central Management Area (south of the Mendocino/Sonoma County line). The DCTF highlighted that there would be less than a handful of processors who would qualify for a HACCP plan and they all reside in ports in the Northern Management Area (CA/OR border south to Mendocino/Sonoma County line) which would create economic disparities for those who fish in the south. For that reason, the DCTF believes evisceration options should only be considered if the fishery remains delayed on/beyond February 1 due to domoic acid to allow fishermen a fishing season in light of this issue of whale entanglements.

#### Marine Life Entanglement in Dungeness Crab Fishing Gear

The ensuing recommendation is directly related to DCTF discussions about the efforts being made by the California Dungeness Crab Fishing Gear Working Group to address marine life entanglement in Dungeness crab fishing gear (<u>Appendix 1</u>).

**Recommendation 5:** The DCTF thanks the Dungeness Crab Fishing Gear Working Group for its continued efforts to support thriving whale and sea turtle populations along the West Coast together with a thriving and profitable Dungeness crab fishery.

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Vote of all DCTF Members (nonvoting Members abstained):

#### NOTES:

The DCTF agrees that the issue of whale entanglements in the Dungeness crab fishery is an important priority for the fleet to address and supports the efforts of the California Dungeness Crab Fishing Gear Working Group (Working Group).<sup>12</sup> Marine life entanglements in California Dungeness crab fishing gear has been identified as a high priority issue by the industry especially in the face of a settlement agreement between the Center for Biological Diversity and CDFW (<u>Appendix 7</u>). Marine life entanglements create a risk for whales and sea turtles while also threatening the stability of the fishery and coastal fishing communities, both of which the public values. DCTF members support the work of the Working Group and see value in having fishermen in the group helping to develop strategies to address this issue.

#### Legislative and Regulatory Needs

During the October 2019 DCTF meeting, the DCTF reviewed relevant active legislation and discussed recommendations related to potential regulatory and legislative needs.

<sup>&</sup>lt;sup>12</sup> The Working Group was established in 2015 to explore ways to reduce the risk of entanglements with Dungeness crab fishing gear. The Working Group is composed of commercial fishermen (including two DCTF Members), a recreational fisherman, a CPFV fisherman, environmental organizations, a whale disentangler, a processor, and state and federal agencies. For information about the Working Group is available online: http://www.opc.ca.gov/whale-entanglement-working-group/

**Recommendation 6:** The DCTF recommends amending Fish and Game code §8283 to change the Central Management Area's commercial fishing presoak period from 18 hours to 64 hours.

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#### NOTES:

Fish and Game code §8283 mandates an 18-hour presoak in the Central Management area. Many commercial fishermen have stated that the 18-hour presoak in the Central Management Area creates safety concerns for the fleet, especially during domoic acid delays. The DCTF last discussed this topic during the October 2017 meeting (Appendix 8) where it was not approved by the DCTF primarily because some individuals saw the issue as a business decision for traveling vessels and a negotiation tactic to require crab quality testing in the Central Management Area (see Recommendation 8). During the DCTF's October 2019 meeting, they revisited the Central Management Area presoak and generally agreed that safety in the commercial Dungeness fishery should be paramount to all other issues. The precedent for a 64-hour presoak in California has already been set in the Northern Management Area and would not be unfounded. The DCTF acknowledges that managers would like to minimize the length of time fishing gear is in the ocean to reduce the risk of marine life entanglements. However, the DCTF believes that the safety of fishermen should be the highest priority for the state of California.

**Recommendation 7:** If the Central Management Area's commercial fishing presoak period changes from 18 hours to 64 hours, the DCTF supports also modifying the recreational fishing season in the Central Management Area to allow a 12-hour presoak period.

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Vote of all DCTF Members (nonvoting Members abstained):

#### NOTES:

The DCTF does not want to hinder the recreational fishing season by extending the Central Management Area presoak period for the commercial fishery. To allow ample opportunity for the recreational fishermen to fish prior to the commercial opener, the DCTF believes it would be fair for the Fish and Game Commission to update the Title 14 regulations to allow a 12-hour recreational presoak period should the Legislature modify the commercial presoak period in the Central Management Area.

#### Tri-State and Preseason Quality Testing

At the May 2019 Tri-State Dungeness Crab Committee Meeting<sup>13</sup>, the California representatives requested the opportunity to discuss new concepts within the DCTF before reaching an agreement at the Tri-State level. The DCTF provided recommendations for the California representatives to share with the Tri-State Dungeness Crab Committee.

<sup>&</sup>lt;sup>13</sup> Pacific States Marine Fisheries Commission. 2019. Coastal Dungeness Crab Tri-State Committee Meeting, May 13 and 14, 2019; <u>http://www.psmfc.org/crab/2018-2019%20Files/TriState2019\_SummaryDecisions\_Final.pdf</u>

**Recommendation 8:** The DCTF supports the Tri-State Dungeness Crab Committee's suggestion to adjust California's market quality pick rate from 25% (rounded) to 24% (no rounding).

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#### NOTES:

In 1996, the Tri-State Dungeness Crab Agreement was established through an MOU between the Pacific States Marine Fisheries Commission (PSMFC) and Washington, Oregon, and California to facilitate communication and cooperation between the states in managing their Dungeness crab fisheries (see <u>Appendix 9</u> for MOU). Most notably, this agreement established preseason crab quality testing from the Washington-British Columbia border to the Mendocino/Sonoma County Line in California. Through the Tri-State Coastal Dungeness Crab Committee, the three states have discussed and aligned management of Dungeness crab fisheries in their respective states including coordinating fair start clauses<sup>14</sup> and season openers to the extent possible.

The preseason crab quality testing protocols, as part of the Tri-State Dungeness Crab Agreement, currently dictates that California's Northern Management Area can not open until the meat quality reaches a 25% pick rate, rounded, for each test area. While the DCTF believes it is important to have the best product available on the market, reducing the pick rate overall by 0.5% may allow the season to open sooner, thereby reducing the risk of marine life entanglements<sup>15</sup> without compromising the quality of the product. The DCTF also discussed modifying crab quality testing protocols further to average all northern port test sites and allow for projections by the third test. While the discussion did not result in a recommendation, the DCTF identified that the concept needed further discussion and could be revisited at the next Tri-State Dungeness Crab Committee discussion.

# **NOTABLE MENTION**

#### DCTF Discussion of Active Legislation - AB 1472

Although the DCTF does not usually share votes that do not meet consensus standards as outlined in their Charter (<u>Appendix 2</u>), the DCTF wanted to highlight the outcome of the discussion and subsequent failed vote on AB 1472 - California Dungeness Crab Commission (<u>Appendix 11</u>).

There was not sufficient support of AB 1472 by DCTF Members generally. As is evidenced by the votes below, there is also a great deal of divisiveness around the topic. While some Members saw value in a Dungeness Crab Commission becoming established through the California Department of Food and Agriculture to support the marketing needs of the industry, a number of DCTF Members abstained from voting because they believed a more thorough discussion was needed within each port before they could vote on support for the bill. A number of DCTF Members clearly expressed that they do not support the concept of a marking association under AB1472.

<sup>&</sup>lt;sup>14</sup> Fair start provisions mandate that anyone fishing in the Central Management area must wait 30 days after the delayed northern opener (i.e. Northern Management area, Oregon, or Washington) to fish in those northern waters.
<sup>15</sup> The risk of marine life entanglements increases in the spring months. The sooner the fishery opens, the sooner a

majority of commercial fishing gear is removed from the ocean thereby reducing the risk of whale entanglements.

**FAILED:** The DCTF supports to Assembly Bill (AB) 1472 (session 2019-2020) and sees value in establishing a Dungeness crab marketing commission.

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Vote of all DCTF Members (nonvoting Members abstained):

This bill was introduced without consulting the DCTF in the initial stages of the bill's development, which led many DCTF Members to express concern with the merits of the process in which the bill was created. Due to this, many DCTF Members generally agreed that any legislation affecting the Dungeness crab industry should be shared/reviewed by the DCTF prior introduction, when possible.

# **DCTF NEXT STEPS**

As dictated by Fish and Game code §8276.4, the DCTF will deliver a report no later than January 15, 2022, and every third year thereafter. In an effort to ensure that recommendations are shared in a timely fashion and the appropriate entities are able to act on those recommendations while they are relevant, the DCTF anticipates sharing a report following each annual DCTF meeting. The DCTF looks forward to being responsive to the needs of the Dungeness crab industry and fisheries managers to discuss priority issues including those outlined in this report, and other priorities that may arise.



# California Department of Fish & Wildlife Legislative Report

February 2020

(as of February 10, 2020)

# <u>AB 352</u>

(Garcia, Eduardo D) Wildfire Prevention, Safe Drinking Water, Drought Preparation, and Flood Protection Bond Act of 2020.

Introduced: 2/4/2019

Last Amend: 8/14/2019

**Status:** 8/14/2019-From committee chair, with author's amendments: Amend, and rerefer to committee. Read second time, amended, and re-referred to Com. on EQ. **Location:** 8/14/2019-S. E.Q.

**Summary:** Would enact the Wildfire Prevention, Safe Drinking Water, Drought Preparation, and Flood Protection Bond Act of 2020, which, if approved by the voters, would authorize the issuance of bonds in the amount of \$3,920,000,000 pursuant to the State General Obligation Bond Law to finance a wildlife prevention, safe drinking water, drought preparation, and flood protection program. The bill would provide for the submission of these provisions to the voters at the November 3, 2020, statewide general election. The bill would provide that its provisions are severable.

# <u>AB 559</u>

(Arambula D) Millerton Lake State Recreation Area: acquisition of land. Introduced: 2/13/2019

**Status:** 1/28/2020-In Senate. Read first time. To Com. on RLS. for assignment. **Location:** 1/28/2020-S. RLS.

**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.

# <u>AB 995</u>

(Garcia, Cristina D) Hazardous waste.

Introduced: 2/21/2019

Last Amend: 9/6/2019

**Status:** 9/9/2019-Withdrawn from committee. Re-referred to Com. on RLS. **Location:** 9/9/2019-S. RLS.

**Summary:** This bill would create the Board of Environmental Safety in the California Environmental Protection Agency. The bill would provide requirements for the membership of the board and would require the board to conduct no less than 6 public meetings per year. The bill would provide for the duties of the board, which would include, among others, reviewing specified policies, processes, and programs within the hazardous waste control laws; proposing statutory, regulatory, and policy changes; and hearing and deciding appeals of hazardous waste facility permit decisions.

# <u>AB 1190</u>

(Irwin D) Unmanned aircraft: state and local regulation: limitations.

Introduced: 2/21/2019

Last Amend: 5/1/2019

Status: 6/19/2019-Referred to Com. on RLS.

Location: 5/24/2019-S. RLS.

**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 also authorize a local agency to adopt regulations to enforce FAA regulations regarding the operation of unmanned aircraft systems and would authorize local agencies to regulate the operation of unmanned aircraft and unmanned aircraft systems within their jurisdictions, as specified. The bill would also authorize a local agency to require an unmanned aircraft operator to provide proof of federal, state, or local registration to licensing or enforcement officials.

# <u>AB 1305</u>

(Obernolte R) Junior hunting licenses: eligibility: age requirement. Introduced: 2/22/2019

Last Amend: 6/18/2019

**Status:** 6/19/2019-Withdrawn from committee. Re-referred to Com. on RLS. **Location:** 6/19/2019-S. RLS.

**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 provides that, until July 1, 2020, a person is eligible for a junior hunting license if the person is under 18 years of age on July 1 of the licensing year. Existing law provides that, on and after July 1, 2020, a person is eligible for a junior hunting license if the person is under 16 years of age on July 1 of the licensing year. Current law makes conforming changes to certain other types of hunting licenses as a result of the age change for a junior hunting license. This bill would extend the eligibility for a junior hunting license to a person who is under 18 years of age on July 1 of the licensing year until July 1, 2021.

# <u>AB 1561</u>

(Rubio, Blanca D) Endangered wildlife: crocodiles and alligators.

Introduced: 2/22/2019

Last Amend: 9/6/2019

**Status:** 9/9/2019-Read second time. Ordered to third reading. Re-referred to Com. on RLS. pursuant to Senate Rule 29.10(c).

Location: 9/9/2019-S. RLS.

**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, 2021. This bill contains other related provisions.

# <u>AB 1907</u>

(Santiago D) California Environmental Quality Act: emergency shelters: supportive and affordable housing: exemption.

#### Introduced: 1/8/2020

Status: 1/30/2020-Referred to Coms. on NAT. RES. and H. & C.D. Location: 1/30/2020-A. NAT. RES.

**Summary:** Would, until January 1, 2029, exempt from environmental review under CEQA certain activities approved by or carried out by a public agency in furtherance of providing emergency shelters, supportive housing, or affordable housing, as each is defined. The bill would require a lead agency that determines to carry out or approve an activity that is within this CEQA exemption to file a notice of exemption, as specified.

#### <u>AB 1934</u>

# (Voepel R) Planning and zoning: affordable housing: streamlined, ministerial approval process.

Introduced: 1/15/2020

Status: 1/23/2020-Referred to Coms. on H. & C.D. and L. GOV.

Location: 1/23/2020-A. H. & C.D.

**Summary:** Current law, until January 1, 2026, authorizes a development proponent to submit an application for a multifamily housing development, which satisfies specified objective planning standards, that is subject to a streamlined, ministerial approval process, as provided, and not subject to a conditional use permit. Current law requires a local government to notify the development proponent in writing if the local government determines that the development conflicts with any of those objective standards by a specified time; otherwise, the development approves a project pursuant to that process, that approval will not expire until a specified period of time depending on the nature of the development. This bill would, notwithstanding those provisions, authorize a development proponent to submit an application for a development to be subject to a streamlined, ministerial approval process provided that development meet specified objective planning standards, including that the development provide housing for persons and families of low or moderate income

#### <u>AB 1948</u>

#### (Bonta D) Taxation: cannabis.

Introduced: 1/17/2020

Status: 1/30/2020-Referred to Coms. on REV. & TAX. and B. & P.

Location: 1/30/2020-A. REV. & TAX

**Summary:** AUMA requires the Legislative Analyst's Office to submit a report to the Legislature by January 1, 2020, with recommendations for adjustments to the tax rate to achieve the goals of undercutting illicit market prices and discouraging use by persons younger than 21 years of age while ensuring sufficient revenues are generated for specified programs. AUMA authorizes the Legislature to amend its provisions with a 2/3 vote of both houses to further its purposes and intent. This bill would reduce that excise tax rate to 11% on and after the operative date of this bill until July 1, 2023, at which time the excise tax rate would revert back to 15%. The bill would suspend the imposition of the cultivation tax on and after the operative date of this bill until July 1, 2023. The bill would require the bureau, the Department of Food and Agriculture, and the California Department of Tax and Fee Administration to provide the Legislature with reports measuring the success of this bill, as specified.

# <u>AB 1949</u>

# (Boerner Horvath D) Fisheries: California Ocean Resources Enhancement and Hatchery Program.

Introduced: 1/17/2020

Status: 2/6/2020-Referred to Com. on W., P., & W.

Location: 2/6/2020-A. W.,P. & W.

**Summary:** Would expand the purpose of the California Ocean Resources Enhancement and Hatchery to encompass any marine fish species important to sport and commercial fishing. The bill would revise provisions relating to the advisory panel by, among other things, specifying which members are voting members, by adding a voting member representing the public or nongovernmental organization interests, or both, by providing for an alternate member to be designated for each voting member, and by establishing 3-year terms for each member and alternate member. The bill would require all members and alternate members to be appointed by the director after soliciting nominations for members and evaluating certain criteria. Except for the advisory panel's advisory function, the bill would eliminate the advisory panel's other functions, including the power to approve financing of any part of the program.

# <u>AB 1951</u>

#### (Salas D) State flag: retirement.

Introduced: 1/17/2020

**Status:** 1/18/2020-From printer. May be heard in committee February 17.

Location: 1/17/2020-A. PRINT

**Summary:** Current law designates the Bear Flag as the State Flag of California and specifies the design of the flag. This bill would state the intent of the Legislature that when the flag is in such condition that it is no longer a fitting emblem for display, it should be destroyed in a dignified way, preferably by burning.

#### <u>AB 1958</u>

# (Cooper D) State Plan of Flood Control: facilities.

Introduced: 1/17/2020

Status: 2/6/2020-Referred to Coms. on W., P., & W. and PUB. S.

Location: 2/6/2020-A. W.,P. & W.

**Summary:** Would prohibit a person from concealing, defacing, destroying, modifying, cutting, altering, or physically or visually obstructing any levee along a river or bypass at any of those specified places, any levee forming part of any flood control plan, or any other facility of the State Plan of Flood Control, including, but not limited to, any and all associated rights of way, without permission of the board. By expanding the behavior that would be punishable as a misdemeanor, the bill would impose a state-mandated local program.

#### <u>AB 2028</u>

# (Aguiar-Curry D) State agencies: meetings.

Introduced: 1/30/2020

Status: 1/31/2020-From printer. May be heard in committee March 1.

Location: 1/30/2020-A. PRINT

**Summary:** The Bagley-Keene Open Meeting Act requires that all meetings of a state body, as defined, be open and public, and that all persons be permitted to attend any meeting of a state body, except as otherwise provided in that act. Current law requires

the state body to provide notice of its meeting, including specified information and a specific agenda of the meeting, as provided, to any person who requests that notice in writing and to make that notice available on the internet at least 10 days in advance of the meeting. This bill would, except for closed sessions, require that this notice include all writings or materials provided for the noticed meeting to a member of the state body by staff of a state agency, board, or commission, or another member of the state body, that are in connection with a matter subject to discussion or consideration at the meeting.

# <u>AB 2076</u>

# (<u>Bigelow</u> R) Public lands: Department of Parks and Recreation: wildfire management plan: fire hazard severity zones.

Introduced: 2/5/2020

Status: 2/6/2020-From printer. May be heard in committee March 7.

Location: 2/5/2020-A. PRINT

**Summary:** Would require the Director of Parks and Recreation to develop, in specified phases, and implement a wildfire management plan for all property under the jurisdiction of the Department of Parks and Recreation that is located within a high or a very high fire hazard severity zone, as provided. The bill would require the wildfire management plan to outline the department's fire prevention goals and future projects for prescribed fire, defensible space, fire resilient restoration projects, and the fire hardening of the department's structures, among other things.

#### AB 2093

(Gloria D) Public records: writing transmitted by electronic mail: retention. Introduced: 2/5/2020

**Status:** 2/6/2020-From printer. May be heard in committee March 7. **Location:** 2/5/2020-A. PRINT

Summary: Would unless a longer rete

**Summary:** Would, unless a longer retention period is required by statute or regulation, or established by the Secretary of State pursuant to the State Records Management Act, require a public agency, for purposes of the California Public Records Act, to retain and preserve for at least 2 years every public record, as defined, that is transmitted by electronic mail.

# <u>AB 2106</u>

(Aguiar-Curry D) Wildlife habitat: Nesting Bird Habitat Incentive Program: upland game bird hunting validation: state duck hunting validation.

Introduced: 2/6/2020

**Status:** 2/7/2020-From printer. May be heard in committee March 8. **Location:** 2/6/2020-A. PRINT

**Summary:** Current law makes it unlawful to take upland game birds without first procuring a hunting license and an upland game bird hunting validation. Under existing law, moneys derived from upland game bird hunting validations are required to be deposited in the Upland Game Bird Account in the Fish and Game Preservation Fund. Current law requires a person to procure a hunting license and a state duck hunting validation to take migratory birds, as specified. Under current law, moneys derived from state duck hunting validations are required to be deposited in the State Duck Stamp Account in the Fish and Game Preservation Fund. This bill would raise by \$5 the upland game bird hunting validation fees, as specified,

with that \$5 to be deposited, and available upon appropriation to the department for the Nesting Bird Habitat Incentive Program, in the Nesting Bird Habitat Incentive Subaccount, which the bill would create in the California Waterfowl Habitat Preservation Account.

# <u>SB 45</u>

# (<u>Allen</u> D) Wildfire Prevention, Safe Drinking Water, Drought Preparation, and Flood Protection Bond Act of 2020.

Introduced: 12/3/2018

Last Amend: 1/23/2020

Status: 1/30/2020-In Assembly. Read first time. Held at Desk.

Location: 1/29/2020-A. DESK

**Summary:** Would enact the Wildfire Prevention, Safe Drinking Water, Drought Preparation, and Flood Protection Bond Act of 2020, which, if approved by the voters, would authorize the issuance of bonds in the amount of \$5,510,000,000 pursuant to the State General Obligation Bond Law to finance projects for a wildfire prevention, safe drinking water, drought preparation, and flood protection program.

# <u>SB 587</u>

# (Monning D) California Sea Otter Voluntary Tax Contribution Fund.

Introduced: 2/22/2019

Last Amend: 1/6/2020

**Status:** 1/23/2020-Read third time. Passed. (Ayes 37. Noes 0.) Ordered to the Assembly. In Assembly. Read first time. Held at Desk.

Location: 1/23/2020-A. DESK

**Summary:** Current law, until January 1, 2021, establishes the California Sea Otter Fund. Current law requires any new or extended voluntary tax contribution to include the words "voluntary tax contribution" in the name of the fund, to require the administrative agency to include specified information about the fund on its internet website, and to continuously appropriate voluntary tax contributions made to the fund to the administrative agency. Current law requires the minimum contribution amount to a new or extended voluntary tax contribution fund for the second calendar year after the first appearance of the fund on the tax refund form, and each calendar year thereafter, to be \$250,000. This bill would extend the operation of the above-described provisions relating to the California Sea Otter Fund to January 1, 2028, or until an earlier date if the Franchise Tax Board determines that the amount of contributions estimated to be received during a calendar year will not equal or exceed \$250,000.

# <u>SB 914</u>

# (Portantino D) Firearms: hunting exemptions.

Introduced: 2/3/2020

Status: 2/4/2020-From printer. May be acted upon on or after March 5.

Location: 2/3/2020-S. RLS.

**Summary:** Current law prohibits the purchase or receipt of a firearm by, or the sale or transfer of a firearm to, any person who does not have a firearm safety certificate, as specified. Current law also prohibits the sale or transfer of a firearm by a licensed firearm dealer to a person under 21 years of age. Current law exempts from these provisions the sale, transfer, purchase, or receipt of a firearm, other than a handgun, to or by a person without a firearm safety certificate, but in possession of a valid,
unexpired hunting license, as specified. Current law also exempts the sale or transfer of a firearm, other than a handgun or semiautomatic centerfire rifle, to a person 18 years of age or older who possesses a valid, unexpired hunting license, as specified. This bill would, for purposes of these provisions, define a valid and unexpired hunting license.

For more information call:

Clark Blanchard, CDFW Acting Deputy Director at (916) 651-7824 Julie Oltmann, CDFW Legislative Representative at (916) 653-9772 Kristin Goree, CDFW Legislative Coordinator at (916) 653-4183

You can also find legislative information on the web at <u>http://leginfo.legislature.ca.gov/</u> and follow the prompts from the 'bill information' link.



2019 DEC -2 PH 12: 30

#### THE ABALONE FARM, INC.

805/995-2495

FAX # 805/995-0236

LIC # 0014

DEALER # 6862

November 26, 2019

Elizabeth Pope Fish and Game Commission 1416 Ninth St., Suite 1320 Sacramento, CA 95814

Dear Ms. Pope,

I am writing to you to give notice that The Abalone Farm, Inc. would like to terminate our leases on kelp beds 204 and 207. The Abalone Farm will be ceasing commercial operations at the end of this year and will no longer have a need for a reliable source of kelp.

Thank you for your assistance in this manner. The kelp leases were an important part of our business these past decades, and we have always enjoyed a good working relationship with the Commission.

Best regards Ray Fields

President, The Abalone Farm, Inc.

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State of California – Natural Resources Agency DEPARTMENT OF FISH AND WILDLIFE 3637 Westwind Blvd., Santa Rosa, CA 95403-1067 (707) 576-2882 Fax (707) 576-7132 www.wildlife.ca.gov



#### 2020 Salmon Information Meeting

The California Department of Fish and Wildlife's Annual Salmon Information Meeting will be held on February 27, 2020 in Santa Rosa, California.

At the meeting, agency staff will present information on 2019 ocean harvest, river harvest, and river returns for California salmon stocks and the outlook for California salmon fisheries in the upcoming 2020 season. The public is encouraged to provide comments on potential fishing regulations for California ocean salmon fisheries in 2020. A panel comprised of fishery managers, scientists and industry representatives will be assembled to address questions and collect public input that will be used in developing a range of season alternatives for California salmon fisheries at the March 3-9, 2020 Pacific Fishery Management Council meeting in Rohnert Park, California. Final season regulations will be adopted at the April 4-10, 2020 Pacific Fishery Management Council meeting in Vancouver, Washington.

- Where: Sonoma County Water Agency 404 Aviation Blvd. Santa Rosa, California 95403
- Date: Thursday February 27, 2020
- Time: 10:00 a.m. to 4:00 p.m.

For more information on the meeting, please contact California Department of Fish and Wildlife Environmental Scientist Grace Ghrist at (707) 576-2375 or visit the Department's Ocean Salmon web page at <a href="http://www.wildlife.ca.gov/oceansalmon">www.wildlife.ca.gov/oceansalmon</a>.

## Marine Life Management Act Master Plan Implementation

Craig Shuman, Regional Manager Marine Region California Department of Fish and Wildlife



Fish and Game Commission Meeting Sacramento February 21, 2020

# **Overview of Prioritization and Scaling Process**

Fisheries Set #1 28 Finfish Fisheries (21 Species) 4 Invertebrate Fisheries (3 Species)

### **Prioritization**

Productivity & Susceptibility Analysis **Ecological** Risk Assessment (Modified)



Updated List of Priority Fisheries

Consideration of Emerging or Emergency Issues

Scaling

Anticipated Degree of Management Change Assessment of Fishery Complexity

CALIFORNIA				
What Scale of Management is Appropriate?				
Enhanced Status Report		ESR &	ESR & ESR & → Complex	
(ESR)		Rulemaking	Basic FMP FMP	
ESR Spotfin Croaker* Yellowfin Croaker* Yellowtail* Surf Smelt*	ESR & Data/Scoping Barred Sand Bass Kelp Bass Barred Surfperch California Barracuda Bay Shrimp Pacific Angel Shark	<b>ESR &amp; Rulemaking</b> Grunion** Kelp**	ESR & Basic/Complex FMP California Halibut Red Abalone***	
<ul> <li>* Species not included in priorit</li> <li>** Species not included in priorit</li> </ul>	Brown Smoothhound Shark ization process, but identified as need ization process, but identified as need	ding an ESR ding an ESR and rulemaking in acc	cordance with criteria listed in the	

MLMA Master Plan, Chapter 2, regarding emerging issues

\*\*\* FMP currently being developed



# Enhanced Status Reports

#### www.wildlife.ca.gov/Regions/Marine/Species



## Thank You

Questions: Debbie Aseltine-Neilson Senior Environmental Scientist Specialist California Department of Fish and Wildlife Debbie.Aseltine-Neilson@wildlife.ca.gov

#### Marine Life Management Act Master Plan: Implementation Work Plan

February 7, 2020

#### Background

The Marine Life Management Act Master Plan (2018 Master Plan) was adopted by the Fish and Game Commission (FGC) in June 2018. The 2018 Master Plan, which updates the original 2001 Master Plan, provides guidance and a toolbox for implementing the Marine Life Management Act (MLMA) goals and objectives. To help ensure that the 2018 Master Plan is implemented effectively, it specifies the development of an Implementation Work Plan (Work Plan).

#### **Structure and Content**

To aid in the successful implementation of the 2018 Master Plan, the Work Plan incorporates the following two characteristics:

- 1. The Work Plan must clearly capture the range of activities that are required to implement MLMA-based management over the next several years. These include fishery prioritization and scaling components from the 2018 Master Plan as well as routine ongoing activities and new statutory mandates.
- 2. The Work Plan must be adaptable to reflect change as specific tasks reach completion and others are initiated. In many cases, the results from completed tasks will inform the development of new tasks. For instance, the prioritization and scaling tasks within the MLMA-based management "Framework" will inform the decision (and resulting tasks) regarding which species currently need more focused management.

The Work Plan incorporates these two characteristics through nine key elements. The tasks listed under these elements within the Work Plan table below reflect current or soon-to-be implemented work. Some completed tasks are listed to provide context for current work; other completed tasks are listed in Appendix A. Planned next steps, those that are expected to be addressed at within the next several years, are provided in Appendix B.

Stakeholder engagement and peer review, as described in the 2018 Master Plan, are crucial to the successful implementation of the MLMA across most of the elements listed below. A variety of partners assist the Department with the implementation of these tasks including: members of the fishing industry; commercial and recreational fishing associations; academics; federal, state and local agencies; and non-government organizations.

#### **Plan Updates**

This is an update to the Work Plan provided to the FGC at their June 2019 meeting. Verbal updates of the MLMA Master Plan implementation will be provided to the MRC and, as needed or requested, to the FGC Tribal Committee and FGC at their scheduled 2020 meetings.

#### Work Plan

Time Frame: Completed, Annual, Ongoing, EC (Estimated Completion, Month and Year), In Progress (no estimated completion date), TBD (To Be Determined), or specifically described

#### I. MLMA Framework - Prioritization

Торіс	Tasks	Time Frame
Fisheries Set #1: Key finfish plus Bay Shrimp,	Present prioritized list to FGC	Completed - FGC
CA Spiny Lobster, and Market Squid		Dec 2019
Fisheries Set #2: Remaining key invertebrate	Conduct Bycatch ERA and Habitat ERA; conduct	In progress
fisheries	Target ERA and combine with PSA; combine	
	Bycatch, Habitat, and PSA + Target results	
Fisheries Set #2	Present prioritized list to FGC	TBD

#### II. MLMA Framework - Scaling

Торіс	Tasks	Time Frame
Prioritized Fisheries (Set #1)	Conduct evaluation (degree of management change needed; fishery complexity) to determine appropriate management scale; as possible, include socioeconomic and climate considerations (See Appendix C)	Completed Feb 2020
Prioritized Fisheries (Set #2)	Conduct evaluation (degree of management change needed; fishery complexity) to determine appropriate management scale; as possible, include socioeconomic and climate considerations	TBD

#### III. Scaled Fishery Management: Document Development

Торіс	Tasks	Time Frame
Enhanced Status Reports (ESRs)	Develop 30 ESRs for 33 species	Completed
ESRs	Develop ESRs for remaining 5 species (see	In progress
	Section IV and V for more information on CA	
	Halibut, Pacific Herring, and Bay Shrimp)	
All ESRs	Update completed ESRs with 2019 landings and	Dec 2020
	catch, research and monitoring results, and	
	regulation changes	
New ESRs	Develop 4 additional ESRs (Spotfin Croaker,	TBD
	Yellowfin Croaker, Yellowtail, and Surf Smelt)	
Fishery Management Plans (FMPs)	Complete Red Abalone FMP	EC Jan 2021
FMPs	Conduct a management strategy integration	EC Apr 2020
	process for Red Abalone to determine the suite	
	of indicators that provide the best management	
	strategies for reopening a fishery and for	
	managing an open fishery	

#### IV. Scaled Fishery Management: Key Actions for Priority Species without FMP<sup>a</sup>

Торіс	Tasks	Time Frame
CA Halibut	Develop CA Halibut stock assessment	EC Jun 2020
CA Halibut	Conduct formal peer view of CA Halibut stock	EC Jul 2020
	assessment	
CA Halibut	Conduct outreach meetings	EC Jul 2020
CA Halibut	Complete ESR	EC Dec 2020
CA Halibut	Evaluate bycatch in commercial fishery	TBD
CA Halibut	Explore development of FMP	TBD
CA Halibut	Explore incorporation of Management Strategy	TBD
	Evaluation (MSE) Data Limited Methods toolkit	
	(toolkit) results into management	
Grunion	Develop ESR	EC Apr 2020

Торіс	Tasks	Time Frame
Grunion	Develop regulation package for recreational fishery	EC Feb 2021
Kelp (Giant and Bull Kelp)	Develop ESR	EC Apr 2021
Kelp and Marine Algae	Commercial kelp and marine algae regulatory overhaul	Phase II EC Aug 2020
Kelp	Implement a statewide Kelp Management Plan	EC Apr 2022
Kelp	Develop a suite of priority projects (Statewide Kelp Restoration Toolkit) for kelp recovery and restoration	EC Apr 2022
Barred Sand Bass	Develop stock assessment	TBD
Barred Sand Bass	Evaluate immediate management needs	TBD
Barred Sand Bass	Explore incorporation of MSE toolkit results into management	TBD
Kelp Bass	Develop stock assessment	TBD
Kelp Bass	Explore incorporation of MSE toolkit results into management	TBD
Barred Surfperch	Conduct MSE using toolkit	TBD
Barred Surfperch	Identify most accurate ageing techniques using an age validation analysis	EC Dec 2020
Barred Surfperch	Conduct a latitudinal analysis of fecundity and parturition timing	EC Jun 2021
CA Barracuda	Conduct MSE using toolkit	TBD
CA Barracuda	Evaluate bycatch in commercial fishery	TBD
Bay Shrimp	Complete ESR	EC Dec 2020
Bay Shrimp	Evaluate bycatch in commercial fishery	TBD
Pacific Angel Shark	Evaluate bycatch in commercial fishery	TBD
Brown Smoothhound Shark	Monitor stock status as outlined in the ESR	Ongoing

<sup>a</sup> Information on how these species fit within Scaled Fishery Management is provided in Appendix D.

Торіс	Tasks	Time Frame
White Seabass	Complete maturity study	EC Feb 2021
White Seabass	Evaluate bycatch in commercial fishery	TBD
Pacific Herring	Implement FMP	Effective Mar 2020
Pacific Herring	Complete ESR	EC Dec 2020
Pacific Herring	Herring Eggs on Kelp Rulemaking	EC June 2020
CA Sheephead	Evaluate bycatch in commercial fishery	TBD
Market Squid	Reconvene Fishery Advisory Committee	TBD
Market Squid	Evaluate need for short and long-term regulatory changes	TBD

#### VI. Managing Fisheries

Торіс	Tasks	Time Frame
Monitoring/Research	Long-term fishery-dependent and -independent	Ongoing
	data collection	
Monitoring/Research	Collaborative study investigating climate change	EC 2020
	impacts on the sustainability of CA Spiny Lobster,	
	Market Squid, and Pacific Sardine within the CA	
	Current System	
Monitoring/Research	Socioeconomics of recreational fishery including	TBD
	target species choices	
Data Analysis and Stock Assessments	Conduct Management Strategy Evaluation (MSE)	EC Jun 2020
	through the Data-Limited Methods (DLM) Toolkit	
	on eight state-managed species/species groups	
	(Barred Sand Bass, CA Halibut, Kelp Bass,	
	Redtail Surfperch, CA Spiny Lobster, Red Sea	
	Urchin, Rock Crab [3 species], and Warty Sea	
	Cucumber)	

Торіс	Tasks	Time Frame
Review Analytical Results and Develop	White Seabass, Pacific Herring, and CA Spiny	Annual
Management Options	Lobster status as determined through process	
	outlined in FMPs	
Review Analytical Results and Develop	Market Squid status as determined through egg	Ongoing
Management Options	escapement evaluation	
Review Analytical Results and Develop	Cabezon, Greenlings, CA Sheephead, Kellet's	Annual
Management Options	Whelk and Sheep Crab landings against TACs	
Review Analytical Results and Develop	Northern CA Red Abalone status	Ongoing
Management Options		
Review Analytical Results and Develop	Dungeness Crab meat quality evaluation	Annual
Management Options		
Review Analytical Results and Develop	Dungeness Crab, Rock Crab, Razor Clam, and	Ongoing
Management Options	CA Spiny Lobster domoic acid level evaluation	
Identification of Management Measures and	Recreational crab trap bycatch of whales and	Proposed
Development of Regulations	turtles	adoption Nov
		2020
Identification of Management Measures and	Hydraulic pump use for taking clams	TBD
Development of Regulations		
Identification of Management Measures and	Purple Urchin emergency rulemaking	Proposed
Development of Regulations		Adoption Feb
-		2020

#### VII. Outreach

Торіс	Tasks	Time Frame
ESR Accessibility	Upload 30 final ESRs onto Marine Region website	EC Feb 2020
	until imported into CA Fisheries Portal	
CA Fisheries Portal Phase 2	Build website for CA Fisheries Portal and add	EC July 2020
	ESR text	
Marine Region Website	Renovate website	In progress
FGC Updates	Provide regular updates at FGC Marine Resource	Ongoing
	Committee and Tribal Committee meetings	

Торіс	Tasks	Time Frame
Partnerships and Stakeholder Engagement	Participate on formal and informal fishery task	Ongoing
	forces and workgroups	
Partnerships and Stakeholder Engagement	Outreach to fishermen through port discussions	Ongoing
Partnerships and Stakeholder Engagement	Build partnerships to support implementation	Ongoing

#### VIII. Implementing New Programs

Торіс	Tasks	Time Frame
California Fisheries Innovation Act of 2018 (AB	Implement Experimental Fishing Permit Program	EC Dec 2020
1573)		
SB 1309	Implement Risk Assessment and Mitigation	EC Nov 2020
	Program (RAMP)	
SB 1309	Implement Gear Retrieval Program for	Completed Sept
	Dungeness Crab Traps	2019
SB 1309	Implement Standardized Gear Marking Program	EC Apr 2020
Experimental Fisheries	Initiate Experimental Box Crab fishery	Started April 2019
Experimental Fisheries	Collect Box Crab catch information	EC for first year
		Mar 2020
Fisheries Disaster Relief Programs	Implement as required	Ongoing

#### IX. Improving MLMA Fisheries (Ecological, Social, and Management Systems)

Торіс	Tasks	Time Frame
Data Modernization and Review	Review and evaluate logbooks and use of E-logs	In progress
New Data Collection Methods	Evaluate use of electronic monitoring for vessels participating in Box Crab experimental fishing program	EC Mar 2022
New Fishery Management Protocols and Tools	Develop criteria and protocols to evaluate and respond to potential risk of marine life entanglement (SB 1309)	Ongoing
FMP Planning	Lessons learned evaluation for FMP planning	In progress

Торіс	Tasks	Time Frame
Restricted Access	Provide information for review of restricted access	EC Dec 2020
	Programs for Market Squid, Pink Shrimp, Spot Prawn, and CA Halibut	
Ocean Resources Enhancement	Administer Ocean Resources Enhancement and Hatchery Program (OREHP)	Ongoing
Fisheries Adaptive Capacity	Investigate ways for improving fisheries management responsiveness and fishing communities' resilience to changing ocean conditions	Ongoing
Fisheries Adaptive Capacity	Support development of port profile descriptions and socioeconomic tools	EC Sep 2020

#### **Appendix A: Completed Tasks**

#### A-I. MLMA Framework – Prioritization

Торіс	Tasks
Fisheries Set #1: Key finfish plus Bay Shrimp, CA Spiny Lobster, and Market Squid	Bycatch Ecological Risk Assessment (ERA) and Habitat ERA, Target ERA conducted and combined with Productivity & Susceptibility Analysis (PSA); Bycatch, Habitat, and PSA + Target results combined
Fisheries Set #1	Update on production of prioritized list presented to MRC
Fisheries Set #1	ERA + PSA prioritization results presented to stakeholders

#### A-II. MLMA Framework - Scaling

See II. MLMA Framework – Scaling for current status of tasks.

#### A-III. Scaled Fishery Management: Document Development

See III. Scaled Fishery Management: Document Development for current status of tasks.

#### A-IV. Scaled Fishery Management: Key Actions for Priority Species without FMP

See IV. Scaled Fishery Management: Key Actions for Priority Species without FMP for current status of tasks.

#### A-V. Scaled Fishery Management: Key Actions for Priority Species with FMP

Торіс	Tasks
Pacific Herring	FMP completed

#### A-VI. Managing Fisheries

Торіс	Tasks
Monitoring/Research	Collaborative research on habitat use and population monitoring of the Warty Sea Cucumber completed
Identification of Management Measures and	Regulations for Pacific Hagfish traps permitted on
Development of Regulations	single vessel adopted

#### A-VII. Outreach

Торіс	Tasks
CA Fisheries Portal Phase 1	Design for CA Fisheries Portal developed; includes layout for ESR text

#### A-VIII. Implementing New Programs

Торіс	Tasks
Fisheries Disaster Relief Programs	Program for Dungeness Crab fisheries disaster payout developed

#### A-IX. Improving MLMA Fisheries (Ecological, Social, and Management Systems)

Торіс	Tasks
Data Modernization and Review	Transition from paper commercial landing receipts
	to electronic receipts
New Data Collection Methods	Evaluation of use of remote operating vehicles for collecting sea cucumber data inside and outside of MPAs
New Fishery Management Protocols and Tools	Scoping regarding types of analyses to support review of CA restricted access programs

#### Appendix B: Longer-term Tasks

#### **B-I. MLMA Framework – Prioritization**

Торіс	Tasks
Future Prioritization Process	Develop socioeconomic assessment tool for use
	in prioritization process as noted in MLMA-based
	Management Framework
Future Prioritization Process	Develop oceanographic and climate assessment
	tool to include in the prioritization process

#### B-II. MLMA Framework – Scaling

No new tasks identified at this time.

#### **B-III. Scaled Fishery Management: Document Development**

Торіс	Tasks
Update ESRs	Enhance sections of management documents for priority fisheries including socioeconomics and climate
Prioritized Fisheries (Set #2)	Address target species of priority fisheries at appropriate scale identified in Section II

#### B-IV. Scaled Fishery Management: Key Actions for Priority Species without FMP

Торіс	Tasks
Prioritized Target Species (Set #2)	Identify key actions for target species of priority fisheries identified in Section II that are not currently covered under an FMP

#### B-V. Scaled Fishery Management: Key Actions for Priority Species with FMP

Торіс	Tasks
Prioritized Target Species (Set #2)	Identify key actions for target species of priority fisheries identified in Section II that are currently covered under an FMP

#### **B-VI. Managing Fisheries**

Торіс	Tasks		
Monitoring/Research	Conduct research to address the use of marine		
	protected areas in MLMA-based management		
Monitoring/Research	Conduct research to address socioeconomic		
	information gaps		
Monitoring/Research	Conduct research to address climate-related		
	information gaps		
Review Analytical Results and Develop	Identify management options to address fisheries		
Management Options	concerns (e.g., ecological and socioeconomic)		
	highlighted through monitoring/research and		
	assessments		
Review Analytical Results and Develop	Identify management options for addressing risks		
Management Options	to fish stocks and fishing communities from		
	climate change		

#### **B-VII.** Outreach

Торіс	Tasks
CA Fisheries Portal Phase 3	Implement enhancements for CA Fisheries Portal

#### **B-VIII.** Implementing New Programs

Торіс	Tasks
New Mandated Programs	Implement any new marine fisheries programs as
	mandated through new legislation

Торіс	Tasks
Experimental Fisheries	Identify emerging fisheries that might benefit from
	inclusion in an experimental gear program

#### B-IX. Improving MLMA Fisheries (Ecological, Social, and Management Systems)

Торіс	Tasks
Data Modernization and Review	Develop and implement public fisheries data
	query tool for the Marine Landings Data System
Data Modernization and Review	Centralize fisheries independent data sets
New Fishery Management Protocols and Tools	Test methods for reducing bycatch
Fisheries Adaptive Capacity	Identify management approaches that increase adaptive capacity for responding to climate
	change

#### Appendix C: Fisheries Prioritization Set #1

#### **Commercial Fisheries**

Species	Gear	Total	PSA Rank	Bycatch Rank	Habitat Rank
Pacific Angel Shark	Gill Net	4	1	1	2
CA Halibut	Trawl	5	2	2	1
CA Halibut	Gill Net	5	2	1	2
White Seabass	Gill Net	6	3	1	2
CA Bay Shrimp	Trawl	7	3	3	1
Spiny Lobster	Trap	7	2	3	2
Pacific Herring	Gill Net	8	3	3	2
CA Sheephead	Trap	8	2	4	2
CA Barracuda	Gill Net	10	3	2	5
Pacific Hagfish	Trap	11	4	4	3
Shiner Perch	Trap	11	4	4	3
Market Squid	Purse Seine	11	4	3	4
CA Halibut	Hook-and-Line	12	3	4	5
Pacific Bonito Purse Seine		13	4	4	5
Redtail Surfperch	Hook-and-Line	13	4	4	5
Night Smelt	A Frame	13	4	4	5
Jacksmelt	Hook-and-Line	13	4	4	5

#### **Recreational Fisheries**

Species	Gear	Total	PSA Rank	Bycatch Rank	Habitat Rank
Brown Smoothhound	Hook-and-Line	9	1	4	4
CA Sheephead	Hook-and-Line	9	2	4	3
Kelp Bass	Hook-and-Line	9	2	4	3
Ocean Whitefish	Hook-and-Line	9	2	4	3
Spiny Lobster	Hoop Net	9	3	4	2
Spotted Sand Bass	Hook-and-Line	10	2	4	4
Barred Sand Bass	Hook-and-Line	10	2	4	4
CA Halibut	Hook-and-Line	11	3	4	4
Barred Surfperch	Hook-and-Line	11	3	4	4
White Seabass	Hook-and-Line	12	4	4	4
CA Barracuda	Hook-and-Line	12	3	4	5
CA Corbina	Hook-and-Line	12	4	4	4
White Croaker	Hook-and-Line	12	4	4	4
Pacific Bonito	Hook-and-Line	13	4	4	5

#### **Appendix D: Scaled Fishery Management**

Scaled Fishery Management along a continuum from Enhanced Status report (ESR) to a complex Fishery Management Plan (FMP) [Adapted from the 2018 MLMA Master Plan, Figure 2]

What scale of management is appropriate?						
ESR	FGC §7056(a-m) → ESR & Rulemaking → ESR & Basic FMP → ESR & Complex FMP					
ESR	ESR & Data/Scoping	ESR & Rulemaking	ESR & Basic/Complex FMP			
Spotfin Croaker*	Barred Sand Bass	Grunion**	California Halibut			
Yellowfin Croaker*	Kelp Bass	Kelp**	Red Abalone***			
Yellowtail*	Barred Surfperch					
Surf smelt*	California Barracuda					
	Bay Shrimp					
	Pacific Angel Shark					
	Brown Smoothhound Shark					

\* Species not included in prioritization process, but identified as needing ESR

\*\* Species not included in prioritization process, but identified as needing ESR and rulemaking in accordance with criteria listed in the MLMA Master Plan, Chapter 2, regarding emerging issues

\*\*\* FMP currently being developed

## CDFW Awards \$11.35 Million for Greenhouse Gas Reduction Grant Projects

December 10, 2019

The California Department of Fish and Wildlife (CDFW) today announced the selection of seven projects to restore wetlands that will reduce the emission of greenhouse gases (GHGs) and provide other ecological co-benefits.

The awards, totaling \$11.35 million, were made under CDFW's 2019 Wetlands Restoration for Greenhouse Gas Reduction Program Proposal Solicitation Notice. The seven projects will restore or enhance approximately 1,700 acres of wetlands and mountain meadows and sequester an estimated 67,400 metric tons of carbon dioxide (MTC02e).

The Wetlands Restoration for Greenhouse Gas Reduction Program focuses on projects with measurable objectives that will lead to GHG reductions in wetlands and watersheds while providing co-benefits such as enhancing fish and wildlife habitat, protecting and improving water quality and quantity and helping California adapt to climate change. Wetlands have high carbon sequestration rates that can store carbon for decades.

"These projects will significantly benefit climate science and ecosystems representing the coast, the Central Valley and the Sierra Nevada," said CDFW Director Charlton H. Bonham. "We are excited to continue the momentum to restore California's wetlands while making a demonstrable impact to greenhouse gases."

To improve efficiency and alignment with program priorities, a new two-phase application process involving a pre-application and final application was implemented for 2019 solicitation.

The following projects are approved for funding:

- The Light-handed Meadow Restoration in Faith Valley and Log Meadow (\$475,675 to American Rivers) will restore and protect 138 acres of mountain meadow at two high-priority sites, Faith Valley in the Humboldt-Toiyabe National Forest and Log Meadow in Sequoia National Park. The project will have an estimated GHG benefit of 7,644 MTCO2e.
- The Hill Slough Restoration Project (\$5,577,413 to Ducks Unlimited, Inc.) will restore 603 acres of managed seasonal wetland to tidal wetland and restore 46 acres of existing upland to tidal wetland in the Suisun Marsh. The project will have an estimated GHG benefit of 25,242 MTCO2e.
- The City of Newman Inland Wetland Restoration Project (\$610,000 to the City of Newman) will restore a 10-acre parcel of land owned by the City of Newman, Merced County. The project will provide multiple environmental, economic and public benefits and will have an estimated GHG benefit of 78 MTCO2e.
- The White Slough Tidal Wetlands Restoration Project (\$852,113 to the California State Coastal Conservancy) will restore 40 acres of coastal tidal wetlands on diked historic tidelands in the

White Slough Unit of Humboldt Bay National Wildlife Refuge in Humboldt County. The project will have an estimated GHG benefit of 17,073 MTCO2e.

- The Upper Truckee River and Marsh Restoration Project (\$895,000 to the California Tahoe Conservancy) will restore 13 acres of wetlands in the Upper Truckee River in El Dorado County by grading back to historic topography, removing invasive species and revegetation. The project will have an estimated GHG benefit of 6,545 MTCO2e.
- The Lower Walnut Creek Restoration Project (\$950,000 to Contra Costa County Flood Control and Water Conservation District) will restore and enhance approximately 183 acres of tidal wetlands and tidal channel, 17 acres of non-tidal pickleweed marsh and 36 acres of adjacent lowland terrestrial ecotones, and create and enhance approximately 60 acres of uplands. The project will have an estimated GHG benefit of 5,690 MTCO2e.
- The Ocean Ranch Restoration Project (\$1,998,282 to the California State Coastal Conservancy) will restore the natural tidal prism and improve connectivity of tidal and freshwater habitats within 571 acres of Ocean Ranch in Humboldt County. The ORRP will have an estimated GHG benefit of 5,223 MTCO2e.

CDFW's Wetlands Restoration for Greenhouse Gas Reduction Program is part of California Climate Investments (CCI), a statewide program that puts billions of cap-and-trade dollars to work reducing GHG emissions, strengthening the economy, and improving public health and the environment – particularly in disadvantaged communities. The cap-and-trade program also creates a financial incentive for industries to invest in clean technologies and develop innovative ways to reduce pollution. CCI projects include affordable housing, renewable energy, public transportation, zero-emission vehicles, environmental restoration, more sustainable agriculture, recycling, and much more. More information about the CDFW program can be found at www.wildlife.ca.gov/conservation/watersheds/greenhouse-gasreduction.

For more information about cap-and-trade funding and efforts to reduce greenhouse gas emissions, please visit the CCI website at **www.caclimateinvestments.ca.gov**.

###

*Media Contacts: Matt Wells,* CDFW Watershed Restoration Grants Branch, (916) 445-1285 *Kirsten Macintyre,* CDFW Communications, (916) 322-8988

## CDFW Awards \$10.1 Million for Fisheries Habitat Restoration and Forest Legacy Projects

December 11, 2019 by kmacintyre

The California Department of Fish and Wildlife (CDFW) today announced the selection of 31 projects that will receive funding for the restoration, enhancement and protection of anadromous salmonid habitat in California watersheds, as well as forest legacy restoration.

The grants, which total \$10.1 million, are distributed through CDFW's Fisheries Restoration Grant Program (FRGP). They include \$256,440 allocated for timber legacy restoration projects and approximately \$9.8 million for anadromous salmonid restoration projects. FRGP monies come from a combination of state sources and the federal Pacific Coastal Salmon Recovery Fund.

"We are excited to further the restoration of river ecosystems critical to California's salmon and steelhead," CDFW Director Charlton H. Bonham said. "Several of this year's projects incorporate process-based restoration to address the root of ecological degradation and benefits all species using the waterway, including salmonids."

In response to the 2019 Fisheries Habitat Restoration Grant Solicitation, CDFW received 70 proposals requesting more than \$38 million in funding. All proposals underwent an initial administrative review. Those that passed were then evaluated through a technical review process that included reviews by CDFW and National Oceanic and Atmospheric Administration scientists.

The 31 approved projects will further the objectives of state and federal fisheries recovery plans, including removing barriers to fish migration, restoring riparian habitat, monitoring of listed populations and creating a more resilient and sustainably managed water resources system (e.g., water supply, water quality and habitat) that can better withstand drought conditions. These projects further the goals of California's Water Action Plan and CDFW's State Wildlife Action Plan, as well as addressing limiting factors specified in state and federal recovery plans.

The list of approved projects is available on the **FRGP web page**.

###

#### Media Contacts:

<u>*Matt Wells*</u>, CDFW Watershed Restoration Grants Branch, (916) 445-1285 <u>*Kirsten Macintyre*</u>, CDFW Communications, (916) 322-8988

## CDFW Releases Final Environmental Impact Report for Ballona Wetlands Ecological Reserve

December 19, 2019

The California Department of Fish and Wildlife (CDFW) has released the Final Environmental Impact Report (FEIR) for the restoration of the Ballona Wetlands Ecological Reserve (BWER).

CDFW, in partnership with the State Coastal Conservancy and The Bay Foundation, has spent years working with the public and envisioning a plan for the revitalization of BWER. The report, found at <u>https://www.wildlife.ca.gov/Regions/5/Ballona-EIR</u>, is the culmination of countless hours of staff work to determine a course of action for the Ballona Wetlands which were once an approximate 2,000-acre expanse of marshes, mud flats, salt pans and sand dunes that stretched from Playa del Rey to Venice and inland to the Baldwin Hills. Today, BWER is less than 600 acres of open space, all that remains of the former wetlands, now owned by the people of California and managed by CDFW.

Following the release of this FEIR, CDFW will select a final restoration project and assist Los Angeles County Flood Control District in applying for a permit from the U.S Army Corps of Engineers as well as seeking approval from other agencies including the Coastal Commission and Regional Water Quality Control Board.

The Final EIR, appendices, and all documents referenced in the Final EIR are available for public review during normal working hours at the following locations:

- California State Coastal Conservancy, 1515 Clay St., 10th Floor, Oakland, CA 94612
- Los Angeles Public Library, Playa Vista Branch, 6400 Playa Vista Drive, Los Angeles, CA 90094
- County of Los Angeles Public Library, Lloyd Taber-Marina del Rey, 4533 Admiralty Way Marina del Rey, CA 90292
- Los Angeles Public Library, Westchester-Loyola Village Branch, 7114 W Manchester Ave, Los Angeles, CA 90045

#### Media Contact:

Jordan Traverso, CDFW Communications, (916) 654-9937

## Roadkill Still Illegal to Possess on Jan. 1, Despite Passage of the "Wildlife Traffic Safety Act"

December 23, 2019

The California Department of Fish and Wildlife (CDFW) reminds the public it is still illegal to collect or possess roadkill animals and violators could face citation, even after Jan. 1, 2020. SB 395 – Chapter 869 (Archuleta), also known as the "Wildlife Traffic Safety Act," was enacted with the intent to eventually make available for utilization the roadkill meat of deer, elk, pronghorn antelope or wild pig.

However, the legislative language does not permit the general public collection and utilization of roadkill animals, but rather authorizes development of a program for what the bill describes as "salvageable wild game meat." Such a program is not yet in place, contrary to many news articles and social media traffic.

SB 395 only authorizes the California Fish and Game Commission to adopt regulations, in consultation with the California Department of Transportation, California Highway Patrol and the California Office of Environmental Health Hazard Assessment, to establish such a salvageable wild game meat utilization program. It would mandate any such program to include a permit and a reporting process.

"Many Californians think it will be legal to possess and utilize roadkill on Jan. 1, which is the technical effective date of the Wildlife Traffic Safety Act, but that's not the case," said David Bess, CDFW Deputy Director and Chief of the Law Enforcement Division. "There is no collection or utilization program in place. We are trying to avoid any confusion by misinformed citizens who think it is lawful to collect roadkill animals."

In addition, SB 395 authorizes CDFW to create a roadkill reporting database to help wildlife managers identify the places where wildlife/vehicle collisions are most common. Data from such a reporting system could support wildlife conservation efforts conducted through regional conservation investment strategies. That program is also not yet in place. However, the University of California, Davis has a public reporting system called the **California Roadkill Observation System** (CROS) that is currently operational. Any citizen can contribute roadkill data and photos to CROS, either anonymously or as a registered user.

###

*Media Contacts: Capt. Patrick Foy*, CDFW Law Enforcement Division, (916) 651-6692 *Kirsten Macintyre*, CDFW Communications, (916) 322-8988

## Elk, Pronghorn Antelope Captures to Be Conducted in Northern California

February 5, 2020

The California Department of Fish and Wildlife (CDFW) is planning to capture numerous elk and pronghorn antelope in northern California over the next two weeks.

Under the direction of CDFW veterinary staff, CDFW wildlife biologists will lead the captures. Capture crews will locate elk and pronghorn via helicopter, capture them with net guns and restrain the captured animals for tagging and collaring.

From Feb. 6-8, CDFW will capture as many as 10 adult Roosevelt elk in Humboldt County in northwestern California. From Feb. 9-13, CDFW will capture up to 22 Rocky Mountain elk in Shasta, Lassen, Modoc and Siskiyou counties in northeastern California. Pronghorn captures are scheduled for Feb. 14-15, also in northeastern California.

The elk will be captured on lands managed by the U.S. Forest Service (USFS) and National Park Service (NPS) as well as on private properties with permission from landowners. CDFW is grateful to the USFS, NPS, timberland owners and other private landowners that are providing access to their lands for the captures.

Each elk will be ear tagged and fitted with a GPS collar. The collars will provide detailed information about elk for approximately five years. The information will enhance CDFW's knowledge of current elk distribution, abundance, survival and habitat use.

For additional information regarding captures in Shasta, Lassen, Modoc or Siskiyou counties, please contact CDFW wildlife biologist Erin Nigon at (530) 598-6011. For information regarding captures in Humboldt County, please contact CDFW wildlife biologist Carrington Hilson at (707) 502-4078. For information on pronghorn captures, please contact biologist Richard Shinn at (530) 233-3581

#### California Fish and Game Commission Tribal Consultation Policy

Adopted June 2015

On September 19, 2011, Governor Edmund G. Brown, Jr., issued Executive Order B-10-11, which provides, among other things, that it is the policy of the administration that every state agency and department subject to executive control implement effective government-to-government consultation with California Indian Tribes.

#### **Purpose of the Policy**

The mission of the California Fish and Game Commission (FGC) is, on the behalf of California citizens, to ensure the long term sustainability of California's fish and wildlife resources by setting policies, establishing appropriate rules and regulations, guiding scientific evaluation and assessments, and building partnerships to implement this mission. California Native American Tribes, whether federally recognized or not, have distinct cultural, spiritual, environmental, economic and public health interests and unique traditional knowledge about the natural resources of California.

The purpose of this policy is to create a means by which tribes and FGC can effectively work together to realize sustainably-managed natural resources of mutual interest.

#### **Policy Implementation**

- Communication. Both FGC and the tribes are faced with innumerable demands on their limited time and resources. In the interest of efficiency, FGC will annually host a tribal planning meeting to coordinate the upcoming regulatory and policy activities before FGC. The meeting will provide a venue for education about process, identifying regulatory and policy needs, and developing collaborative interests; this will include inviting sister agencies to participate.
- 2. Collaboration. In areas or subjects of mutual interest, FGC will pursue partnerships with tribes to collaborate on solutions tailored to each tribe's unique needs and capacity. The structure of these collaborative efforts can range from informal information sharing, to a memorandum of understanding with more specific agreements regarding working relationships and desired outcomes, to co-management agreements with specific responsibilities and authorities.
- 3. Record-keeping. FGC will maintain a record of all comments provided by tribes and will include them in administrative records where appropriate.
- 4. Training. FGC will provide training to interested tribes on its processes for regulation and policy development.

#### California Fish and Game Commission Tribal Committee (TC)

#### Work Plan: Scheduled Topics and Timeline for Items Referred to TC by the California Fish and Game Commission

Topic / Goal	Type / Lead	Jan 17, 2020 Los Angeles	Aug 18, 2020 Fortuna	Nov 9, 2020 Monterey area
Special Projects				
Co-management: Develop a definition	TC Project	X/R		
Coastal Fishing Communities Project: Updates and guidance	MRC Project	Х	Х	Х
Regulatory / Legislative				
Kelp and algae harvest management regulations: Updates and then recommendation and guidance	DFW Project and Regulation Change	X/R		
Developing Management Issues				
FGC Climate Policy: During development of policy, make recommendations and provide guidance	FGC Policy			
Management Plans				
Sheep, deer, antelope, trout, abalone, kelp/seaweed: Updates and guidance (timing as appropriate for each)	DFW	х	х	х
Informational Topics				
Kelp recovery efforts: Update as requested	DFW			
Status of abalone recovery: Update as requested	DFW			
Studies of pinnipeds and California's fisheries: What studies have been conducted, how they affect California's fisheries, and options for addressing impacts	DFW	х	х	
Annual tribal planning meeting: (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.		х	х	х
Marine Protected Areas Statewide Leadership Team (MSLT): Update on tribal participation in MSLT and implementation of the MSLT work plan	OPC Project	х	х	х
Wildfire impacts and state response: Update as requested	DFW			
Proposition 64 (cannabis): Update as requested	DFW LED			
Cross-pollination with MRC and WRC: Identify tribal concerns and common themes with WRC and MRC	FGC Committees	х	х	х
FGC regulatory calendar: Update	FGC staff	Х	Х	Х

Updated February 13, 2020

**Key:** X = Discussion scheduled X/R = Recommendation developed and moved to FGC

FGC = California Fish and Game Commission MRC = FGC's Marine Resources Committee DFW = California Department of Fish and Wildlife

TC = FGC's Tribal Committee WRC = FGC's Wildlife Resources Committee LED = DFW's Law Enforcement Division

#### California Fish and Game Commission Tribal Committee Proposed Definition of Co-Management

January 17, 2020

In late 2018, the California Fish and Game Commission (Commission) adopted a comanagement *vision statement* as recommended by the Commission's Tribal Committee:

The vision of tribes, the California Fish and Game Commission, and the California Department of Fish and Wildlife is to engage in a collaborative effort between sovereigns to jointly achieve and implement mutually agreed upon and compatible governance and management objectives to ensure the health and sustainable use of fish and wildlife.

As follow-up to the vision statement, a draft definition for co-management has been discussed during multiple meetings of the Commission's Tribal Committee and an ad hoc work group in which members of California's tribes discussed options for the definition.

After soliciting feedback, and making changes over several iterations, the Tribal Committee recommends as the definition for co-management:

A collaborative effort established through an agreement in which two or more sovereigns mutually negotiate, define, and allocate amongst themselves the sharing of management functions and responsibilities for a given territory, area or set of natural resources.

## **Rincon Band of Luiseño Indians**

One Government Center Lane | Valley Center | CA 92082 (760) 749-1051 | Fax: (760) 749-8901 | rincon-nsn.gov



January 16, 2020

Melissa Miller-Henson Executive Director State of California Fish and Game Commission P.O. Box 944209 Sacramento, CA 94244-2090

#### Re: Proposed Definition of Co-Management of Fish and Wildlife in California

Dear Ms. Miller-Henson:

The Rincon Band of Luiseño Indians write to you to express the support of the draft definition of co-management per your letter dated December 26, 2019: "A collaborative effort established through an agreement in which two or more sovereigns mutually negotiate, define, and allocate amongst themselves the sharing of management functions and responsibilities for a given territory, area or set of natural resources." We would like to see this put in place in a timely fashion so the effective co-management practices can begin as soon as possible.

Co-management between the Tribes and the State of California is extremely important and long overdue. Tribes have lost access to hunting, fishing, gathering, ceremonial spots, sacred areas, and management of their original territories. This has a negative impact on the people of the Tribes and both their spiritual and physical well-being. It has also had a negative impact on the land and ecosystems with the loss of sustainability, catastrophic wildfires in the absence of cultural burning, fragmented habitats, and many more impacts. Co-management between the Tribes and the State is a small, but vitally important step towards bridging this gap. We would like to work with you to have co-management put in place in an expedient manner for the benefit of Tribal people and the environment.

Thank you for your time and consideration.

Sincerely,

Bo Mazzetti Tribal Chairman

January 22, 2020

2020 JAN 29 AM 11:00

#### Via U.S. Mail and Email

Melissa Miller-Henson, Executive Director California Fish and Game Commission P.O. Box 944209 Sacramento, CA 94244-2090 Phone: (916) 653-4899 Email: fgc@fgc.ca.gov

#### <u>RE:</u> <u>Support of the Final Draft Proposed Definition of Co-Management</u> of Fish and Wildlife in California

Dear Executive Director Miller-Henson,

On behalf of the Jamul Indian Village of California (the "<u>Tribe</u>"), we write in support of the final draft proposed definition of "co-management" of fish and wildlife in California among California's tribes and tribal communities, the California Fish and Game Commission (the "<u>Commission</u>"), and the California Department of Fish and Wildlife (the "<u>Department</u>"). The Tribe supports the proposed definition because it reflects respect among sovereigns and promotes collaboration and sharing of management over the precious natural resources located within tribal communities and California. Thank you for the opportunity to lend our support.

Sincerely,

Erica M. Pinto, Chairwoman Jamul Indian Village of California

cc: Jacque Hostler-Carmesin (Via Email Only)

Mm. info@iamulindianvillag

619.669.4785 619.669.4817 P. O. Box 612 Jamul, CA 91935

jamulindianvillage.co

From: InterTribal Sinkyone Wilderness Council <intertribalsinkyone@sbcglobal.net>
Sent: Tuesday, February 11, 2020 10:35 AM
To: FGC <FGC@fgc.ca.gov>
Cc: Miller-Henson, Melissa@FGC <Melissa.Miller-Henson@fgc.ca.gov>
Subject: Comments on Draft Definition of Tribal—State Co-Management

Dear Fish & Game Commission:

The InterTribal Sinkyone Wilderness Council is pleased to provide the Commission with our Council's attached "Revisions to Draft Definition of Co-Management by California Indian Tribes and the State of California", in advance of the Commission's February 21 meeting.

Our attached comment letter pertains to agenda item #15 (Tribal Committee Report).

Sincerely, Hawk Rosales Executive Director InterTribal Sinkyone Wilderness Council
# InterTribal Sinkyone Wilderness Council Revisions to Draft Definition of Co-Management by California Indian Tribes and the State of California

InterTribal Sinkyone Wilderness Council is a consortium of 10 sovereign, federally recognized Northern California Indian tribes.<sup>1</sup> The tribes are the original and longstanding stewards of lands and waters situated within their traditional territories of the north coast region. For countless generations, the tribes have maintained their vital connections to and relationships with marine and terrestrial ecosystems. They remain committed to protection and revitalization of these ecosystems, from which their cultural lifeways are inseparable.

This statement by the Sinkyone Council is in response to the **Proposed Draft Definition of Co-Management** currently under discussion by California Indian tribes and the California Fish and Game Commission (FGC). We thank all who have contributed to developing the current draft definition. It provides an outstanding basis for the broader, more complete definition needed to accurately characterize Tribal—State Co-Management. We believe it is important the definition include perspectives and concepts of importance to the tribes. Below, shown in redline, are the Sinkyone Council's proposed revisions to the draft definition. Pages 2-3 contain comments explaining the rationale for each of our proposed revisions. An earlier version of our revisions was submitted to the Commission electronically on January 13.

# **<u>CO-MANAGEMENT VISION STATEMENT—ADOPTED BY FGC IN 2018:</u>**

The vision of tribes, the California Fish and Game Commission, and the California Department of Fish and Wildlife is to engage in a collaborative effort between sovereigns to jointly achieve and implement mutually agreed upon and compatible governance and management objectives to ensure the health and sustainable use of fish and wildlife.

# **CURRENTLY PROPOSED DRAFT DEFINITION OF CO-MANAGEMENT:**

A collaborative effort established through an agreement in which two or more sovereigns mutually negotiate, define, and allocate amongst themselves the sharing of management functions and responsibilities for a given territory, area or set of natural resources.

# **SINKYONE COUNCIL REVISIONS TO DRAFT DEFINITION OF CO-MANAGEMENT:**

A collaborative effort premised upon respective responsibilities and commitments and established through an agreement in which two or more between sovereigns, in which California Indian tribe(s), the State of California and other sovereigns as deemed appropriate by the tribe(s) and state mutually negotiate, define, and allocate amongst themselves the sharing of management functions and responsibilities for a given traditional tribal territory, area or set of natural resources, as informed by the sovereigns' respective and unique roles, authorities and governance structures and with the shared goal of promoting respectful intergenerational relationships with nature, including its care and use.<sup>2</sup>

# Rationale for the above redline revisions is provided in the below Comments section.

<sup>2</sup> Revisions approved by the Sinkyone Council on January 27, 2020.

<sup>&</sup>lt;sup>1</sup> Cahto Tribe of Laytonville Rancheria; Coyote Valley Band of Pomo Indians; Hopland Band of Pomo Indians; Pinoleville Pomo Nation; Potter Valley Tribe; Redwood Valley Little River Band of Pomo Indians; Robinson Rancheria of Pomo Indians; Round Valley Indian Tribes; Scotts Valley Band of Pomo Indians; and Sherwood Valley Rancheria of Pomo Indians.

# **COMMENTS ON SINKYONE REVISIONS TO CURRENT DRAFT DEFINITION**

Co-management is much more than a "collaborative effort." Certainly it is collaborative, but it also is the solemn *responsibility and commitment* of each party involved. The word "responsibility" is included toward the end of the draft definition. But we feel the ideas of commitment and responsibility should be emphasized at the beginning of the definition to highlight the importance of these concepts. Additionally, the tribes and the state have distinct and unique ("*respective*") responsibilities and commitments that each brings into the co-management process.

The current draft definition includes no mention of California Indian tribes or the State of California, though the word "sovereigns" strongly implies those parties are intended. We recommend making this intention clear by naming those parties within the definition. While the phrase "...tribes, the California Fish and Game Commission, and the California Department of Fish and Wildlife" is included in the Commission's vision statement on co-management, the definition itself should clearly name the sovereigns. This clarity is important for the definition, because while the Commission and the Department are agencies of the state, the tribes and State of California actually are the sovereign parties.

It is contemplated that, in some cases, other sovereigns may be party to co-management agreements. For example, a number of tribal territories extend well beyond California's borders and into neighboring states, which might necessitate those states being party to certain agreements. Some agreements might also necessitate inclusion of lands and waters under federal jurisdiction, in which case the federal government would also be party to the agreement. We recommend including the revision "*and other sovereigns as deemed appropriate by the tribe(s) and state*" to clarify the tribes and the state can make the determination of inviting and including these other sovereigns, as appropriate.

If the term "territory" is in reference to traditional tribal territory, this intent should be made clear by using the term "traditional tribal territory". This concept holds great cultural significance for every tribe.

The fact that the sovereigns each possess their own sets of "*respective and unique roles, authorities and governance structures*" should be expressly stated within the definition—rather than just assuming this is understood. To be comprehensive, the definition should clearly express the fundamental concept that these are core functions of the sovereigns, and that they are different and unique for each sovereign.

While unintended, the current draft definition hints that nature is a collection of "resources" to be used and managed by humans and subject to human needs, determinations and controls. We believe the definition needs to include the shared value of promoting **respectful intergenerational relationship** with nature, because this is our collective responsibility. The tribes and the state share a commitment to this important concept. It is found within agency mission statements and programs, and in the vast array of Tribal Traditional Knowledges, understandings and practices that are foundational to the deep respect and reciprocity characterizing the tribes' cultural lifeways and deep relationships with nature. The State of California acknowledges the validity of Tribal Traditional Knowledge and cultural responsibilities, and it has made impressive strides in bringing about increased respect, stewardship and protection for nature. Given all these facts, the definition can and should include this vitally

important concept by adding the phrase "*the shared goal of promoting respectful intergenerational relationships with nature, including its care and use*".

**To be clear, the Sinkyone Council supports full retention of ALL wording in the current draft definition**. Tribes and the state devoted significant time and effort in crafting it, through a process of thoughtful collaboration and goodwill. We request inclusion of our proposed revisions, in order for the intent and scope of the current draft definition to embody a fuller expression that helps amplify the definition through addition of the facts and ideas we have outlined. From both process and practicality standpoints, it is very important that this additional tribal input provided by the Sinkyone Council be incorporated into the definition. A number of tribes are prepared or preparing to enter into formal co-management agreements with the state. <u>This co-management definition is critically important because it will set the tone and standard for many years to <u>come</u>. A definition that includes the relevant facts, intentions and aspirations we are requesting will help promote and support the shared goal of expanded opportunities for Tribal—State Co-Management.</u>

We thank you for reading and fully considering our recommendations.

Commissioners Eric Sklar, President Saint Helena Jacque Hostler-Carmesin, Vice President McKinleyville Russell E. Burns, Member Napa Peter S. Silva, Member Jamul Samantha Murray, Member Del Mar

# **Fish and Game Commission**



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# MARINE RESOURCES COMMITTEE

Committee Co-chairs: Commissioner Silva and Commissioner Murray

# November 5, 2019 Meeting Summary

Following is a summary of the California Fish and Game Commission Marine Resources Committee (MRC) meeting as prepared by staff. An audio recording of the meeting is available upon request.

# Call to order

The meeting was called to order at 9:05 a.m. by Commissioner Murray at the California Natural Resources Building, Redwood Room, in Sacramento, California. She noted that MRC co-chair Commissioner Silva was not yet in attendance due to a delayed flight. Commissioner Silva arrived at approximately 10:30 a.m.

Elizabeth Pope gave welcoming remarks and outlined meeting procedures and guidelines for participating in Committee discussions, noting that the Committee is a non-decision-making body that provides recommendations to the California Fish and Game Commission (Commission) on marine items. She reminded participants that the meeting was being audio recorded for posting to the website with a meeting summary prepared by staff and introduced Commission and California Department of Fish and Wildlife (Department) staff. The following Committee member(s), Commission and Department staff were in attendance:

# **Committee Co-Chairs**

Peter Silva Present Samantha Murray Present

# **Commissioner Staff**

Melissa Miller-Henson Elizabeth Pope Sergey Kinckek Maggie McCann

# Department Staff

Bob Puccinelli Chris Stoots Executive Director Acting Marine Advisor Staff Services Analyst Sea Grant State Fellow

Captain, Law Enforcement Division Captain, Law Enforcement Division

Dr. Craig Shuman	Regional Manager, Marine Region
Debbie Aseltine-Neilson	Senior Environmental Scientist (Specialist), Marine Region
Ryan Bartling	Senior Environmental Scientist (Specialist), Marine Region
James Ray	Environmental Scientist Marine Region
Andrew Weltz	Environmental Scientist Marine Region

# Invited Speakers

Jenn Eckerle	Deputy Director, California Ocean Protection Council
Dr. Alexis Jackson	Fisheries Project Director, The Nature Conservancy

# 1. Approve agenda and order of items

MRC approved the agenda in the order listed; however, agenda item 8 Kelp Restoration and Recovery Efforts was heard out of order, following agenda item 10.

# 2. General public comment for items not on the agenda

Public comments included support for the Pacific Herring Fishery Management Plan (FMP) adopted by the Commission in October, a highlight of the recent release of 2,300 halibut in San Diego, and concerns from a former commercial abalone fisherman about Department personnel issues, promised versus realized effectiveness of the marine protected area network, and current urchin policy.

# 3. Staff and agency updates

# (A) Ocean Protection Council (OPC)

Jen Eckerle provided an update on the release of the draft OPC strategic plan, noting its areas of interest, goals, and opportunities for public comment, and highlighted projects to be considered for approval at the November 13 OPC meeting. She also provided information on the development of two marine protected area monitoring and resilience work groups.

# Discussion

A commenter asked for clarification regarding when OPC would issue a request for proposals (RFP) for whale and sea turtle entanglement funding. The response was that the RFP would likely be issued in early 2020.

# (B) Department

*Marine Region:* Craig Shuman, provided an update on the Department director's determination of a need to delay the opening of commercial crab season by eight days and noted that approximately 20 comments on issues associated that determination had been received by the Department.

I. Update on rulemaking to consider changes to commercial herring eggs on kelp regulations: Andrew Weltz provided an overview on the proposed regulatory changes to address the commercial herring eggs on kelp (HEOK) fishery as requested by the Commission in October following specific comments and concerns identified by a HEOK fishery participant. The proposed regulatory

changes, which are expected to be noticed at the April 2020 Commission meeting, address the seven items identified by the HEOK participant.

# Discussion

The HEOK participant in attendance shared his perspective that the rulemaking changes would allow for a more straightforward fishery and rationale for several of the seven requested changes. There was additional discussion between the HEOK participant, the Department's Law Enforcement Division (LED) and Department program staff on gear marking requirements, with LED noting that marking the ends of lines is an important aspect to include in the HEOK fishery.

Co-chair Murray asked for clarification on the proposed regulatory timeline. The Department identified an April notice hearing with potential adoption in June, to allow the regulations to be in place for the 2020/2021 season. The MRC co-chairs expressed support for the timetable identified by the Department.

*Law Enforcement Division:* Captain Bob Puccinelli provided an update on various marine citations including undersized pismo clams, undersized salmon, the take of a Coho salmon, illegal abalone and lobster, and derelict crab pots. He also discussed LED's involvement with the ropeless gear/gear innovation demonstration day and assistance with the Conception fire.

# Discussion

Commissioner Murray thanked the organizers and participants of the gear innovation day that she attended. One commenter asked for clarification about previously-identified enforcement concerns with ropeless gear. LED clarified that they were involved with the discussions and would be monitoring for ongoing enforcement concerns. Commenters expressed general support for the development of ropeless gear; one commenter provided specific support for the use of zinc-links that degrade in a specific amount of time, triggering "pop-up" of buoys.

# (C) Commission staff

No update was provided.

# 4. Experimental Fishing Permit (EFP) Phase II

Sonke Mastrup provided an overview on initial efforts and core considerations in developing an EFP program through a two-phase process. Phase I was adopted in October. Initial planning efforts for Phase II, which establishes a comprehensive EFP program consistent with the new law, is now underway. A public workshop to solicit feedback and stakeholder input on potential program components and core considerations is scheduled for January 14, 2020.

# Discussion

Stakeholders asked general questions about how EFPs would be integrated into new fishing opportunities, asked specifically if the EFP program could authorize recreational fishing participants to sell catch to offset research costs, expressed concern with the

evolution of the EFP program, and offered input on how to best structure the EFP program to explore emerging fisheries. Sonke clarified that, consistent with existing regulations, selling sport take would not be allowed by EFPs. He expressed that the comments from stakeholders would help inform the development of the EFP program and could be discussed in greater detail during the January 14 workshop. Co-chair Murray commented that EFPs could be explored in the context of supporting the coastal fishing community project. There was general stakeholder support for the workshop and the opportunities for continued public involvement.

MRC requested that the Department return to the MRC in March 2020 with an update; no action was taken.

# 5. Marine Life Management Act (MLMA) master plan implementation

Debbie Aseltine-Neilson provided a detailed presentation on the ongoing Department efforts to prioritize fisheries for focused management efforts (including FMPs), and presented species prioritization as informed by a productivity and susceptibility analysis (PSA) analysis and an ecological risk assessment (ERA). The Department has completed PSAs for 45 (21 finfish and 17 invertebrate) species and an ERA for 32 (21 finfish and 3 invertebrate) of the 41 species also evaluated under a PSA. While the resulting scores and priority rankings surprised the Department in many ways, they would like to use the rankings presented to the MRC to carry out MLMA master plan implementation efforts to develop scaled management plan.

# Discussion

A discussion between stakeholders and the Department focused on how finfish fisheries were prioritized and how the ranking systems were applied. The MRC co-chairs and stakeholders expressed concern about the ranking results of the PSA and ERA analyses, concern that the ranking does not include all invertebrate species due to ERAs not yet being completed, and concern over the limited use of socio-economic information in species ranking. The Department commented that the ranking system was an attempt to provide transparency about decision making and the thinking behind prioritization, and that socio-economics will be included as one aspect of ongoing management efforts to prioritize fisheries. Craig and Debbie emphasized that the ranking system would be taken, which includes economic considerations. They urge that the process of developing FMPs move forward without excessive fine-tuning of prioritization methodology.

# MRC Recommendation

MRC recommends that the Commission (a) support the species prioritization as developed by the Department and support moving forward to the next steps in the process of prioritizing management efforts; and (b) encourage the Department to complete ERA analyses for remaining invertebrate fisheries as soon as feasible for integration into the species prioritization, and (c) schedule a discussion about the species prioritization list at the December 2019 Commission meeting under the Marine Region update.

# 6. Kelp and algae commercial harvest regulations

Craig Shuman gave an update on the efforts to revise commercial kelp regulations, which have been underway since 2016, and gave an overview of proposed regulatory amendments for seven topics. DFW also identified a proposed regulatory timeline for 2020, with a notice in April, discussion in June, and potential adoption in August. He committed to provide a more specific overview of proposed regulations to the Tribal Committee and the MRC in January and March 2020, respectively.

# Discussion

Elizabeth Pope clarified that revising the proposed timeline to have notice occur in June, rather than April, would allow for detailed proposal updates to occur at the March MRC while allowing time to meet required document deadlines. She also noted that commercial regulations only require a two-meeting process, rather than three. Craig supported the two-meeting approach with notice at the June Commission meeting. One commenter expressed concern that regulations incentivise overharvest and kelp waste.

#### MRC Recommendation

MRC recommends that the Commission schedule the commercial kelp and algae harvest management rulemaking for notice in June and potential adoption in August, to be preceded by Department presentation of detailed proposals to the Tribal Committee in January and the MRC in March.

# 7. Red Abalone Fishery Management Plan (FMP)

Alexis Jackson gave an update on the efforts to develop triggers for a de minimis fishery option across three geographic management zones to include in the red abalone FMP. She also discussed additional management considerations of the project team, evaluations underway by the modeling team, and next steps for the project and modeling teams.

Jack Likins gave a brief presentation focused on the specific question of red abalone management zones, noting issues he identified as pros and cons for the red abalone fishery to be divided into three versus four zones, and suggested they be further evaluated by the modeling team.

#### Discussion

There was discussion between MRC co-chairs, Department staff and stakeholders about the management zone options, including the benefits and the use of potential indicators. A commenter suggested raising the size limit and multiple stakeholders encouraged the use of the diving community to gather data. Commissioner Murray asked why there were not more Department reference sites further north (Humboldt and Del Norte counties). The Department identified that weather, water conditions, and staff/funding resources were all limiting factors for establishing additional reference sites, although a local citizen science program could be a realistic approach to gathering more data in Humboldt and Del Norte counties. The MRC co-chairs expressed support for the ongoing efforts.

No action was taken.

# 8. Kelp restoration and recovery efforts

James Ray gave a presentation introducing a proposal to develop a statewide kelp restoration strategy which will be called the "kelp restoration strategy toolkit" to aid restoration and recovery efforts. The toolkit will be a suite of science-based restoration projects to fill data gaps and evaluate on-the-ground restoration activities such as purple urchin control. Once the toolkit and potential policy considerations in promoting kelp recovery are developed, they will be first applied to the north coast and then, if successful, applied at a statewide level. The Department identified spring 2020 as the time when projects would be in place and stated that there would be opportunities for interested stakeholders to engage.

# Discussion

Tristan McHugh of Reef Check California gave a presentation under public comment about an urchin removal project being conducted by Reef Check in Monterey under a Department scientific collecting permit. Representatives from several partner agencies, including OPC and Greater Farallones National Marine Sanctuary, as well as partner stakeholders attended to inform MRC of the efforts their respective agencies/groups were coordinating and/or funding to contribute to kelp restoration.

There was significant support from stakeholders for the Department to develop the toolkit and/or a series of actions to promote kelp restoration and recovery. Several stakeholders commented on the ecological devastation to the kelp forest from extreme urchin densities, noted the ecological importance of kelp and expressed a desire to restore kelp for future generations. Several stakeholders offered to assist the Department on future restoration projects.

MRC requested that DFW return in July 2020 with an update; no action was taken.

# 9. Whale and turtle protections in the recreational Dungeness crab fishery

Consistent with the MRC recommendation approved by the Commission in August 2019, Ryan Bartling presented an overview of potential management strategies to manage marine life entanglement risk in the recreational Dungeness crab fishery for discussion and consideration, background context on broader Department efforts to manage entanglement risk in the commercial Dungeness crab fishery, and rationale for supporting changes to recreational fishery regulations to help further reduce risk, including potential inclusion in the habitat conservation plan the Department is developing as part of the incidental take permit (ITP) package for submission to the federal government in 2020.

The Department proposes six "common-sense" management strategies for the recreational fishery, with a rulemaking timeline of April notice, June discussion, and adoption in August, to be in effect by the November 2020 season opening.

#### Discussion

There was support for some but not all the management measures proposed by the Department. Recreational representatives requested additional outreach and focused dialogue opportunities from the Department and expressed concern that taking a proposal to the Commission too soon could limit in-depth discussion opportunities. A commercial representative lent support to recreational representatives by noting the issues both the commercial and recreational fisheries would face if an ITP was not secured should there be future entanglements. He supported the proposed Department regulatory solutions as well as additional outreach and discussion opportunities to the recreational community.

Craig Shuman addressed the concept of equity between the recreational and commercial fisheries noting that relatively few regulations were currently applied to the recreational fishery which could lead to an overall fishery closure in case of entanglement. Additional discussion on the value of data collected through a report card system, potential ropeless gear solutions, and Commission authority over the recreational fishery were all addressed. The Department committed to additional outreach efforts outside Commission and MRC meetings to more actively engage stakeholders.

#### MRC Recommendation

MRC recommends that the Department return to the Commission at its December meeting with a suite of options to be analyzed for potential regulatory actions that may include part or all of the fishery management proposals as presented in the Department report at today, and supports scheduling a rulemaking on a timeline commencing with notice in April 2020.

# 10. Coastal Fishing Communities Project

Maggie McCann gave a presentation and update on the MRC coastal fishing communities project and staff efforts to meet previous MRC direction. Following the July MRC meeting, staff posted the final *Draft Staff Synthesis Report on California Coastal Fishing Communities* and hosted a stakeholder work session to develop a coast fishing community definition. Maggie confirmed that no additional public comments had been received on the report and presented the MRC with two coastal fishing community definitions developed by stakeholders for consideration.

#### Discussion

One commenter identified that she wanted additional time to review the report in that she had not reviewed it since July. Co-chair Murray confirmed that the report had been complete and posted since July and that its potential adoption at the November meeting had been a point of detailed stakeholder discussion at the July MRC meeting. She also reiterated that the report was a summary of meetings and adopting it as final would allow the coastal fishing communities project to move forward to a more substantive action-based level. There was general support for adopting the report as final and discussion on the two draft fishing community definitions.

# MRC Action

MRC adopted the staff synthesis report as final, adopted a draft working definition of a coastal fishing community for the purpose of the coastal fishing communities project, and directed staff to return to the MRC with additional information on the ten options outlined in the staff synthesis report. The adopted definition:

"A coastal fishing community is a social, cultural, economic, and/or place-based group whose members are fishermen dependent upon or engaged in commercial, recreational, or subsistence fishing to meet the social or economic needs of the community; this includes, but is not limited to, businesses and organizations that depend on or support fishing by providing goods and services, including infrastructure.

A fishing community may be a subset or member of larger or associated coastal communities which have an interest in and/or are dependent on healthy ocean ecosystems."

#### 11. Future agenda items

(A) Review work plan agenda topics and timeline

Elizabeth Pope gave an overview of the MRC work plan and confirmed that updates on topics requested during the meeting would be added to the schedule with Commission approval. She also recommended, based on follow up with stakeholders and commercial representatives, that the stakeholder presentation on "commercial fisheries not under Commission authority" be removed from the work plan. There was support from commercial stakeholders and the co-chairs to remove the item.

(B) Potential new agenda topics for FGC consideration

No new agenda topics were identified.

#### MRC recommendation:

MRC recommends that the Commission remove the referred subject of "commercial fisheries not under Commission authority" from the MRC work plan based on follow up with stakeholders and commercial representatives.

# Adjourn

The committee adjourned at approximately 3:10 p.m.

# California Fish and Game Commission Marine Resources Committee (MRC)

# 2020 Work Plan: Scheduled Topics and Timeline for Items Referred to MRC by the California Fish and Game Commission Updated February 10, 2020

		March anta Rosa	July In Clemente	Vovember Monterey		
Торіс	Category	S	Sa			
Planning Documents						
MLMA Master Plan for Fisheries-Implementation Updates	Master Plan Implementation	Х	х	х		
Abalone FMP/ARMP Update	FMP	X/R	Х	Х		
Aquaculture Programmatic Environmental Impact Report (PEIR)	Programmatic Plan	X/R				
Regulations						
Aquaculture Lease Best Management Practices (BMP) Plan Requirements (timing TBD)	DFW-FGC Project					
Experimental Fisheries Permit Phase II	DFW-FGC Project	Х				
Kelp & Algae Commercial Harvest	DFW Project	X/R				
Whale and Turtle Protections in the Management of the Dungeness Crab Fisheries (Department informational update)	DFW Project	х				
Spiny Lobster FMP implementing regulations (added Feb 2019; timing TBD)	DFW Project					
Emerging/Developing Management Issues						
Aquaculture State Water Bottom Leases: Existing & Future Lease Considerations (timing TBD)	Lease Management Review					
Cowcod Recovery (added Oct 2019)		Х				
Grunion			х			
Kelp Restoration and Recovery (added Nov 2019)			Х			
Special Projects						
California's Coastal Fishing Communities	MRC Project		Х			
KEY: X Discussion scheduled X/R Recommendation developed and moved to FGC						