

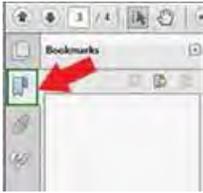
California Fish and Game Commission
Marine Resources Committee
Meeting Binder



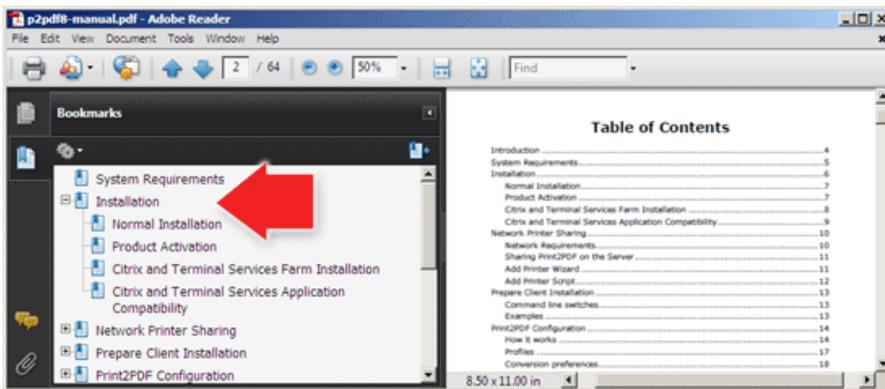
November 14, 2018
Sacramento

EASY GUIDE TO USING THE BINDER

1. Download and open the binder document using your Adobe Acrobat program/app.
2. If a bookmark panel does not automatically appear on either the top or left side of the screen, click/tap on the “bookmark symbol” located near the top left-hand corner.



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



4. We suggest leaving open the bookmark panel to help you move efficiently among the staff summaries and numerous supporting documents in the binder. It’s helpful to think of these bookmarks as a table of contents that allows you to go to specific points in the binder without having to scroll through hundreds of pages.
5. You can resize the two panels by placing your cursor in the dark, vertical line located between the panels and using a long click /tap to move in either direction. ←|→
6. You may also adjust the sizing of the documents by adjusting the sizing preferences located on the Page Display icons found in the top toolbar or in the View tab.
7. Upon locating a staff summary for an agenda item, notice that you can obtain more information by clicking/tapping on any item underlined in blue.
8. Return to the staff summary by simply clicking/tapping on the item in the bookmark panel.
9. Do not hesitate to contact staff if you have any questions or would like assistance.

INTRODUCTIONS FOR FISH AND GAME COMMISSION MARINE RESOURCES COMMITTEE

FISH AND GAME COMMISSIONERS

Eric Sklar Co-Chair (Saint Helena)
Peter Silva Co-Chair (Jamul)

COMMISSION STAFF

Melissa Miller-Henson Acting Executive Director
Susan Ashcraft Marine Advisor
Sergey Kinchak Analyst
Leslie Hart Sea Grant State Fellow

DEPARTMENT OF FISH AND WILDLIFE

Randy Lovell Statewide Aquaculture Coordinator
Bob Puccinelli Captain, Law Enforcement Division
Craig Shuman Regional Manager, Marine Region

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

Jenn Eckerle, Deputy Director, California Ocean Protection Council

Jocelyn Enevoldsen, Coastal Resources Coordinator, Heal the Bay

OVERVIEW OF FISH AND GAME COMMISSION COMMITTEE MEETING

- Our goal today is informed discussion to guide future decision making, and, we need your cooperation to ensure a lively and comprehensive dialogue.
- We are operating under Bagley-Keene Open Meeting Act, but the Committee is not a decision making body and only makes recommendations to the full Commission for possible action.
- These proceedings may be recorded and posted to our website for reference and archival purposes.
- Items may be heard in any order pursuant to the determination of the Committee Co-Chairs.
- In the unlikely event of an emergency, please locate the nearest emergency exits.
- Restrooms are located _____.
- As a general rule, requests for regulatory change need to be redirected to the full Commission and submitted on the required petition form, FGC 1, titled “Petition to the California Fish and Game Commission for Regulation Change” (Section 662, Title 14, CCR). However, at the Committee’s discretion, the Committee may request that staff follow up on items of potential interest to the Committee and possible recommendation to the Commission.
- Committee meetings operate informally and provide opportunity for everyone to provide comment on agenda items. If you wish to speak on an agenda item, please follow these guidelines:
 1. Raise your hand and wait to be recognized by the Committee.
 2. Provide your name, affiliation (if any), and the number of people you represent.
 3. Time is limited; please keep your comments precise to give others time to speak.
 4. If several speakers have the same concerns, please appoint a group spokesperson.
 5. If you would like to present handouts or written materials to the Committee, please provide five copies to the designated staff member just prior to speaking.
 6. If speaking during public comment, the subject matter you present should not be related to any item on the current agenda (public comment on agenda items will be taken at the time the Committee members discuss that item).
- **Warning!** Laser pointers may only be used by a speaker doing a presentation.

Commissioners
Eric Sklar, President
Saint Helena

Anthony C. Williams, Vice President
Huntington Beach

Jacque Hostler-Carmesin, Member
McKinleyville

Russell E. Burns, Member
Napa

Peter S. Silva, Member
Jamul

STATE OF CALIFORNIA
Edmund G. Brown Jr., Governor

Fish and Game Commission



Wildlife Heritage and Conservation
Since 1870

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MARINE RESOURCES COMMITTEE

Committee Co-chairs: Commissioner Sklar and Commissioner Silva

Meeting Agenda

November 14, 2018, 9:00 a.m.

Natural Resources Building
Redwood Room, 14th Floor
1416 Ninth Street, Sacramento, CA 95814

This meeting may be audio-recorded.

NOTE: See important meeting procedures and information at the end of the agenda. Unless otherwise indicated, the California Department of Fish and Wildlife is identified as Department. All agenda items are informational and/or discussion only. The Committee develops recommendations to the Commission but does not have authority to make policy or regulatory decisions on behalf of the Commission.

Call to order

1. Approve agenda and order of items

2. Public comment for items not on the agenda

The Committee may not discuss or take action on any matter raised during this item, except to consider whether to recommend that the matter be added to the agenda of a future meeting. [Sections 11125, 11125.7(a), Government Code]

3. Staff and agency updates

Receive updates from staff and other agencies on items of note since the last Committee meeting.

- (A) California Ocean Protection Council
- (B) Department
- (C) Other

4. **California coastal fishing communities project**
Receive staff update and public comments on coastal fishing communities project staff report, and discuss next steps and possible recommendations.
5. **Red Abalone Fishery Management Plan (FMP)**
Discuss next steps in addressing peer review recommendations and completing the FMP.
6. **Shellfish aquaculture best management practices (BMPs)**
Receive update on progress developing a proposed regulation to require BMP plans for state water bottom leases issued by the Commission for purposes of aquaculture, and discuss next steps and possible recommendation.
7. **Offshore marine aquaculture**
Receive Department overview of a programmatic environmental impact report that will evaluate a proposed regulatory framework governing future offshore marine aquaculture in California.
8. **Marine Life Management Act master plan**
Receive Department update on next steps for implementing the 2018 Master Plan for Fisheries.
9. **Lobster Advisory Committee stakeholder report**
Receive presentation from Heal the Bay concerning its report evaluating lessons learned from the Department's Lobster Advisory Committee process, derived from stakeholder surveys.
10. **Future agenda items**
 - (A) Review work plan agenda topics and timeline
 - (B) Potential new agenda topics for Commission consideration

Adjourn

**California Fish and Game Commission
2018-2019 Meeting Schedule**

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

Meeting Date	Commission Meeting	Committee Meeting
December 12-13, 2018	QLN Conference Center 1938 Avenida del Oro Oceanside, CA 92056	
January 10		Wildlife Resources Inland Deserts Regional Office Ontario Large Conference Room 3602 Inland Empire Blvd Suite C-220 Ontario, CA 91764
February 5		Tribal Sacramento
February 6-7	Sacramento	
March 19		Marine Resources California State Parks Mott Training Center 837 Asilomar Blvd Pacific Grove, CA 93950
April 17-18	Los Angeles	
May 16		Wildlife Resources Resources Building Auditorium, First Floor 1416 Ninth Street Sacramento, CA 95814
May 16	Teleconference	
June 11		Tribal Redding
June 12-13	Redding	
July 11		Marine Resources California Department of Parks and Recreation Orange Coast District Office Training Room 3030 Avenida del Presidente San Clemente, CA 92672
August 7-8	Sacramento	
September 5		Wildlife Resources Justice Joseph A. Rattigan State Building 50 D Street Conf. Rm 410 (4th Fl.) Santa Rosa, CA 95404

Meeting Date	Commission Meeting	Committee Meeting
October 8		Tribal San Diego
October 9-10	San Diego	
November 5		Marine Resources Sacramento
December 11-12	Sacramento	

OTHER 2018 MEETINGS OF INTEREST

Wildlife Conservation Board

- November 15, Sacramento, CA

OTHER 2019 MEETINGS OF INTEREST

Association of Fish and Wildlife Agencies

- September 22-25, Saint Paul, Minnesota

Pacific Fishery Management Council

- March 5-12, Vancouver, Washington
- April 9-16, Rohnert Park, California
- June 18-25, San Diego, California
- September 11-18, Boise, Idaho
- November 13-20, Costa Mesa, California

Pacific Flyway Council

- TBD

Western Association of Fish and Wildlife Agencies

- January 3-6, Tucson, Arizona
- July 11-16, Manhattan, Kansas

Wildlife Conservation Board

- TBD (meetings held quarterly in February, May, August, and November in Sacramento)

IMPORTANT COMMITTEE MEETING PROCEDURES INFORMATION

Welcome to a meeting of the California Fish and Game Commission's Marine Resources Committee. The Committee is chaired by up to two Commissioners; these assignments are made by the Commission.

The goal of the Committee is to allow greater time to investigate issues before the Commission than would otherwise be possible. Committee meetings are less formal in nature and provide for additional access to the Commission. The Committee follows the noticing requirements of the Bagley-Keene Open Meeting Act. It is important to note that the Committee chairs cannot take action independent of the full Commission; instead, the chairs make recommendations to the full Commission at regularly scheduled meetings.

The Commission's goal is the preservation of our heritage and conservation of our natural resources through informed decision making; Committee meetings are vital in developing recommendations to help the Commission achieve 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.

SUBMITTING WRITTEN MATERIALS

The public is encouraged to attend Committee meetings and engage in the discussion about items on the agenda; the public is also welcome to comment on agenda items in writing. You may submit your written comments by one of the following methods (only one is necessary): **Email** to fgc@fgc.ca.gov; **mail** to California Fish and Game Commission, P.O. Box 944209, Sacramento, CA 94244-2090; **deliver** to California Fish and Game Commission, 1416 Ninth Street, Room 1320, Sacramento, CA 95814; or **hand-deliver to a Committee meeting**.

COMMENT DEADLINES

The **Written Comment Deadline** for this meeting is **5:00 p.m. on November 1, 2018**. Written comments received at the Commission office by this deadline will be made available to Commissioners prior to the meeting.

The **Late Comment Deadline** for this meeting is **noon on November 9, 2018**. Comments received by this deadline will be marked "late" and made available to Commissioners at the meeting.

After these deadlines, written comments may be delivered in person to the meeting – please bring five (5) copies of written comments to the meeting.

The Committee **will not** consider comments regarding proposed changes to regulations that have been noticed by the Commission. If you wish to provide comment on a noticed item, please provide your comments during Commission business meetings, via email, or deliver to the commission office.

Note: Materials provided to the Committee may be made available to the general public.

REGULATION CHANGE PETITIONS

As a general rule, requests for regulatory change need to be redirected to the full Commission and submitted on the required petition form, FGC 1, titled "Petition to the California Fish and Game Commission for Regulation Change" (Section 662, Title 14, CCR). However, at the Committee's discretion, the Committee may request that staff follow up on items of potential interest to the Committee and possible recommendation to the Commission.

SPEAKING AT THE MEETING

Committee meetings operate informally and provide opportunity for everyone to comment on agenda items. If you wish to speak on an agenda item, please follow these guidelines:

1. Raise your hand and wait to be recognized by the Committee chair or co-chair(s).
2. Once recognized, please begin by giving your name and affiliation (if any) and the number of people you represent.
3. Time is limited; please keep your comments concise so that everyone has an opportunity to speak.
4. If there are several speakers with the same concerns, please try to appoint a spokesperson and avoid repetitive comments.
5. If you would like to present handouts or written materials to the Committee, please provide five copies to the designated staff member just prior to speaking.
6. If speaking during public forum, the subject matter you present should not be related to any item on the current agenda (public comment on agenda items will be taken at the time the Committee members discuss that item). As a general rule, public forum is an opportunity to bring matters to the attention of the Committee, but you may also do so via email or standard mail. At the discretion of the Committee, staff may be requested to follow up on the subject you raise.

VISUAL PRESENTATIONS/MATERIALS

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

1. Electronic presentations must be provided by email by the written materials deadline.
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.

LASER POINTERS may only be used by a speaker during a presentation.

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

2. PUBLIC COMMENT**Today's Item****Information** **Direction**

Receive public comments for items not on the agenda.

Summary of Previous/Future Actions (N/A)**Background**

The Committee generally receives two types of correspondence or comment: Requests for MRC to consider new topics, and informational items. In general, requests for regulatory change need to be directed to FGC and submitted on the required petition form, FGC 1, *Petition to the California Fish and Game Commission for Regulation Change* (Section 662, Title 14, CCR). However, at the discretion of the Committee, staff may be requested to follow up on items of potential interest to the Committee and possible recommendation to FGC.

Significant Public Comments (N/A)**Recommendation**

If the Committee wants to recommend any new future agenda items based on issues raised and within FGC's authority, staff recommends holding for discussion under today's Agenda Item 9, *Future Committee agenda topics*.

Exhibits (N/A)**Committee Direction/Recommendation (N/A)**

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

3. STAFF AND AGENCY UPDATES**Today's Item**Information Direction

Receive updates from FGC staff and agency staff, including the California Ocean Protection Council (OPC) and DFW.

Summary of Previous/Future Actions (N/A)**Background**

This is a standing item for DFW and other government agencies to provide an update on marine-related activities of interest. FGC staff may also provide an update.

- (A) **OPC:** Staff from OPC will provide an update on its once-through cooling grant opportunity, including guidelines and call for proposals, as well as updates on other topics of interest.
- (B) **DFW**
- I. Marine Region: Dr. Craig Shuman, Regional Manager, will provide an update, including an overview of Whale Entanglement Gear Working Group recommendations for the 2018-19 season (Exhibit B1).
 - II. Law Enforcement Division: Captain Bob Puccinelli will provide a marine enforcement update.
- (C) **Other:** This is a placeholder for additional agency and FGC staff updates.
- I. California State Lands Commission (SLC): SLC staff requested to update MRC on a collaborative pilot project in San Diego, but is unable to attend the MRC meeting due to a scheduling conflict. The goal of the pilot project, called the San Diego Ocean Planning Partnership (SDOPP), a partnership between SLC and the Port of San Diego, is to "effectively plan for use of the ocean space and local trust grantee participation in management thereof." A draft report was released in Oct 2018, titled *Draft Preliminary Assessment Report* (Exhibit C1). Public comment on the report closed in Oct; however, it will be discussed at an SLC meeting on Dec 3, 2018 and a San Diego Board of Port Commissioners meeting on Dec 11, 2018.
 - II. FGC staff: Staff will provide an update on items of interest previously before the committee.

Significant Public Comments (N/A)**Recommendation (N/A)****Exhibits**

- B.1 Email from Kelly Sayce, Strategic Earth, with memo from the California Dungeness Crab Fishing Gear Working Group with recommendations, received Oct 16, 2018

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

- C.1 Executive summary for *Draft Preliminary Assessment Report*, dated Fall 2018 (full report available at <https://www.sdoceanplanning.org/draft-preliminary-assessment-report>)

Committee Direction/Recommendation (N/A)

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

4. COASTAL FISHING COMMUNITIES PROJECT**Today's Item**Information Direction

Receive staff update and public comments on coastal fishing communities project staff report, and discuss next steps and possible recommendations.

Summary of Previous/Future Actions

- | | |
|--|--------------------------------------|
| • FGC refers topic to MRC | Feb 11, 2015; Sacramento |
| • MRC discussions, planning, and public meetings | 2015 - 2017; various |
| • Most recent MRC update | Jul 17, 2018; MRC, San Clemente |
| • Today's update and next steps | Nov 14, 2018; MRC, Sacramento |

Background

In early 2015, at the direction of FGC, an MRC discussion regarding fishing communities was initiated following a public request for new fishery access opportunities (see Exhibit 1 for background). Following exploratory discussions with MRC and the public in 2015 and 2016 regarding challenges and needs within California's coastal fishing communities, FGC approved an MRC recommendation to broaden the conversation coastwide through a series of locally-focused coastal fishing community meetings along the California coast.

A total of seven community meetings were held in 2017 and 2018 from Crescent City to San Diego. The meetings offered a venue to more thoroughly explore, from the perspective of specific fishing-dependent coastal communities, current conditions and changes being experienced in ports, constraints on adaptation, and needs for creating future resilience.

At the Jul 2018 MRC meeting, staff presented a staff report that summarized input from the various meetings to identify common themes, port-specific issues, and ideas. The staff report also identified a range of options for potential FGC focus and action in response to community concerns.

Update

Based on MRC recommendation, the staff report was opened for the public's feedback on the report and initial concepts from July 17 to September 24, 2018. There were 14 comment emails and letters with over 75 unique comments received during the public comment period (see "significant public comments" below).

In addition to written comments, staff has engaged in multiple conversations with fishing organizations, environmental non-governmental organizations, state and federal agencies, and academics, which are emerging as potential collaborators to support both the goals of FGC as well as those of fishing communities. Today, staff will provide an update on these project activities and opportunities, and discuss options for possible next steps.

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

Significant Public Comments

- Fourteen written comments on the staff report were received, providing over 75 individual comments. The comments provide valuable feedback on both the content of the report, by suggesting edits and additions, and the potential recommendations within the report. Comments are summarized in Exhibit 3 and linked to the individual comments.
- Several organizations have offered to support staff in an effort to help enhance and strengthen the report contents, through developing a more thorough report. Recommendations to strengthen content include providing an analysis of potential actions, assess which entities are appropriate to fill the action, identify what other organizations are already doing, and evaluate/recommend those actions in which FGC could invest its limited resources.
- A joint comment letter from five fishery associations and representatives urged MRC to hold off discussing “next steps and possible recommendations” until the Mar 2019 MRC meeting. The goal is to ensure that the extensive public comment, and additional input derived from ongoing discussion with FGC staff members, can progress and be integrated into a more detailed report that will help refine the next steps and possible recommendations (Exhibit 4).

Recommendation

FGC staff: Direct staff to: (1) continue to broaden conversations with state and federal agencies, non-governmental organizations, and fishing organizations, in a broader effort to explore how to best support fishing communities; (2) integrate input from public comments into a more in-depth report, including analysis of options and potential partnerships; and (3) schedule a discussion of the report, next steps and possible recommendations for the Mar 2019 MRC meeting.

Exhibits

1. Staff summary from Nov 4, 2015 MRC meeting (for background purposes only)
2. Staff report on 2017-2018 California coastal community meetings, dated Jul 2018
3. Public comments received on staff report, dated Nov 8, 2018
4. Joint letter from Pacific Coast Federation of Fishermens Associations, California Wetfish Producers Association, West Coast Fisheries Consultants, Alliance of Communities for Sustainable Fisheries, and Commercial Fishermen of Santa Barbara, received Oct 31, 2018

Committee Direction/Recommendation

The Marine Resources Committee recommends that staff take the following next steps based on outcomes and ideas generated through fishing community meetings and public comments on the staff report: _____.

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

5. RED ABALONE FISHERY MANAGEMENT PLAN (FMP)**Today's Item****Information** **Action**

Discuss next steps in addressing peer review recommendations and completing the red abalone FMP.

Summary of Previous/Future Actions

- FGC supported red abalone FMP development per MRC recommendation Oct 8, 2014; Mt. Shasta
- DFW updates to MRC on FMP process 2015-2017; MRC meetings
- Received update on FMP process Dec 6-7, 2017; San Diego
- Discussed FMP scope and content Apr 18-19, 2018; Ventura
- Last update on FMP schedule Aug 22-23, 2018; Fortuna
- Received peer review results for draft FMP Oct 17, 2018; Fresno
- **Today MRC discusses next steps Nov 14, 2018; MRC, Sacramento**

Background

Since 2014, DFW has been developing a red abalone FMP for adoption by FGC, with regular updates to MRC and FGC on the process, progress, and stakeholder input. DFW abalone project staff have also kept FGC and MRC updated on the unprecedented environmental conditions on the north coast and subsequent biological impacts to abalone, and how those are affecting the FMP process and possible provisions. For a more detailed background on the process to date, see Exhibit 1.

This year, attention has focused on two proposed harvest control rules (HCRs) for the FMP: the DFW-recommended HCR, and an alternate HCR option proposed by The Nature Conservancy using stakeholder-developed metrics. FGC supported analysis of both HCRs through an external, independent scientific peer review convened by the California Ocean Science Trust (OST), with support from the California Ocean Protection Council.

At the Oct 2018 FGC meeting, OST presented results and recommendations from the peer review (Exhibit 2). In particular, the peer review panel highlighted that a management strategy employing a combination of aspects from each HCR may be more robust against uncertainty under different fishery conditions, and recommended an analysis to determine how to best integrate them. FGC referred to MRC for this meeting a discussion of next steps and possible pathways to respond to the peer review recommendations. DFW will provide an update.

Significant Public Comments (N/A)**Recommendation**

FGC staff: Clarify DFW feedback on peer review recommendations, including alternative approaches to evaluating HCR integration, and schedule follow-up discussion for Dec FGC meeting.

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

Exhibits

1. Staff summary for Agenda Item 11, Oct 17, 2018 (for background purposes only)
2. OST red abalone FMP peer review report, dated Oct 2018

Committee Direction/Recommendation (N/A)

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

6. SHELLFISH AQUACULTURE BEST MANAGEMENT PRACTICES**Today's Item**Information Direction

Receive update on progress developing a proposed regulation to require BMP plans for state water bottom leases issued by FGC for aquaculture, and discuss next steps and possible recommendation.

Summary of Previous/Future Actions

- | | |
|--|--------------------------------------|
| • FGC discussed possible BMPs | Feb 10-11, 2016; Sacramento |
| • FGC supported BMPs rulemaking approach | Jun 22-23, 2016; Bakersfield |
| • MRC discussed aquaculture debris | Jul 21, 2016; MRC, Petaluma |
| • MRC update on BMPs development | Jul 20, 2017; MRC, Santa Rosa |
| • Update on management activities | Mar 6, 2018; MRC, Santa Rosa |
| • Draft BMP categories presented to MRC | Jul 17, 2018; MRC, San Clemente |
| • Today's update | Nov 14, 2018; MRC, Sacramento |

Background

FGC has the authority to lease state water bottoms to any person for the purpose of conducting aquaculture in marine waters of the state, with the exception of Humboldt Bay and San Diego Bay, under terms agreed upon between FGC and the lessee (sections 15400 and 15405, California Fish and Game Code). While general regulations in Section 237 govern all aquaculture leases, terms are established for individual state water bottom lease areas in a lease agreement.

Statewide there are currently 17 active FGC-issued aquaculture leases, of which 16 culture shellfish species and one cultures algae. In recent years, public attention has focused on shellfish aquaculture practices and stewardship on certain aquaculture leases, particularly related to marine debris. In 2016, FGC approved a staff recommendation to address the concerns through a rulemaking that would require an FGC-approved shellfish aquaculture BMPs plan for each lease site. The regulation would identify what must be addressed in a shellfish aquaculture BMPs plan in order to obtain FGC approval to engage in shellfish aquaculture activities on a state water bottom lease issued by FGC.

Since Jul 2016, MRC has received input and tracked progress on aquaculture BMPs project activities (see Exhibit 1 for more background). Regional public meetings to solicit input were jointly held by DFW and FGC staff in Jul 2017 near Tomales Bay, and in May 2018 in Santa Barbara, with broad public and industry engagement.

At the Jul 2018 MRC meeting, DFW and FGC staff presented initial BMP categories derived from public meetings, public comments, and staff research, and recommended the categories be used to draft requirements language for public and MRC review. Based on a resulting MRC recommendation, FGC directed staff in Aug 2018 to "draft proposed requirements for issues to address within BMPs plans for state water bottom leases based on the concepts presented by

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

staff, provide opportunity for public review of the draft proposal, and schedule for MRC review and possible recommendation in Nov 2018.

Following the Aug meeting, DFW and FGC staff developed proposed BMP requirements for all categories, and distributed them electronically on Oct 24, 2018 (Exhibit 2) for comment with a request for feedback by Nov 2. On Oct 25, 2018, staff held a public meeting in Santa Rosa to review the proposed requirements and options, and heard public discussion and input (Exhibit 3). Comments provided in writing through Nov 2, 2018 are provided in exhibits 4-7.

At this meeting, staff will present a summary of comments received at the Oct 25, 2018 meeting and in writing.

Significant Public Comments

- Approximately 25 public meeting attendees (aquaculturists, community members, academics, and agency staff) provided oral comments with different perspectives on the BMP requirements proposal developed by staff.
- An aquaculture lease holder offered written comments on the staff proposal: (1) supports the general categories; (2) recommends revising language to employ a non-prescriptive approach to regulatory language, which provides flexibility and adaptation of operational practices; (3) opposes mandatory marking of gear and boats, but offers alternatives for gear identification; (4) for compliance assessment, prefers DFW conduct inspections rather than more expensive third parties and suggests cost-sharing equitably amongst growers; and (5) asks for recognition of the good stewardship practices the growers have already put into place (Exhibit 4).
- A local advocate and an environmental non-profit offered written comments on the staff proposal: (1) requested an extension of time to review proposed requirements; (2) generally supports proposal; (3) supports marking of gear and boats; (4) supports regular assessments and data collection; (5) supports mandatory, unannounced inspections by DFW and FGC and/or a third party; and (6) proposed additions to the BMPs (exhibits 5 and 6).
- A local resident near Tomales Bay offers 11 BMPs, some of which are new or more stringent than those in the staff proposal (Exhibit 7).
- Many excellent suggestions are made for revisions within the proposed BMP requirements language. For example, feedback from growers and DFW field staff highlighted approaches to enhance feasibility for implementation and compliance.
- Several commenters at the public meeting, and in writing requested additional time to provide input on the staff-developed requirements language.

Recommendation

FGC staff:

Authorize staff to (1) integrate public input into the proposed BMP requirements; (2) provide additional opportunity for public input; (3) develop recommendations for areas of divergence

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

among stakeholders; and (4) provide a final proposal and options, if needed, for MRC review and possible recommendation in Mar 2019.

Exhibits

1. Staff summaries from Jul 20, 2017 and Jul 17, 2018 MRC meetings (for background purposes)
2. Agenda for BMPs public meeting in Santa Rosa, Oct 25, 2018
3. DFW and FGC staff-proposed requirements for shellfish aquaculture lease BMP plans, Oct 24, 2018
4. Email from Terry Sawyer, Hog Island Oyster Company, received Nov 2, 2018
5. Email from Ashley Eagle-Gibbs, Marin Environmental Action Committee, received Nov 2, 2018
6. Email from Richard James, received Nov 2, 2018
7. Email from Cynthia Harland, received Oct 18, 2018

Committee Direction/Recommendation

MRC recommends that FGC authorize staff to revise the proposed requirements for issues to address within BMPs plans for state water bottom leases based on public input; provide opportunity for public review of the revised draft proposal; develop options for areas of divergence among interest groups, if needed; and schedule for MRC review and possible recommendation in March 2019.

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

7. OFFSHORE MARINE AQUACULTURE**Today's Item****Information** **Direction**

Receive DFW overview of a programmatic environmental impact report (PEIR) that will evaluate a proposed regulatory framework governing future offshore marine aquaculture in California.

Summary of Previous/Future Actions

- FGC referral to MRC Apr 18-19, 2018; Ventura
- **Today's overview of PEIR** **Nov 14, 2108; MRC, Sacramento**

Background

FGC has authority to lease state water bottoms for purposes of conducting aquaculture in marine waters of the state (Section 15400 and 15405, Fish and Game Code). Accordingly, shellfish aquaculture and seaweed culture are currently conducted on 17 active leases across the state; currently there is no commercial offshore marine finfish aquaculture practiced in California.

While FGC is authorized to issue leases for finfish aquaculture, the Fish and Game Code prescribes that FGC may not do so until it considers how it will address specific concerns, identified in statute, within a new regulatory framework using the analysis of a PEIR. The statute also directs DFW, in consultation with the Aquaculture Development Committee (established through Fish and Game Code Section 15700), to complete the PEIR for existing and potential commercial aquaculture operations if certain funding conditions are met.

The aquaculture PEIR has been envisioned and worked on periodically over the course of more than 10 years, but there is currently a renewed focus on bringing the analysis to completion. In light of the renewed focus, DFW will provide an update on activities, progress, and status of the PEIR for marine aquaculture; this will include a projected timeline that reflects work accomplished and milestones that lie ahead in the near future.

Significant Public Comments (N/A)**Recommendation (N/A)****Exhibits (N/A)****Committee Direction/Recommendation (N/A)**

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

8. MARINE LIFE MANAGEMENT ACT MASTER PLAN**Today's Item****Information** **Direction**

Receive DFW update on next steps for implementing the 2018 master plan for fisheries.

Summary of Previous/Future Actions

- | | |
|---|--------------------------------------|
| • FGC adopted 2018 master plan | Jun 20-21, 2018; Sacramento |
| • Last update on master plan implementation | Jul 17, 2018; MRC, San Clemente |
| • Today's update on implementation | Nov 14, 2108; MRC, Sacramento |

Background

The Marine Life Management Act (MLMA) of 1998 directed DFW to submit to FGC for approval a master plan that specifies the process and resources needed to prepare, adopt, and implement fishery management plans (FMPs) for sport and commercial marine fisheries managed by the State, with input from fisheries participants, marine conservationists, scientists, and other interested parties (Fish and Game Code Section 7073). Pursuant to the MLMA requirement, in 2001 FGC adopted *The Master Plan: A Guide for the Development of Fishery Management Plans* (Master Plan), developed by DFW with stakeholder input.

After over 15 years of MLMA implementation founded on Master Plan guidance, DFW initiated a three-year effort to review the plan and new implementation tools. In Jun 2018, FGC adopted an updated plan, *2018 Master Plan for Fisheries: A Guide for Implementation of the Marine Life Management Act* ([2018 Master Plan](#)).

Based on public comments and discussion recognizing the importance of 2018 Master Plan implementation planning and transparency, FGC referred this as a topic to MRC and requested it become a standing agenda item to discuss implementation steps, priorities, and opportunities associated with the 2018 Master Plan, and receive regular DFW updates. Today is the second discussion of implementation since adoption; DFW staff will provide an update on implementation efforts.

Significant Public Comments (N/A)**Recommendation (N/A)****Exhibits (N/A)****Committee Direction/Recommendation (N/A)**

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

9. LOBSTER ADVISORY COMMITTEE STAKEHOLDER REPORT**Today's Item**Information Direction

Receive presentation from Heal the Bay concerning its report evaluating lessons learned from the Department's Lobster Advisory Committee (LAC) process, derived from stakeholder surveys.

Summary of Previous/Future Actions

- FGC granted stakeholder request to present at MRC Aug 22-23, 2018; Fortuna
- **Today's informational presentation** **Nov 14, 2018; MRC, Sacramento**

Background

In 2012, a stakeholder group called the Lobster Advisory Committee (LAC) was convened by DFW to provide recommendations, advice, and feedback to FGC and DFW related to developing a fishery management plan (FMP) for California spiny lobster. LAC met nine times between Jun 2012 and Sep 2013, and regular updates on progress were provided to MRC. The Spiny Lobster FMP was adopted by FGC in Apr 2016.

At the Aug 2018 FGC meeting a staff member from Heal the Bay shared during public comment that its organization had completed a report (Exhibit 1) to evaluate lessons learned from the LAC stakeholder process, and requested the opportunity to present outcomes at the next MRC meeting. Heal the Bay's staff member served as a member of LAC and indicates that the report and associated LAC stakeholder engagement survey were developed to elucidate lessons learned during the stakeholder process to develop the Spiny Lobster FMP. FGC granted the request to schedule an informational item at the Nov 2018 MRC meeting (today).

Key outcomes in the report include nine "lessons learned," which were developed from LAC members' responses to survey questions about their personal experiences as stakeholders in the Spiny Lobster FMP development process. Today, Heal the Bay staff will present an overview of its findings, which it hopes can inform future FMP stakeholder engagement processes as the updated Marine Life Management Act Master Plan is implemented.

Significant Public Comments (N/A)**Recommendation (N/A)****Exhibits**

1. *Stakeholder Engagement in Fishery Management Plan Development: Lessons Learned from the Lobster Advisory Committee Process*, dated Oct 2018

Committee Direction/Recommendation (N/A)

COMMITTEE STAFF SUMMARY FOR NOVEMBER 14, 2018

10. FUTURE AGENDA ITEMS**Today's Item**Information Direction

Review upcoming agenda items scheduled for the next and future MRC meetings, hear requests from DFW and interested stakeholders for future agenda items, and identify new items for consideration.

Summary of Previous/Future Actions

- FGC approved MRC recommendations Aug 22-23, 2018; Fortuna
- FGC approved MRC agenda and work plan Oct 17, 2018; Fresno
- **Today's discussion** **Nov 14, 2018; MRC, Sacramento**
- Next meeting Mar 19, 2018; MRC, Pacific Grove

Background

Committee topics are referred by FGC and scheduled as appropriate. FGC-referred topics and their current schedule are shown in the MRC work plan, Exhibit 1. MRC agendas currently include several complex and time-intensive topics under development. The committee has placed emphasis on issues of imminent regulatory or management importance, and thus consideration of new topics will require planning relative to existing committee workload.

MRC Work Plan and Timeline

Agenda topics identified for the Mar 2019 MRC meeting include:

1. Agency updates
2. Aquaculture Programmatic Environmental Impact Report (PEIR) update
3. Annual sport fishing regulations vetting
4. Kelp and algae commercial harvest regulations review update
5. California's coastal fishing communities project

Discuss and Recommend New MRC Topics

Today provides an opportunity to confirm timing for any additional referred topics, and to identify any potential new agenda topics to recommend to FGC for referral to MRC.

Significant Public Comments (N/A)**Recommendation**

FGC staff: Consider updates to project scheduling, and consider any potential new topics to recommend for FGC referral to MRC for evaluation.

Exhibits

1. MRC work plan, dated Nov 5, 2018
2. FGC perpetual timetable for regulatory actions, dated Oct 18, 2018

Committee Direction/Recommendation (N/A)

From: Kelly Sayce <kelly@strategiearth.com>
Sent: Tuesday, October 16, 2018 12:24 PM
To: FGC
Cc: Miller-Henson, Melissa@FGC; Ashcraft, Susan@FGC; Rachele Fisher
Subject: Dungeness Crab Fishing Gear Working Group: 2018-19 Recommendations
Attachments: Whales_WorkingGroupRecommendationsMemo_October2018_FINAL.pdf

Dear President Sklar,

The California Dungeness Crab Fishing Gear Working Group (Working Group) is pleased to submit the following recommendations to support the state's efforts to reduce the risk of whale entanglements in California Dungeness crab fishing gear (see memo attached).

The Working Group has continued to develop and fine-tune the Risk Assessment and Mitigation Program (RAMP) in anticipation of the 2018-19 fishing season and has developed a number of recommendations to request funding for priority projects to further the data available to inform the RAMP, establish a transparent process to prioritize research and development projects, and strengthen coordination between state and federal agencies, as well as between agencies and other fixed-gear fisheries.

The Working Group looks forward to continuing to engage with the California Fish and Game Commission, California Department of Fish and Wildlife, Ocean Protection Council, Joint Committee on Fisheries and Aquaculture (the Legislature), Pacific States Marine Fisheries Commission, Dungeness Crab Task Force, and others to inform Working Group discussions and share Working Group outputs. The Working Group welcomes the opportunity to have direct communications at any time about the RAMP and continues to be committed to providing the state with recommendations to support thriving whale populations along the West Coast and a thriving and profitable Dungeness crab fishery.

Information about the Working Group and its activities, including summaries, memos, members list, background materials, and other resources are available at <http://www.opc.ca.gov/whale-entanglement-working-group>. Please do not hesitate to contact Kelly Sayce at 310-738-2665 or kelly@strategiearth.com with any questions about the Working Group and its efforts.

All our best,
Kelly Sayce and Rachele Fisher
Working Group Administrative Team

--

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CALIFORNIA DUNGENESS CRAB FISHING GEAR WORKING GROUP

RECOMMENDATIONS MEMO

TO: California Ocean Protection Council, Deborah Halberstadt, Executive Director
California Department of Fish and Wildlife, Charlton Bonham, Director
California Fish and Game Commission, Eric Sklar, President
Joint Committee on Fisheries and Aquaculture, Mike McGuire, Chair
Pacific States Marine Fisheries Commission, Randy Fisher, Executive Director

CC: California Ocean Protection Council, Jenn Eckerle, Deputy Director
California Department of Fish and Wildlife, Craig Shuman, Marine Region Manager
California Fish and Game Commission, Melissa Miller-Henson, Deputy Director
California Fish and Game Commission, Susan Ashcraft, Marine Advisor
National Marine Fisheries, Protected Resources Division, Penny Ruvelas, Long Beach Branch Chief
National Marine Sanctuaries, West Coast Regional Office, Lisa Wooninck, Policy Coordinator
Pacific States Marine Fisheries Commission, Dave Colpo, Senior Program Manager
California Dungeness Crab Task Force (DCTF), DCTF Administrative Team
Marine Mammal Commission, Dennis Heinemann, Senior Advisor, Fisheries and Ecosystems
Oregon Whale Entanglement Working Group, Amanda Gladics, Facilitator
Washington Whale Entanglement Working Group, Fran Recht, Facilitator

FROM: California Dungeness Crab Fishing Gear Working Group

DATE: October 15, 2018

RE: Updates and 2018-19 recommendations to advance the Risk Assessment and Mitigation Program (RAMP) and reduce whale entanglements

Since September 2015, the California Dungeness Crab Fishing Gear Working Group (Working Group), a diverse multi-stakeholder group, has been taking steps to identify and reduce risk of whale entanglements in Dungeness crab fishing gear. During the 2017-18 fishing season, the Working Group piloted a Risk Assessment and Mitigation Program (RAMP) to support the state in working with experts—agencies, fishermen, researchers, representatives from environmental organizations (NGOs), and others—to identify and assess elevated levels of entanglement risk, explore information needs, and determine the need for management options that could be recommended to CDFW.

Formalizing the RAMP: With the recent passage of [Senate Bill \(SB\) 1309](#), which will become effective on January 1, 2019, the Director will have authority to restrict the take of Dungeness crab in a timely manner—and lift any restrictions in a similar manner once significant risk has abated—in areas where the fishery is posing significant risk of marine life entanglement, as determined in consultation with the Working Group. SB 1309 also requires CDFW to adopt regulations to evaluate and respond to potential risk of marine life entanglement on or before November 1, 2020 in consultation with the Working Group and other stakeholders. The RAMP is intended to guide this effort, and during the August and September 2018 meetings, CDFW presented draft rulemaking language based on the RAMP's evolving structure and

function to the Working Group for review and feedback. CDFW will continue to develop the RAMP rulemaking package for public review in advance of November 1, 2020.

2017-2018 RAMP Pilot: Since the last recommendations memo in January 2018, the Working Group met on April 23-24, 2018, August 1-2, 2018, and September 25-26, 2018 to consider lessons learned from the 2017-18 RAMP pilot. Based on this learning, an updated 2018-19 RAMP has been developed to include:

- The Working Group evaluated and fine-tuned the risk factors (rate of entanglements, forage/ocean conditions, whale concentrations, and fishing dynamics) based on lessons learned. These updates include convening the Working Group more frequently to evaluate risk particularly in the spring months, including new guiding questions for most risk factors to more readily assess risk, and specific recommendations requesting funding to strengthen the RAMP data inputs (see recommendations below).
- In addition to humpback whales, the 2018-19 RAMP will be expanded to consider blue whales and has developed relevant draft criteria and guiding questions to pilot during the upcoming season. The Working Group requested to receive information about other marine species, including fin whales, gray whales, and leatherback sea turtles, starting in late 2018 to gain a better understanding of how these marine species will be considered within future iterations of the RAMP.
- The RAMP will utilize and consider both systematically and opportunistically collected data related to fishing dynamics and the distribution and concentrations of other humpback, blue whales, and other marine life to help inform the RAMP's development and implementation. These data may come from aerial surveys, vessel surveys, data loggers, crowd-sourced information, and other means.
- Recognizing the experience that the Working Group has gained on the issue of whale entanglements in California, the agencies (CDFW, National Marine Fisheries Service (NMFS), Ocean Protection Council (OPC) and the United States Coast Guard) may convene the Working Group to consider circumstances of increased rate of entanglements in California waters in fishing gear other than California Dungeness crab.

Surface Gear Rulemaking: During its April 2018 meeting, the Working Group provided input on CDFW's draft rulemaking package that would restrict the amount of surface gear used at different depths. This rulemaking is based on the voluntary Best Practices Guides that have been in place during the 2016-17 and 2017-18 fishing seasons. It is anticipated this rule will be in place for the 2018-19 fishing season. For additional information, visit <https://www.wildlife.ca.gov/Notices/Regulations/Crabbing-Gear>. The Working Group is currently updating the 2018-19 Best Practices Guide to reflect the new surface gear regulations, once approved.

RECOMMENDATIONS

The following recommendations were identified by the Working Group over the course of three meetings in 2018. This information is intended to help inform decision makers and those interested in this issue, including other fixed gear fisheries.

Recommendation #1. Request to the OPC to Direct General Funds for RAMP Operations and Support, Including Data Gathering, Gear Innovation, and Evaluation. The Working Group appreciates the dedicated efforts that the state, the Legislature, and its partners have taken to secure long-term funding to support the RAMP. With the recent designation of \$5.5M from the General Fund to reduce the risk of entanglement

of marine life in fixed fishing gear, the Working Group recommends the following be considered by the OPC as priorities for the allocation of this available funding:

- *RAMP Operating Funds* - The Working Group recommends the OPC allocates a portion of the General Fund allocation to fully support RAMP coordination and operations, including the consideration of stipends for Working Group participants.
- *Solar Logger Pilot Project* - A solar logger pilot project was implemented during the 2017-18 fishing season to test the tool's ability to inform the overlap of fishing gear and whale distribution. The Working Group recommends expanding the solar logger pilot beyond the existing 12 commercial vessels to include up to 40 commercial volunteers (3-4 per port/port complex) from Port San Luis/Avila to Crescent City. This could include boats that may be involved in pre-season domoic acid and quality testing, and dually permitted vessels in Oregon and Washington. The Working Group also supports the expansion of this pilot project to involve up to 20 whale watch boats and/or Commercial Fishing Passenger Vessels (CPFVs) from Port San Luis/Avila to Crescent City. This project is anticipated to provide valuable information for both the whale concentrations and fishing dynamics risk factors, including further learning about the relationship and overlap of whale distribution and fishing activities. Additionally, this project will help inform the best way forward to scale the use of data loggers for fishing and whale watch vessels to inform a comprehensive view of fishing and whale dynamics. The Working Group also recommends CDFW, Pacific States Marine Fisheries Commission (PSMFC), and other experts collaborate to evaluate solar logger data from commercial fishing vessels and whale watching operations and attempt to assess and map the overlap of fishing and whale distributions.
- *Synthesis of Available Whale Data* - The Working Group recommends the Whales Project Team and/or other experts synthesize available whale watch data (e.g., Monterey Bay Whale Watch) and compare this information with other whale sightings datasets (e.g., systematic vessel and aerial surveys) to evaluate the utility of whale watch data (local and regional) in informing the RAMP. This project will also assess the relationship between various whales, fishing, and forage data sets from recent years and improve integration and interpretation of whale watching observations and other sightings data in the RAMP and inform prioritizing these survey methods in the future, including resource allocation decisions. This project will inform the evaluation of the whale/forage model, which is currently in development.
- *Automation of Forage/Ocean Conditions Data* - The Working Group sees great value in Dr. Jarrod Santora's work tracking forage/ocean conditions to understand predicted and current whale distribution patterns. The Working Group recommends Dr. Jarrod Santora develop a process to automate the forage/ocean data analysis and sharing capabilities, in combination with integrating his expert opinion and interpretation of the analyses. The project will further define and quantify the objective criteria to guide the RAMP, expedite the process to analyze and share available data, and increase transparency within the fleet regarding how the evaluation of this risk factor is conducted.
- *Additional RAMP Information Gathering Efforts* - The Working Group recommends maintaining the flexibility to conduct both planned and responsive data gathering efforts, including, but not limited to, aerial and vessel surveys, to inform the RAMP factors in response to elevated entanglement risk.
- *Gear Innovations Research & Development Projects* - The Working Group recommends the OPC allocate a portion of the General Funds to support shovel-ready gear innovations projects to test during Spring 2019, based on established criteria that will be developed by the Working Group

and/or CDFW (see Recommendation #3). The Working Group also recommends the OPC consider funding the development of a process to assist the state in forwarding research and development projects in the longer term (see Recommendation #3).

The Working Group would like to be informed and, as appropriate, involved in the design of the above recommended projects.

Recommendation #2. Improve Risk Assessment Factor Criteria for Blue Whales and Take an Opportunistic Approach to Data Gathering for Other Marine Life: The Working Group recommends the Whales Project Team continue to refine and inform the draft objective criteria and guiding questions developed for blue whales for the Working Group's review and consideration throughout the 2018-19 season. The Working Group also recommends gathering relevant information about other marine life (e.g., gray whales, fin whales, leatherback turtles, etc.) for consideration in the RAMP. Where possible, the Working Group requests that agencies and other experts provide this additional information to help inform the RAMP's development. The Working Group will continue to consider and be responsive to other marine species during the 2018-19 RAMP.

Recommendation #3. Establish a Transparent and Clear Process to Assist the State in Prioritizing Research and Development Projects: The Working Group recommends establishing a transparent and clear process to assist the state in identifying, assessing, and prioritizing proposed research and development projects to help further inform the RAMP, and specifically gear innovations that could be included in the management measures toolbox (MMT) of the RAMP ([here](#)). As a first step, the Working Group recommends convening a workshop in 2019 to review, discuss, and evaluate the merits of new and existing proposals and develop a longer-term strategy for implementing a research and development program. Based on the success of PSMFC in convening past similar workshops, the Working Group recommends the OPC work with PSMFC to convene California, Oregon, Washington, East Coast, and international fishermen, innovators, and others to consider innovative ideas. While needing additional discussion, the Working Group recommends the OPC, PSMFC, and CDFW develop a request for proposals (RFP) process that would identify criteria to help with prioritizing projects (e.g., innovation must be economical, enforceable, safe, reliable, fishable, reduce entanglement frequency, functioning prototype, etc.).

Recommendation #4. CDFW to Prioritize Engaging with Other Fixed-Gear Fisheries: With the passage of SB 1309, the Working Group recommends CDFW work with other fixed gear fisheries (both commercial and recreational) to address the complex issue of wildlife entanglements. The Working Group recommends that CDFW, fishermen, and others consider the tools developed by the Working Group has developed to date, including best fishing practices concepts, surface gear rulemaking concepts, gear marking ideas (e.g., double-sided tags, rope markings, buoy markings, etc.), and RAMP concepts to help other fisheries develop tools that are specific to their fishing practices. The Working Group welcomes the opportunity to share its work on this issue with other fisheries per CDFW's needs as these communications take place. Additionally, the Working Group recommends the report from the August 29-30, 2018 Forensic Review Workshop, which included a robust discussion about gear marking, be made available to other fixed gear fisheries for consideration.

Recommendation #5. CDFW Presentation to the Fish and Game Commission (FGC) and/or Marine Resources Committee (MRC): The Working Group recommends that CDFW present information about the RAMP to the FGC and/or MRC during the 2018-19 season. The Working Group also recommends CDFW initiate discussions with the FGC and/or MRC about reducing entanglement risk in the recreational Dungeness crab fishery and other fixed gear fisheries.

Recommendation #6. Improved Inter-agency Coordination Between CDFW and the Coast Guard: The Working Group recommends that CDFW and the Coast Guard develop a Memorandum of Understanding (MOU), or update an existing MOU, to help with inter-agency RAMP coordination. This would include, but not be limited to, the Coast Guard appointing a representative to serve on the RAMP's agency body, to work together to coordinate aerial surveys using Coast Guard aircrafts/vessels and to explore available Coast Guard technologies that may help reduce entanglement risk, and establish a process to communicate RAMP management measures (voluntary/mandatory) via the Coast Guard's 'Broadcast Notice to Mariners' radio channel. Additionally, Working Group participants look forward to working with the Coast Guard to coordinate, design, and carry out pilot aerial surveys to test out protocols to collect data to use in the RAMP.

The Working Group looks forward to continuing to engage with the OPC, CDFW, FGC, Joint Committee on Fisheries and Aquaculture (the Legislature), DCTF, and others to inform Working Group discussions and share Working Group outputs. The Working Group welcomes the opportunity to have direct communications at any time about the RAMP and continues to be committed to providing recommendations to support thriving whale populations along the West Coast and a thriving and profitable Dungeness crab fishery.

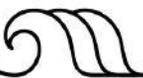
Information about the Working Group and its activities, including summaries, memos, members list, background materials, and other resources are available at <http://www.opc.ca.gov/whale-entanglement-working-group>. Questions, ideas, and feedback about the RAMP can be directed to info@cawhalegroup.com or 707-832-4088.

The administration of the Working Group is supported by the California Ocean Protection Council and The Nature Conservancy, with in-kind contributions from the California Department of Fish and Wildlife and the National Marine Fisheries Service.

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DRAFT
Preliminary Assessment Report

(Discussion draft available until October 19, 2018)

SAN DIEGO
OCEAN PLANNING
PARTNERSHIP 



Prepared by staff from:

California State Lands Commission

Port of San Diego

With support from:

Nexus Planning & Research

Special thanks to:

The many stakeholders, ocean users, and interested members of the public who dedicated time to participate in this process and engage in the meaningful dialogue with the San Diego Ocean Planning Partnership.

Unless otherwise noted, all photos were contributed by staff of the California State Lands Commission or the Port of San Diego.

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Executive Summary

The land and resource management responsibilities for the California State Lands Commission (Commission) and the Port of San Diego (Port) are rooted in the Public Trust Doctrine as both agencies are entrusted by the State of California to responsibly balance a diversity of uses on tidelands and submerged lands, including commerce, navigation, fisheries, recreation, and environmental stewardship. The Commission and the Port entered into a Memorandum of Agreement (MOA) in October 2016 to form the San Diego Ocean Planning Partnership (SDOPP).

The purpose of this first phase of the pilot project, the Preliminary Assessment, is to learn from stakeholders and the general public about their uses, values, and challenges in the ocean space, as well as their past experiences with similar planning processes, and to compile publicly available data into the informational Preliminary Assessment Report as well as a public-facing, interactive web viewer. The intent of the SDOPP is not to establish zones in the ocean space for specific uses, diminish the significance or purpose of previously established areas, nor promote specific ocean uses over others. Rather, it is a dialogue that promotes collaboration.

To support the proposed purpose, the Commission and the Port set out to: 1) identify current and emerging uses in the ocean space offshore San Diego County, 2) understand the relationships between these uses, and 3) receive feedback on how to best perform the ocean planning process. Specifically, the Partners embarked on the first phase of this pilot project, the Preliminary Assessment, through two parallel efforts:

Public engagement: Through focused stakeholder interviews, small group meetings, and larger public meetings, the Partners engaged with stakeholders and local Tribes to hear directly about their experiences with the ocean space and ocean planning. This information is presented within this report (the Preliminary Assessment), which summarizes input received about ocean uses, challenges with ocean uses, benefits and concerns about ocean planning, and suggestions for managing the process and moving forward.

Data collection: The Partners collected and compiled publicly available, marine- and coastal-related spatial data, which will culminate into a Web Mapping Application. This will be a web-based, user-friendly site where users can easily view multiple layers of these data at one time in one place.

Potential next steps for the SDOPP are informed by the public engagement feedback and data collection. It is important to note that the potential next steps may be carried out by the Partnership or as an individual agency (i.e., the Commission or the Port). For example, the Partnership may decide to revise the goals of the SDOPP or provide periodic assessments in the San Diego ocean space. The Commission would most likely take responsibility for implementing an “early engagement” framework to assist with its lease applications. Additionally, the Commission would be responsible for updating the Web Mapping Application. With strong regional relationships, the Port could help to continue and enhance the local stakeholder outreach as part of a long-standing comprehensive public engagement approach associated with long-range planning efforts. In future phases of the SDOPP, or as individual agencies, the Partners will remain committed to transparent and robust public engagement and data collection, and continue to strive towards collaborative stewardship of the Public Trust on entrusted or granted state tidelands and submerged lands.

8. FISHING COMMUNITIES

Today's Item

Information

Action

Explore the developing concerns about the sustainability and vitality of California's fishing communities and ports and what, if any, role FGC has in this issue.

Summary of Previous/Future Actions

- MRC initial discussion Mar 4, 2015; Marina
- **Today's scoping** **Nov 4, 2015; Ventura**

Background

Eleven public ports and numerous harbors dot the coast and waterways of California. Adjacent coastal communities that are reliant on certain fisheries and the fish harvesting industry are often referred to as "fishing communities," at various scales. Fishing communities depend on a number of conditions and players to sustain their vitality.

Over the past 15-plus years, many fishing communities have been confronted by challenges associated with changes in fishing or economic opportunity. Examples of challenges include fisheries management changes (e.g., management responses to address overfishing, overcapitalization and excess capacity in fisheries; loss of fish habitat, and fishery/area closures for species listed under the Endangered Species Act or federal rebuilding plans); environmental fluctuations in diversity, abundance, and distribution in fish assemblages, including those associated with climate change; and economic challenges related to increased competition in the global marketplace, and the recent economic downturn in general. The destabilizing effect of these challenges, and fishing/coastal community vitality and resilience, is a topic of active conversation along the Pacific coast, and nationwide (see exhibits 1-4).

FGC referred this agenda topic to MRC in 2014 following a petition from three northern California fishermen for new permits to fish for a more southerly species that had shown up in unusually high numbers due to warm water conditions. The petitioners, as well as supporters from northern California fish businesses and city representatives, made their case in support of the petitions based on the economic needs of local coastal communities reliant on fishing. While the specific request could not be granted without a lengthy regulatory and stakeholder process, FGC asked MRC to explore the issue of coastal community needs and the highlighted concerns.

Originally scheduled for discussion at the March 2015 MRC meeting, time constraints only allowed for an initial and very limited discussion. Today, staff will initiate further conversation with an overview of "fishing communities," guiding principles from the MLMA, and a report on current initiatives underway in California at the federal and local levels. One of the goals today is to hear from community members themselves, who are vital to clarifying the scope of the issues relevant to California fishing communities (see exhibits 5 and 6 for some perspectives originally submitted for the March 2015 MRC meeting).

STAFF SUMMARY FOR NOVEMBER 4, 2015**Significant Public Comments**

1. Assemblyman Jim Wood has expressed concerns about the needs of northern California coastal communities (Exhibit 5)
2. The California Wetfish Producers Association (CWPA) supports discussing the big big-picture issue of sustainable harbor communities (Exhibit 6)

Recommendation

Solicit public input on the scope of issues of concern regarding California's fishing community vitality and resilience, and evaluate if there are areas where FGC can play a role. What types of views, values, and concerns do different stakeholders, including coastal fishery participants, currently hold, and what can contribute to resilient fishing communities? What is the role that fishermen and local communities can play, that FGC and its policies can play, and how can stakeholders effectively engage and represent the concerns of their communities to help create more efficient and effective management?

Exhibits

1. California Sea Grant Extension Program webpage on fishing communities (<https://caseagrant.ucsd.edu/project/discover-california-commercial-fisheries/fishing-communities>), accessed Feb 26, 2015
2. Ocean Protection Council webpage on preserving California's fisheries (<http://www.opc.ca.gov/2010/01/preserving-californias-fisheries/>), accessed Oct 28, 2015
3. Maine Sea Grant, Best Practices for Working Waterfront Preservation: Lessons Learned from the Field, Mar 2013
4. National Working Waterfront Network webpage for Trinidad Harbor case study (http://www.wateraccessus.com/case_print.cfm?ID=31), accessed Oct 28, 2015
5. Letter from Assembly Member Jim Wood, received Jan 26, 2015
6. Email from Diane Pleschner-Steele, CWPA, received Feb 12, 2015

Committee Direction

Provide guidance on next steps to consider fishing community needs.

California Fish and Game Commission Marine Resources Committee

Staff Report on California Coastal Fishing Communities Meetings

July 2018

At the direction of the California Fish and Game Commission (Commission) and the Marine Resources Committee (MRC), Commission staff hosted a series of coastal fishing communities meetings to receive public input on issues of concern affecting the vitality and resilience of California's fishing communities, and the areas in which the Commission can play a role to foster greater stability and long-term vitality. This report provides a brief background on the impetus for this project, an overview of the coastal fishing meetings and questions posed to participants, a summary of key findings, and initial ideas generated from the meetings for MRC to consider preparing fishing communities for future resilience. The information is intended to support MRC discussion and guidance on potential options and approaches to prioritize for further development and public input.

Background

In 2014, the Commission received a petition from three commercial fishermen in northern California requesting new fishery access adjacent to their port. While the request was to obtain small-scale experimental access to a restricted access fishery for a species that had become more locally abundant due to climate-driven shifts in distribution, the expressed intent was to support north coast harbors and fishing communities. The Commission requested that MRC schedule a discussion about the request and the community needs behind it. Following exploratory discussions with MRC in 2015, FGC directed staff to hold a public meeting to more comprehensively explore the concerns and needs of fishing communities.

A statewide meeting was held in Petaluma in July 2016. Over 40 members of the public attended, including commercial and recreational fishermen, fish processors, city and county elected officials and staff, environmental non-governmental organizations (NGOs), social scientists, and California Sea Grant staff. Participants emphasized that there were many changes and needs in their communities that could not be met under current management and policy conditions, and urged the State to more directly recognize community goals and the impact of different options on those communities while pursuing conservation and utilization goals in its fisheries management decisions. The meeting revealed that there was value in continuing the discussion; the Commission subsequently approved an MRC recommendation to broaden the conversation coast-wide through a series of locally-focused coastal fishing community meetings across the California coast. The goal of these meetings was to identify challenges facing individual coastal fishing communities and discuss strategies for building more resilience in the face of external stressors that included changing climate, ocean and economic conditions.

Seven locally-focused coastal fishing community meetings were held along the coast from June 2017 through June 2018 in Smith River, Fort Bragg, Montara/Half Moon Bay, Monterey, Atascadero, Ventura and San Diego. Attendance at each meeting ranged from 15-35

members of the public. The meetings offered a venue to more thoroughly explore, from the perspective of specific fishing-dependent coastal communities, current conditions and changes being experienced in different ports, constraints on adaptation, and needs for creating future resilience. The meetings were not only intended to inform the Commission, but to draw directly from the experience and expertise of community members to help generate ideas and potential pathways forward to adapt fishing practices or permitting structures in the face of changing fisheries and ocean conditions.

Coastal Fishing Community Meeting Highlights

The coastal fishing community meetings were structured to include an introduction from Commission staff and participating commissioners. Each of the five commissioners was able to attend at least one meeting. Staff provided an overview of the Commission's role in implementing the State's vision for managing the State's commercial and recreational fisheries, the Commission's authority to set policies and regulations for fisheries in California's state waters (0-3 miles from shore), and answers to questions from the audience. For several of the meeting, port profiles were prepared and distributed to support the discussions (see Appendix B).

Group Discussion

At each fishing community meeting, staff overviews were followed by a full group discussion organized around a progression of exploratory questions to solicit input on:

- 1) The unique challenges faced within each fishing community;
- 2) How fishermen are adapting to these challenges;
- 3) The ideal vision for the future of each port; and
- 4) How the Commission can respond to help address challenges, facilitate adaptation, and support the future vision within the Commission's mandates and authorities.

Unique Challenges (Question 1)

The following is a synopsis of the perspectives shared by fishing community members about the unique challenges facing their communities. The answers to the questions were used to draw general themes as seen across the state; specific responses and regionally-specific perspectives regarding unique challenges to each port are found in Appendix A.

- Fisheries Management Changes and Access

A repeated theme was "lack of access", whether this referred to availability of fishing grounds, adequate harvest levels, permits, or cost of permits. While these themes are explored further below, many challenges were attributed to the State's policy on restricting access. The main challenge that was presented is limitations on access to existing fisheries due to current fishing access and permit structures and constraints under the Commission's restricted access policy. This policy created a limited entry structure of specific fisheries and fisheries management decisions that have eroded flexibility within communities. This has occurred by reducing participation, prioritizing large operations, and allowing privately owned permits for a public resource. Meeting participants understood that in 1999, when the restricted access policy was adopted,

many of California's fisheries were overcapitalized and both ecologically and economically unsustainable as vessels became larger and faster, greatly increased fishing power and hold capacity, and used a wide variety of electronic innovations to find and catch fish. Simultaneously, fishermen increased knowledge of the behavior of target species within their trade. The goal of the restricted access policy was to address a fishery management problem and implement an effective solution to restrict fishing effort so that the "race for fish" ended. However, conditions have changed substantially in the past 20 years and, as of a result of state policy, coupled with federal fisheries management responses, fishing fleets in many port areas have greatly decreased and subsequently port infrastructure has declined. A change in policy could lead to adaptation of current management strategies and thus coastal fishermen have prioritized fisheries access policy as the highest concern for sustaining fishing communities.

- **Changing Climate and Ocean Conditions, and Environmental Impacts on Fisheries**

Varying environmental conditions have had both individual and cumulative on fisheries and coastal communities, particularly associated with climate change and changing ocean conditions. Marine heat waves; species distribution shifts; increased interactions with protected species; increased frequency and severity of storms; kelp forest ecosystem imbalance resulting from multiple stressors; ocean acidification; sea level rise; reduced productivity of spawning and rearing waters and biogenic habitat; and biotoxins and harmful algal blooms, have been detrimental to several fisheries in different ways. Extreme ocean events have occurred at an unprecedented magnitude and frequency. Participants shared their experience about unique impacts fishing communities will endure as productivity, health, and distribution of target marine species change, affecting their economic livelihoods. These events and associated uncertainty have served to expose challenges in adapting under the current management structure.

- **Loss of Historic Fisheries**

Fishing communities are still experiencing the impact of the loss of historic fisheries that occurred due factors such as decreased fish stocks and constraints to fishing seasons (e.g., salmon), catch levels (nearshore), or available fishing grounds (rockfish conservation areas) to support stock rebuilding plans. Implementation of "fisheries rationalization" and capacity reduction plans such as federal groundfish trawl individual transferable quotas (ITQs), and implementing state restricted access programs in California with new qualification criteria for "initial permit issuance" met its goals but had some unintended consequences: loss of locally-held catch quota or previously-held permits, shrinking of fishing portfolios, loss of small scale open access options and other constrained opportunities for accessing existing fisheries or developing new fishery opportunities.

- **Flexibility to Tailor Fishing Opportunities to Port-Specific Conditions**

A clear message across the meetings was that communities are seeking opportunities to adapt fishing to current conditions in their ports. In some areas, the loss of infrastructure previously associated with large volume fisheries means that communities need to adapt to smaller volume-based fishing operations compatible

with remaining infrastructure, including storage and ice facilities. Small fishing communities reported that they have a difficult time advocating for their access needs and competing with higher-value fishing organizations that can pay for professional fishery advocates. With climate change, fishermen see opportunities for “pop-up fisheries” for potentially ephemeral but now-locally-available fish. Community members emphasized the importance of managers recognizing that fishing opportunities for a port can change markedly and advocated for collaborative development from the bottom up with fishermen, processors, agency representatives, and researchers to tailor fishing opportunities when different opportunities for new access arises.

- *Deteriorating Infrastructure*

Since variable catches are not consistent enough to retain infrastructure, port infrastructures are deteriorating. Many fishermen have expressed frustrations about the lack of resources or facilities to accomplish their work. Many ports are losing docks, ice machines, storage, and fuel facilities. There were overwhelming requests for actions that would enhance infrastructure to save fishing communities.

- *Retaining Local Markets*

Fishing communities are faced with the challenge of retaining local markets for fish products since they experience competition with non-California product importations. Sometimes after a fishery closure, markets may fill the product gap with imported product and they do not tolerate variable catch. There is an increased demand for buying local fish, yet fishermen have limited access and struggle to meet the demand.

- *Complex Regulations (both State and Federal)*

Many fishermen experience difficulty with the existing management structure complexity and in deciphering regulations. There are different regulations for nearshore versus offshore, it is challenging to interpolate legal boundaries, and party boats have to know and understand regulations for all species. Many fishermen have also expressed the lack of simple information clearing houses and the struggle of complying with demands of federal regulation.

- *Permit Availability and Costs*

Due to the restricted access policy, there are permit transferability constraints and/or high costs to purchase permits. If permits are available, most are sold on the open market and are significantly more expensive. Furthermore, permits are often designed for higher vessel capacity instead of small scale opportunities.

- *Recruitment of New/Young Fishermen*

Due to the high cost of entry into the fishery, there is a shrinking fleet and lack of young fishermen entrants. With a limited career trajectory for young fishermen, there may not be enough fishermen in the future to keep commercial fisheries running and jeopardize food security. Furthermore, cultural knowledge within fisheries will be lost with the retirement of older fishermen.

- *Data Gaps in Fishery Management*

There are currently data gaps in fishery management that prohibit new management decisions to be made. Fishermen are frustrated with the current stock assessment process. As a result of this issue, fishermen want to use their wealth of knowledge and engage in filling the research gap by collecting the necessary data to contribute to more effective management decisions.

- *Competing Uses*

Fishing communities are threatened by a variety of alternative competing uses. These include spatial uses in ocean waters overlapping with fishing grounds including potential aquaculture farms, alternative energy facilities such as offshore wind farms, and desalination plants. There is also competition for onshore space utilization associated with gentrification including repurposing commercial fishing docks for yachts and pleasure boats, conversion of storage warehouses into breweries or restaurants, etc. Competing uses often generate higher income than commercial fish landings; ports that have maintained commercial fishing facilities and docks have often done so through intentionally planning and prioritization of the non-monetary value of fishing to their community and maintaining its cultural heritage, while in other ports the fishing industry is seeking ways to champion that purpose.

Current Adaptation Strategies (Question 2)

A number of the key concerns highlighted during the group discussions associated with changing conditions and constraints on creative adaptation. Participants were specifically asked how they adapt when the key fisheries in which they engage are no viable or are closed. Responses included:

- Shifting geographic location from local communities based on seasons or resource availability (home port vs. away ports)
- Redirecting focus from primary fisheries to secondary or different fisheries (e.g., fishermen turned to squid and sablefish in Half Moon Bay during salmon crash)
- Seek jobs outside of fishing
- Charter sport fishing boats: Switch to ecotourism and whale watching expeditions

Future Vision (Question 3)

Participants were asked to describe not only what changes they have seen in and around their ports over the past 20 years, but also what they envision for their ports to be like 20 years from now. Responses included:

- Prioritization and support for fisheries from harbors and ports in the form of: offloading resources; local markets; reserved storage space for fishing boats and equipment; rebuilt waterfront infrastructure to support fishing activities
- Streamlined permitting process, with more regionally-focused permit structures
- Permit fishing for multiple species at different scales of operation

- Community co-ops, where fishermen agree to sell all landed catch to one place and profits are split amongst fishers who participate in the co-op
- Recreational and commercial fisherman participation in tagging/collecting data (sampling)
- Fishermen included in marine protected area collaboratives
- Increased education of commercial fishing
- Flexibility in fisheries management
- Lower license costs
- Electronic representations of the current fishing regulations at each port
- Modernization of facilities

Potential Commission Actions (Question 4)

Finally, participants were asked what policies or regulation changes they would like to see the Commission develop to help adapt to uncertain conditions and meet future goals for their ports. Responses included:

- Re-evaluate how FGC approaches restricting access to fisheries - open small-scale and community based fishing access
- Adopt a fisheries policy that states that the Commission supports a future with California commercial fisheries and will consider needs fishing communities in its decision-making
- Grant new fishing permits in existing fisheries (e.g., squid, pink shrimp) or open new fisheries opportunities (e.g., box crab, octopus) to expand long-term fishing opportunities
- Encourage young fishermen/new entrants to join fishing communities. Ideas shared included:
 - Adopt an apprenticeship program
 - Create incentives for participation
 - Establish a lower cost “apprentice” or “entry level” commercial fishing permit with a lower fee and opportunities to learn and leverage resources from experienced fishermen
 - Promote pier fishing to bring young fishermen into the industry
- Permit transferability. Ideas shared included:
 - Redistribute retired permits to other fishers, family members, and/or apprentices (young fishermen/new entrants)
 - Make permits more easily transferrable within an apprenticeship program (e.g., no fee, lower fees)
 - Create community permit banks to purchase permits
- Allow twelve-month sport fishing licences from the date of purchase
- Develop a fishing community sustainability plan at state level

- Recommend that the California Department of Fish and Wildlife (CDFW) conduct stock assessments for all fished species
- Re-examine historical policies and their impacts on coastal fishing communities
- Implement adaptive management in the Marine Life Protection Act (MLPA)
- Implement artificial reefs to provide more fish habitat and fishing opportunities
- Increase stability and local control by tying permits to ports or restricting permit transfers to in-state or regional area (re: groundfish trawl ITQ)
- Engage more directly in PFMC meetings either via coordination/input to CDFW representatives, or directly
- Employ fishermen to collect data to fill information gaps and enhance management and opportunity
- Adopt a principle on not importing seafood

Staff Recommendations: Initial Concepts for Potential Development

Input from fishing communities of potential supportive actions generally fell into fisheries management/regulatory actions (“Management”), changes to existing policies (“Policy”), or actions outside of Commission policy and regulation (i.e., “Other”). Staff recommends that MRC consider recommending to the Commission a broad range of options, both within the Commission’s policy and regulatory authority, as well as considering how to extend beyond these core functions into other areas of influence. The initial list of potential actions highlights possible areas of focus, which can be used to evaluate and prioritize what the Commission will choose to address following public input and feedback.

1. *Develop and adopt a policy on coastal fishing communities:* Consider developing a new policy related to coastal fishing communities for Commission adoption.
2. *Review the Commission’s policy on restricted access commercial fisheries:* Review how the policy has been applied since it was adopted in 1999 – where it was applied (or not) to specific fisheries, how the policy performed at meeting the fishery objectives, unintended consequences in fishing communities, and whether any objectives have changed that warrant possible changes to the policy. This complex policy includes 21 individual sub-policies across 9 unique topic areas.
3. *Identify specific projects to test new approaches:* Work with stakeholders and partners to develop small-scale projects to test new approaches or departures from the restricted access policy. Consider small-scale fishing opportunities in particular, designed to fill information gaps.
4. *Engage legislative staff to pursue adjustments to laws as ideas are refined, through vehicles such as the current fisheries omnibus bill.*
5. *Direct staff to increase engagement and coordination with sister agencies on management decisions affecting California:* Include PFMC, CDFW staff representing California interests at PFMC, California Coastal Commission, etc.
6. *Explore/research possible community-based adaptable fishery structures (e.g., community permit banks or risk pools):* Explore options for community-organized

structures that provide for adaptable responses within the community and could include co-management responsibilities. Consult with partner organizations and possibly convene an experts' workshop; this may require legislative or regulatory frameworks to accommodate such avenues.

7. *Explore filling data needs through collaborative research and data collection:* Work with CDFW on identifying data gaps and possible scientific information that could be gathered through collaborative research or experimental fishing between partner entities and fishermen.
8. *Survey communities, commercial and recreational fishers, and processors about their priorities for Commission focus.*

For all of these potential actions, and any others identified by MRC or the Commission, staff will need to develop a work plan to clarify goals/objectives and identify specific next steps. Staff recommends that a more detailed discussion about the initial concepts for potential development, and potential recommendations to the Commission, be held at MRC's November 14, 2018 meeting in Sacramento.

APPENDIX A: Common General and Port-Specific Challenges

Common General Challenges

- Loss of access to historical fishing grounds, beach, and piers
- Restricted access
 - Limited access to local resources
 - Existing permit structure within state managed fisheries (permits are often for large-scale operations)
 - Results in transient existence of fleets and fishermen
 - Fishery and area closures
 - No access to areas where species have recovered
 - Cannot compete with imported fish sold at lower prices
 - Limited market and economic value
 - Demand for buying local is high
 - Decreased profitability with increased fish taxes
 - Decreased food system viability
 - Seasonal closures limiting access to markets
 - Increased fishing fees reduces fishing opportunities
- Limited career trajectory for young fishermen
 - Shrinking fleet and lack of young fishermen entrants
 - High cost of entry
 - Cultural knowledge lost with the retirement of older fishermen
 - Not enough fishermen to feed people (food security)
- Deteriorating infrastructures
 - Loss of docks, ice machines, storage, and fuel facilities
 - Variable catches aren't consistent enough to retain infrastructure
- Environmental impacts
 - Climate change (e.g., species distribution shifts, marine heat waves, loss of biogenic habitat)
 - Coastal erosion
 - Diseases and human health risks (e.g., harmful algal blooms)
 - Drought
- Permit transferability constraints and/or costs to purchase
- Difficulty in deciphering regulations
 - Different regulations for nearshore versus offshore
 - Lack of simple information clearing houses
 - Difficult to interpolate legal boundaries
 - Conflicting regulations between federal and state laws (e.g., for shark fin ban)

- Data gaps in fisheries management
 - Stock assessment process needs revision for all fished species
 - Lack of data
- Competing uses
 - Marine spatial planning initiatives (e.g., aquaculture impacts on port dynamics, offshore wind energy)
 - Competition with onshore businesses (e.g., restaurants)

Port-Specific Challenges

North Coast

- General:
 - Problems related to reallocation of federal groundfish individual transferable quota (ITQs) to outside of California
 - Competition with Oregon for processing capabilities and market
 - Small communities have a difficult time advocating for their access needs
 - e.g., FGC denying requests that fishermen believe are available, such as issuance of experimental squid permits or new pink shrimp permits)
 - Restrictions on nearshore fishing due to Pacific Fishery Management Council (PFMC) limits
- Smith River:
 - No credit for closures of yelloweye rockfish (constrains all other groundfish catch)

Central Coast

- Half Moon Bay:
 - Fishing is concentrated in nearshore areas and no access to deep reef
 - Need regulation for tier allocation (e.g., crab and salmon)
 - Layout of rockfish conservation areas are arbitrary and difficult to decipher
 - Limited access to chilipepper rockfish since a special permit is required
- Monterey:
 - Over-regulation of groundfish and fishing grounds constrained by rockfish conservation areas
 - Loss of California halibut trawl grounds in Monterey Bay waters
- San Luis Obispo:
 - Trident Winds' proposal for offshore wind energy development project
 - Potential impact on fishable area
 - Fishing between windmills is a safety issue
 - Impact of wind energy cables on fishing

South Coast

- General:
 - Increase in marine mammal populations (e.g., sea lions, otters)
- Santa Barbara:
 - Moratorium on abalone fishing. Still being impacted by closure of commercial

abalone fishery.

- Ventura:
 - Redevelopment process that reduces commercial and recreational fishery access to the harbor
 - Difficulty in determining legal sheephead size when lengths shrink after being filleted
 - Sea cucumber trawl fishing needs a time limit
 - Increased harbor business costs
 - Lack of money to dredge harbor mouth
 - Lack of lingcod data for management decisions
- San Diego:
 - Lost fishing access due to Shelter Island ramp construction
 - Tijuana River sewage spills polluting fishery
 - Transboundary issue
 - Difficulty in importation process from Mexico due to recreational fishing possession regulation in California
 - Need to expand hatchery program to include halibut and yellowtail

Appendix B: Fishing Community Profiles for Select Ports

The following pages include profiles of commercial and some recreational fisheries for recent years in the following port areas:

- Fort Bragg
- Bodega Bay
- San Francisco
- Half Moon Bay
- Morro Bay Area
- Santa Barbara Channel Area

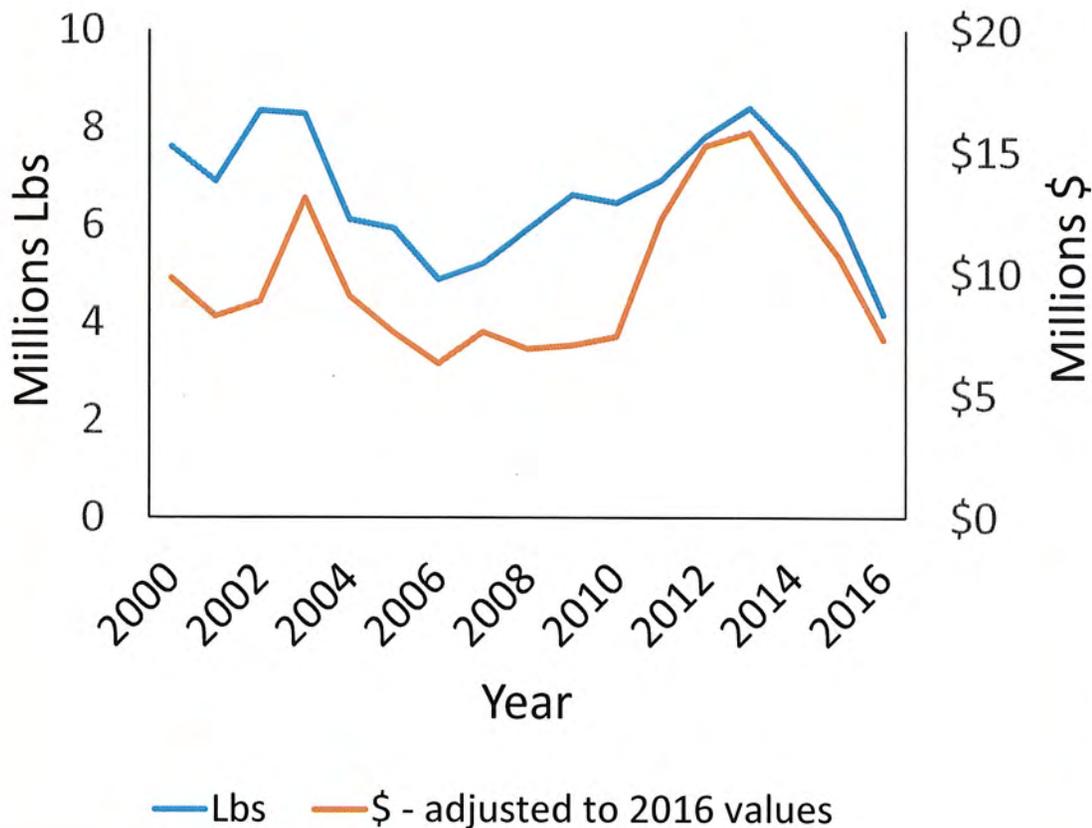
Fort Bragg FISHING COMMUNITY PROFILE

~7 million lbs
average
annual
landings

246
Commercial
Fishing
Vessels

8 Commercial
Passenger
Fishing Vessels
(8 year average)

TOTAL COMMERCIAL LANDINGS AND VALUE: 2000-2016



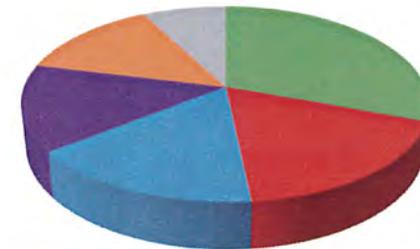
TOP 6 SPECIES BY VALUE (\$)

5 Year Average: 2012-2016



TOP 6 SPECIES BY WEIGHT (LBS)

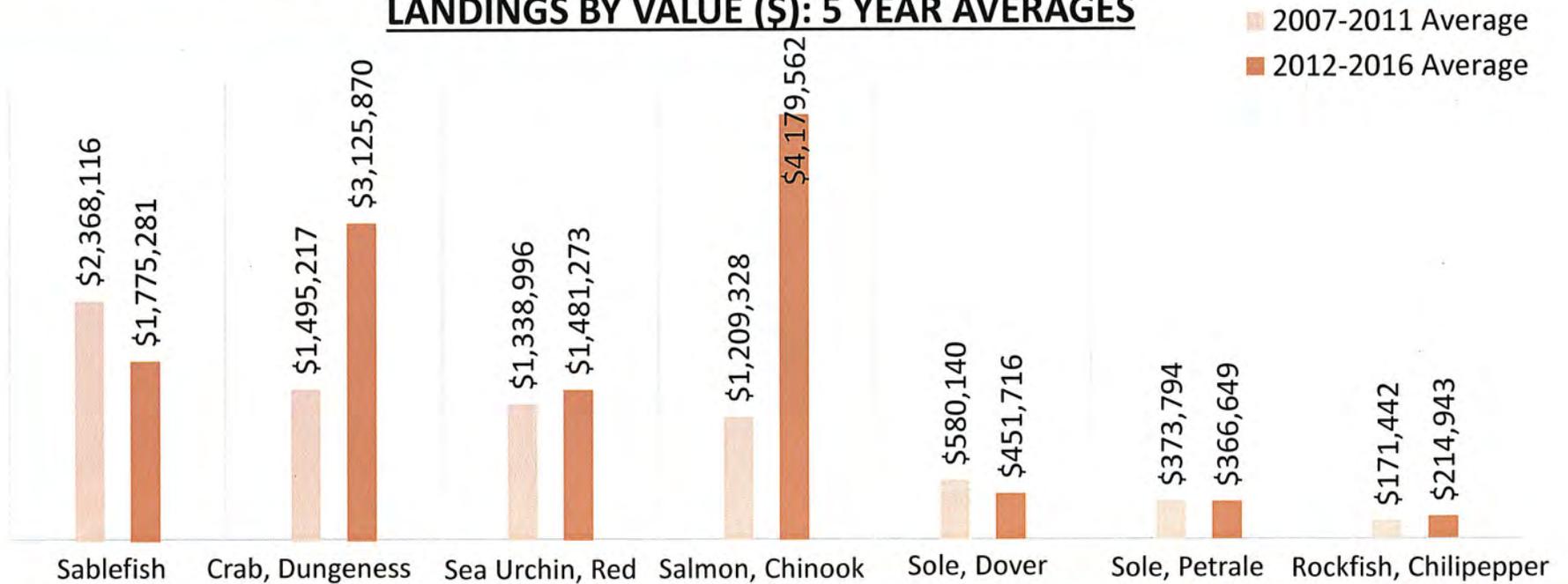
5 Year Average: 2012-2016



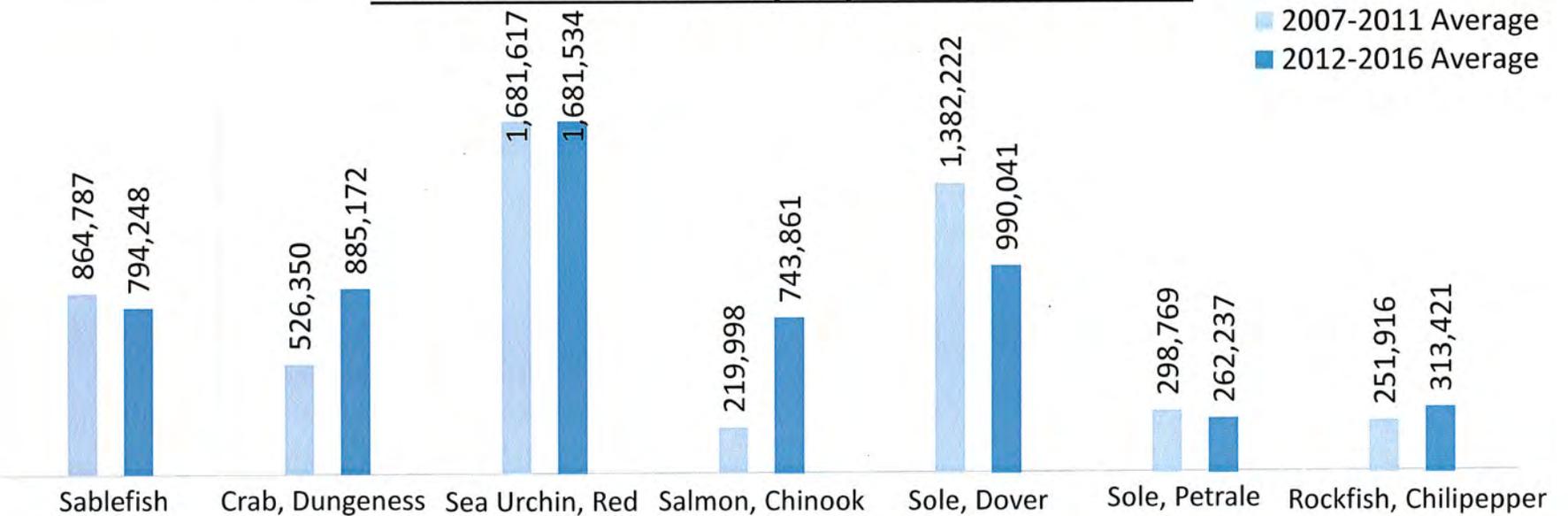
- | | |
|-----------------|-----------------------|
| Crab, Dungeness | Sablefish |
| Sole, Dover | Sea urchin, red |
| Salmon, Chinook | Thornyhead, longspine |
| Sole, Petrale | |

COMMERCIAL LANDINGS OF SELECT SPECIES IN 2007-2011 VS 2012-2016

LANDINGS BY VALUE (\$): 5 YEAR AVERAGES



LANDINGS BY WEIGHT (LBS): 5 YEAR AVERAGES



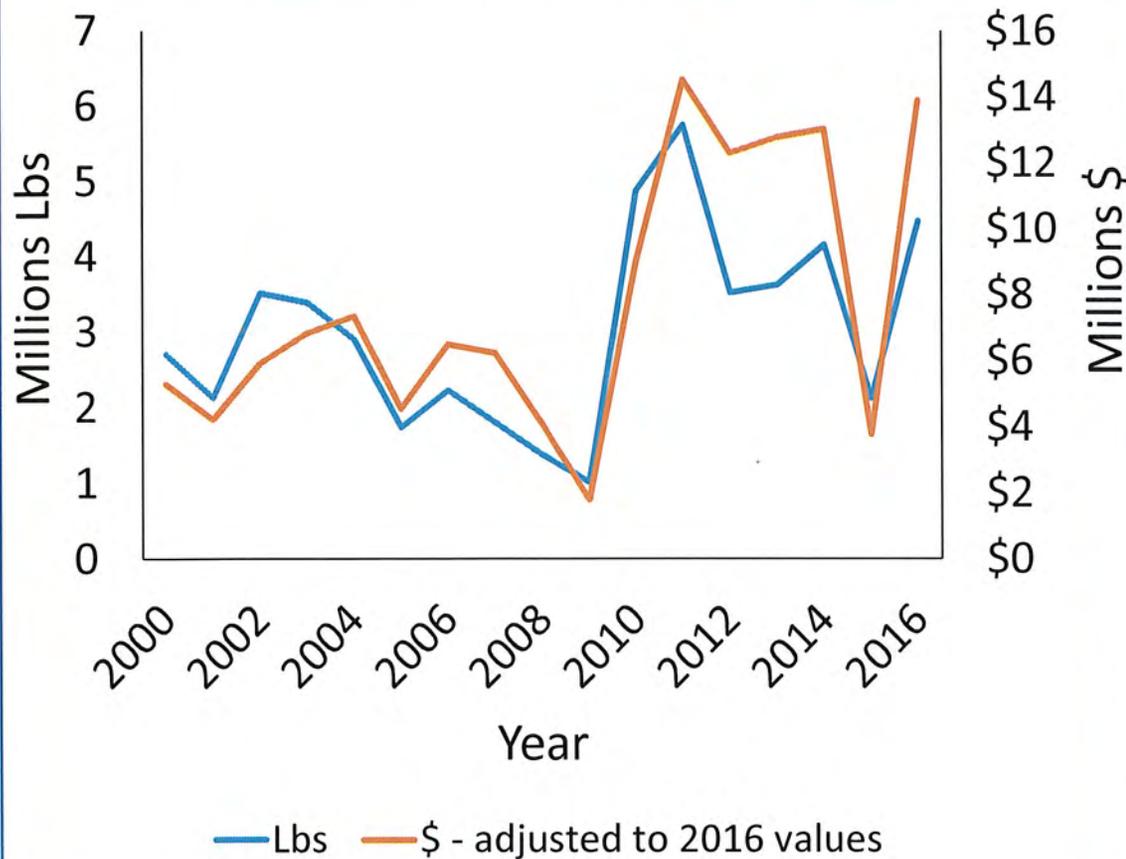
Bodega Bay FISHING COMMUNITY PROFILE

~3 million lbs
average
annual
landings

257
Commercial
Fishing
Vessels

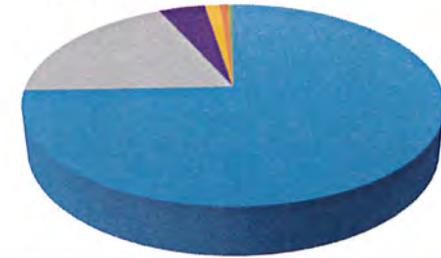
12 Commercial
Passenger
Fishing Vessels
(8 year average)

TOTAL COMMERCIAL LANDINGS AND VALUE: 2000-2016



TOP 6 SPECIES BY VALUE (\$)

5 Year Average: 2012-2016



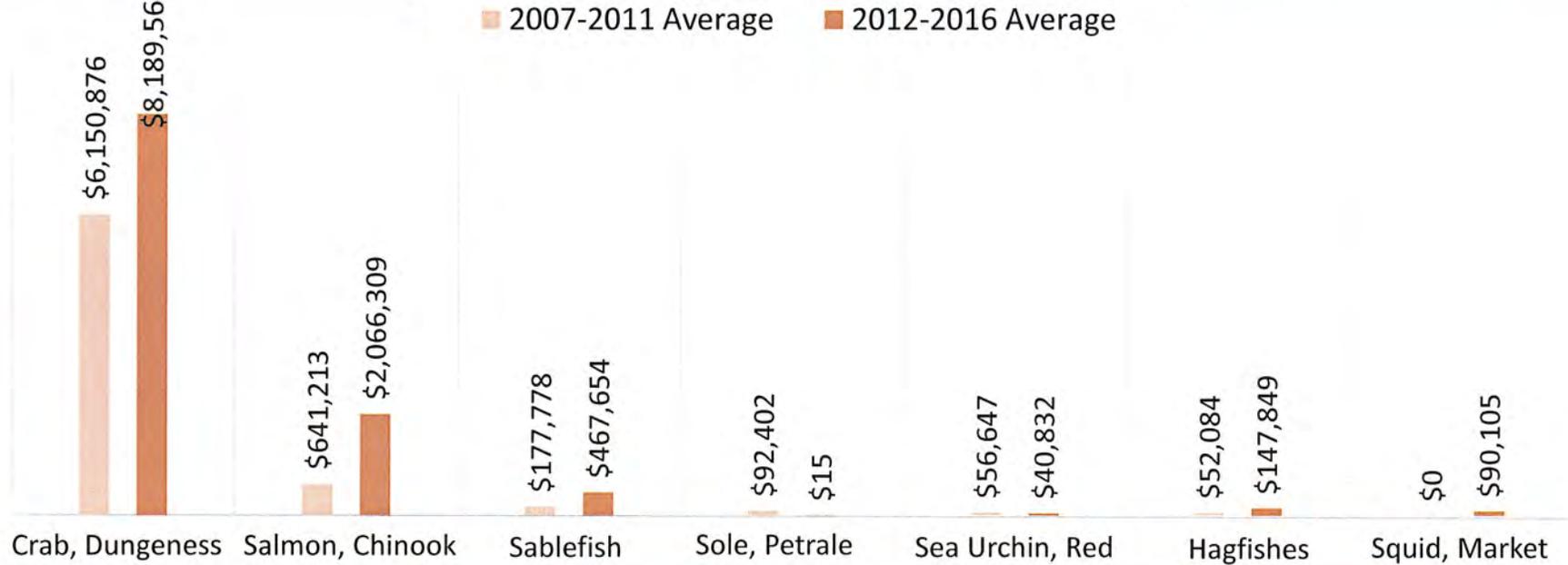
TOP 6 SPECIES BY WEIGHT (LBS)

5 Year Average: 2012-2016

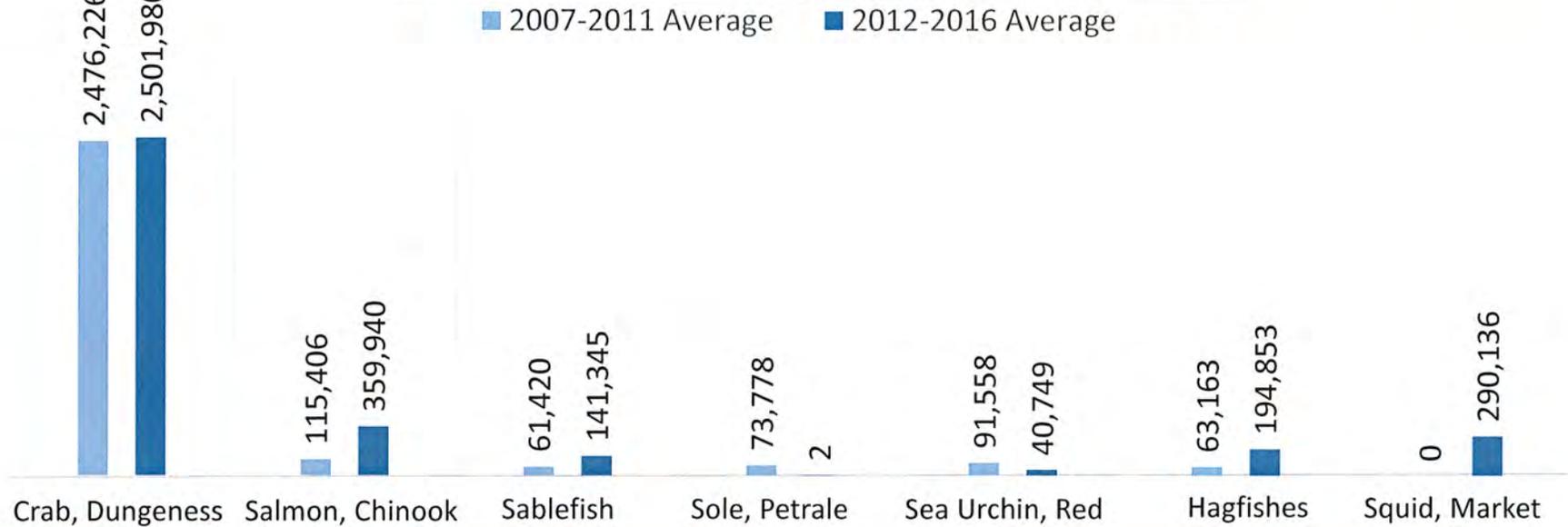


COMMERCIAL LANDINGS OF SELECT SPECIES IN 2007-2011 VS 2012-2016

LANDINGS BY VALUE (\$): 5 YEAR AVERAGES



LANDINGS BY WEIGHT (LBS): 5 YEAR AVERAGES



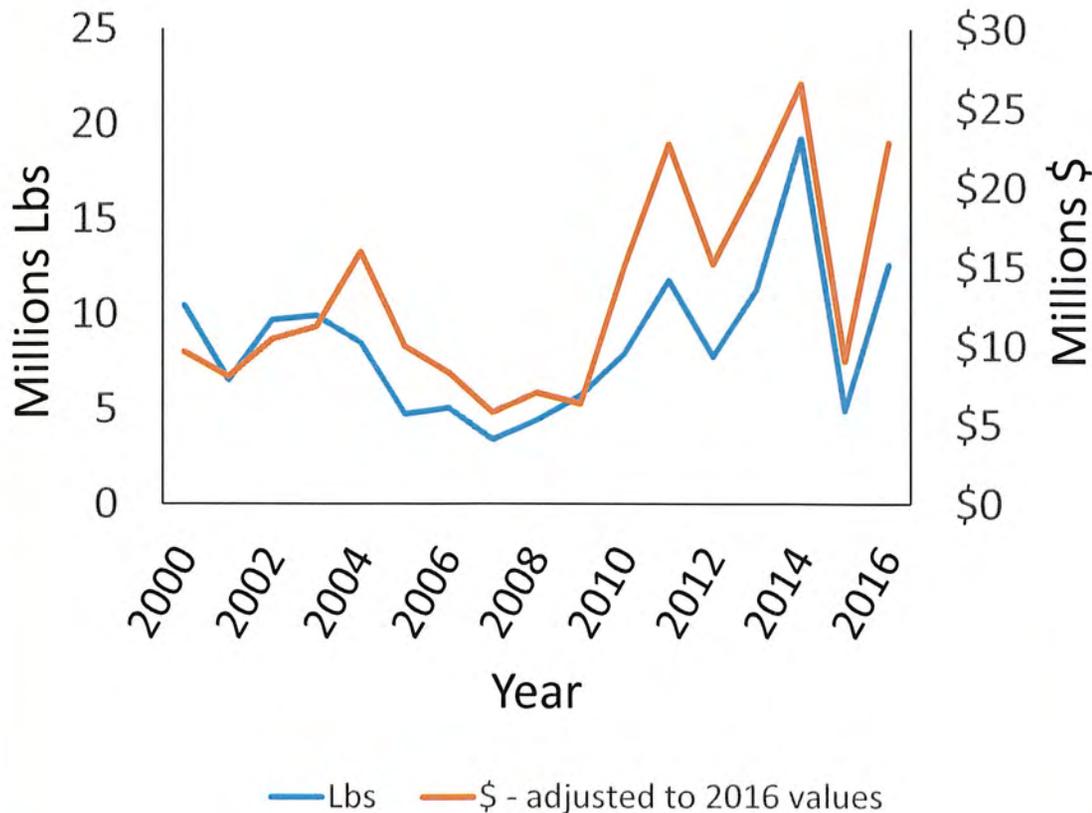
San Francisco FISHING COMMUNITY PROFILE

421 Commercial Fishing Vessels

15 Seafood Processors

32 Commercial Passenger Fishing Vessels (8 year average)

TOTAL COMMERCIAL LANDINGS AND VALUE: 2000-2016



TOP 6 SPECIES BY VALUE (\$)

5 Year Average: 2012-2016



TOP 6 SPECIES BY WEIGHT (LBS)

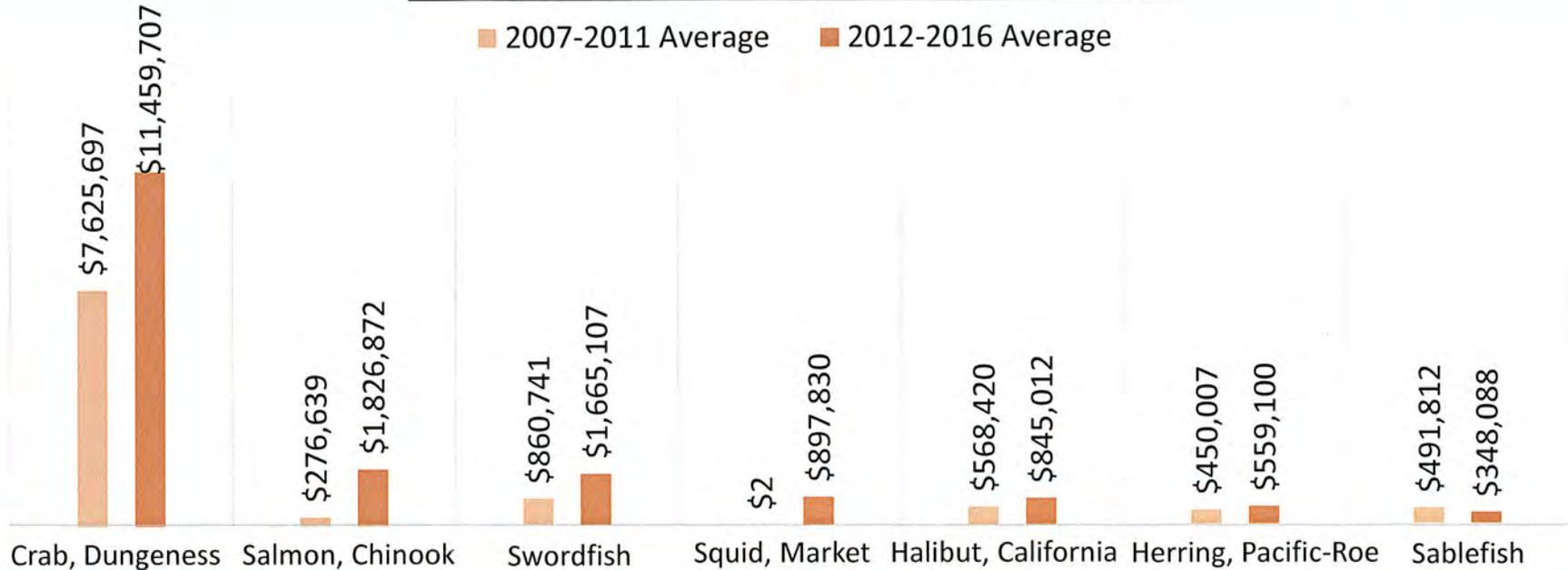
5 Year Average: 2012-2016



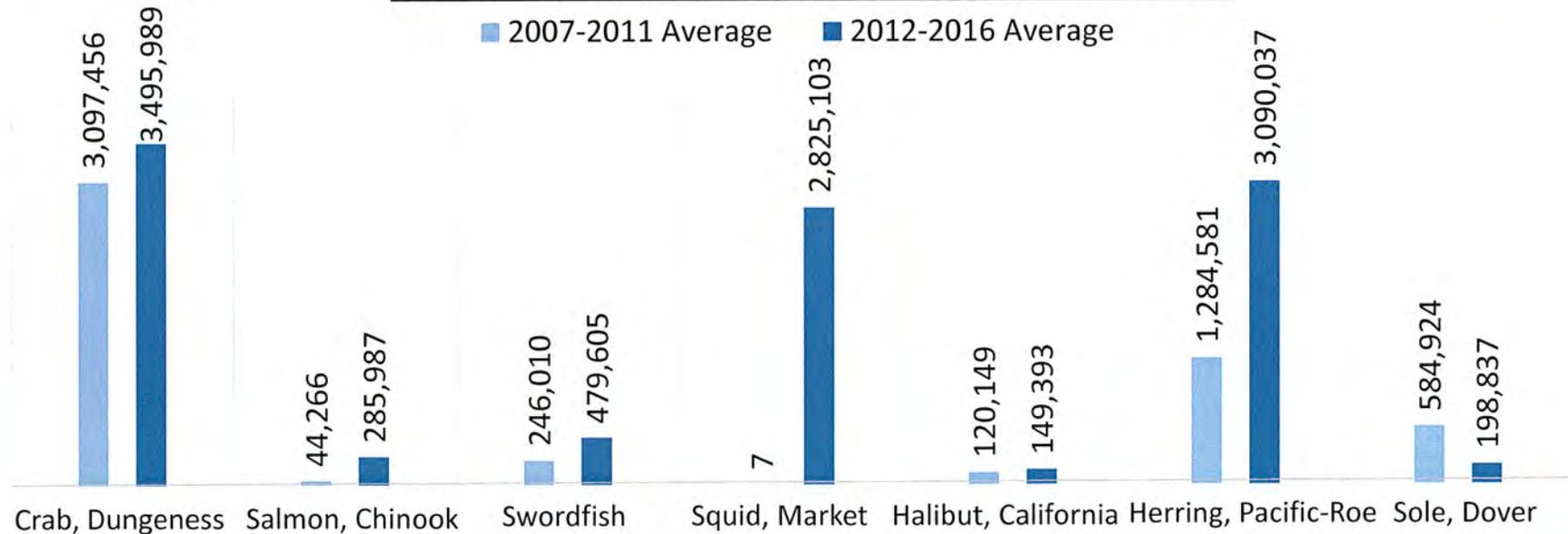
- Crab, Dungeness
- Squid, market
- Salmon, Chinook
- Swordfish
- Halibut, California
- Sole, Dover
- Herring, Pacific-Roe

COMMERCIAL LANDINGS OF SELECT SPECIES IN 2007-2011 VS 2012-2016

LANDINGS BY VALUE (\$): 5 YEAR AVERAGES



LANDINGS BY WEIGHT (LBS): 5 YEAR AVERAGES



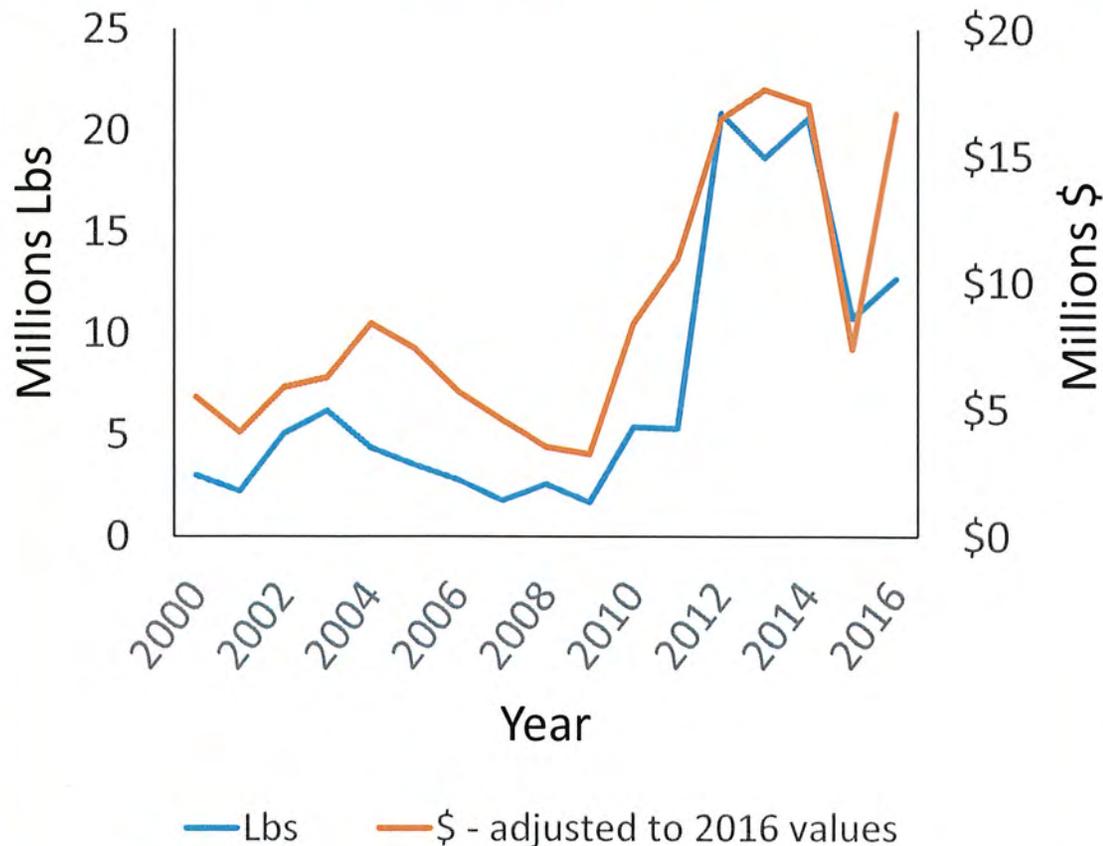
Half Moon Bay FISHING COMMUNITY PROFILE

~8 million lbs
average
annual
landings

162
Commercial
Fishing
Vessels

8 Commercial
Passenger
Fishing Vessels
(7 year average)

TOTAL COMMERCIAL LANDINGS AND VALUE: 2000-2016



TOP 6 SPECIES BY VALUE (\$)

5 Year Average: 2012-2016



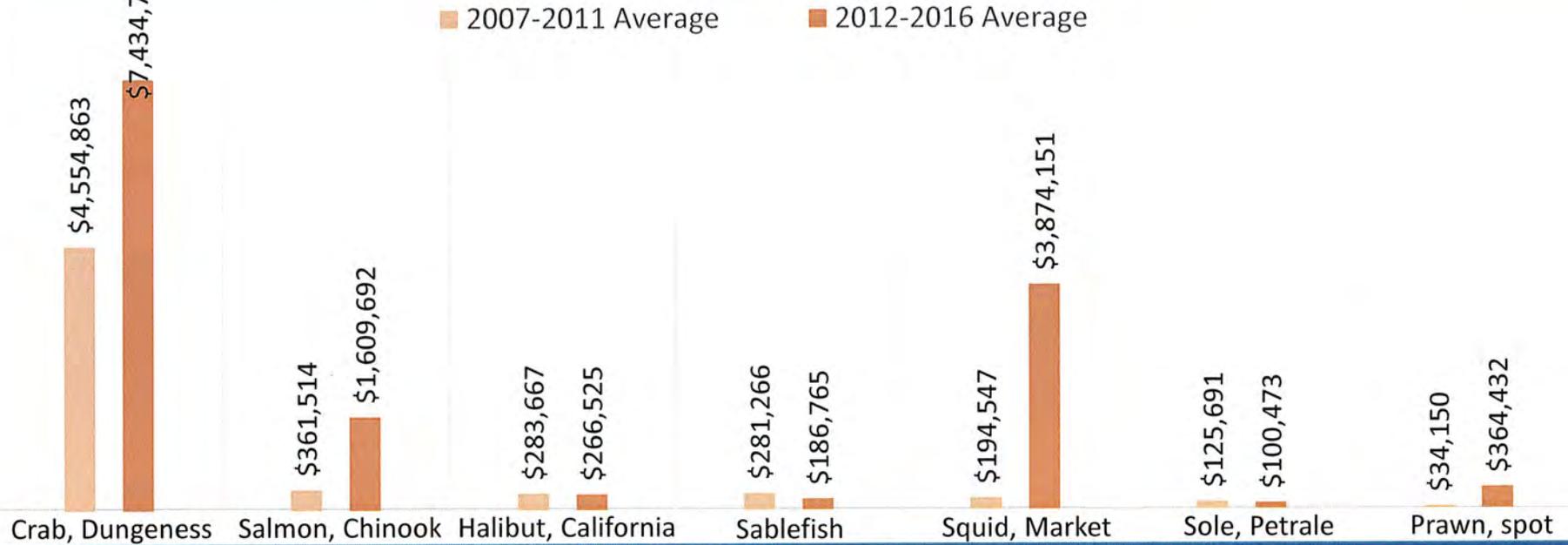
TOP 6 SPECIES BY WEIGHT (LBS)

5 Year Average: 2012-2016

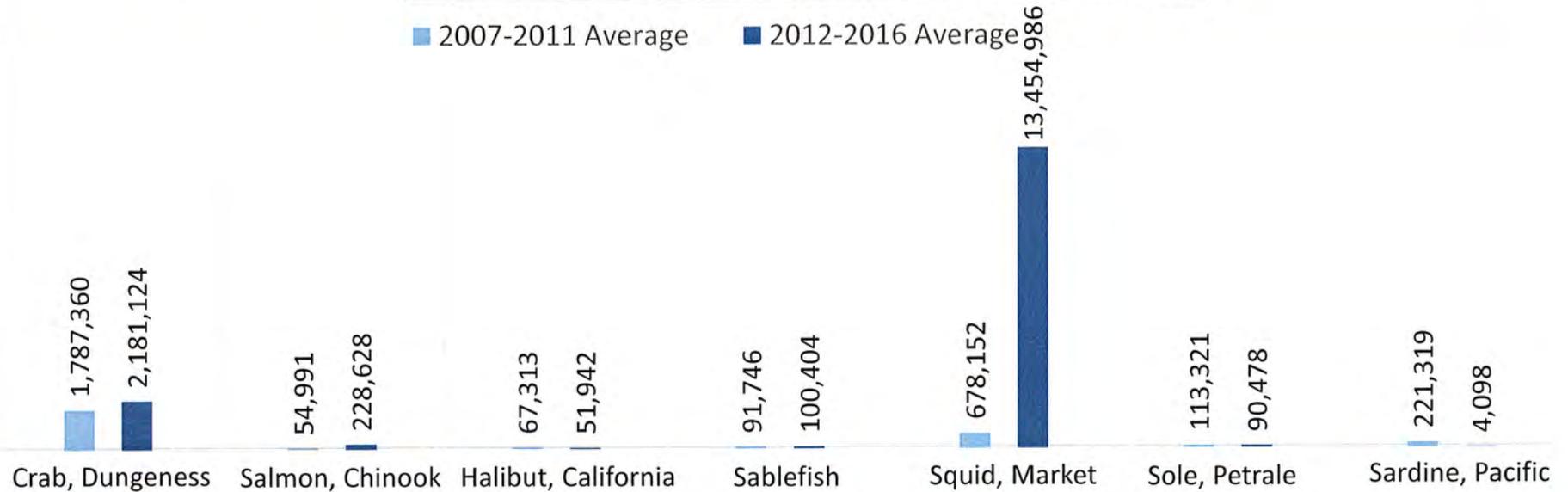


COMMERCIAL LANDINGS OF SELECT SPECIES IN 2007-2011 VS 2012-2016

LANDINGS BY VALUE (\$): 5 YEAR AVERAGES



LANDINGS BY WEIGHT (LBS): 5 YEAR AVERAGES



MORRO BAY AREA FISHING COMMUNITY PROFILE

Includes Morro Bay, Avila/Port San Luis,
and San Simeon

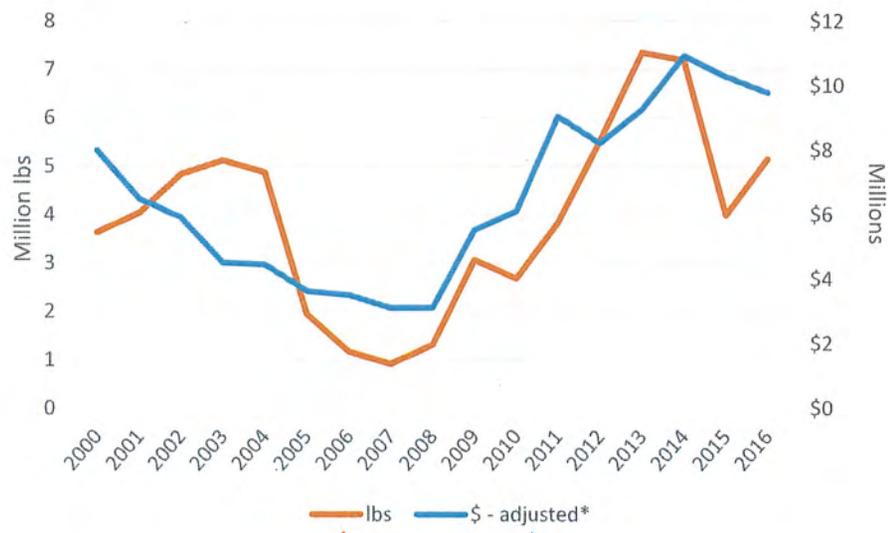
50-60
Commercial
Fishing
Vessels

8 Charter
Fishing
Vessels

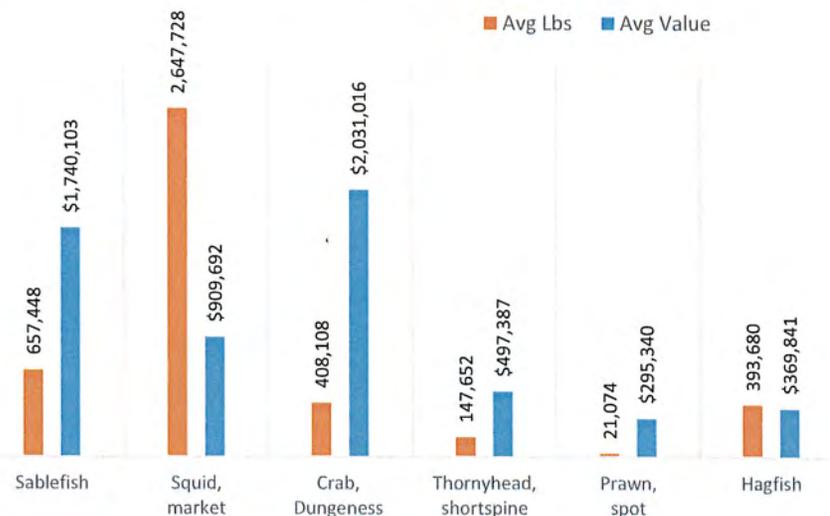
2 Seafood
Processors

~4.3 million
lbs landed
annually
(avg)

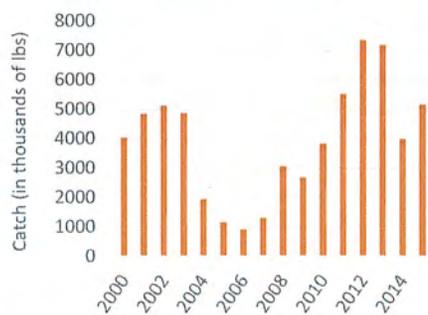
Morro Bay Area Total Catch and Value since 2000



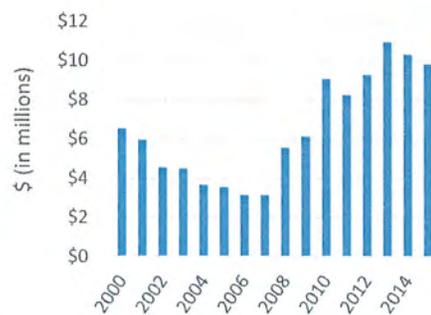
Catch & Value of Top 6 Species (5 yr avg)



Catch Since 2000 (lbs)



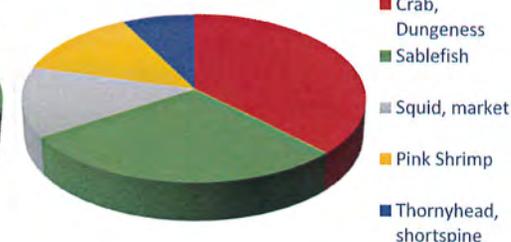
Value of Catch Since 2000 (\$)



2016 Top 5 Species - Lbs



2016 Top 5 Species - \$



*All dollar amounts adjusted to 2016 values

Santa Barbara Channel Area Fishing Community Profile

Includes Santa Barbara, Ventura, Channel Islands (Oxnard), Port Hueneme, Gaviota Beach, Guadalupe Beach ports

150-200 Commercial Fishing Vessels

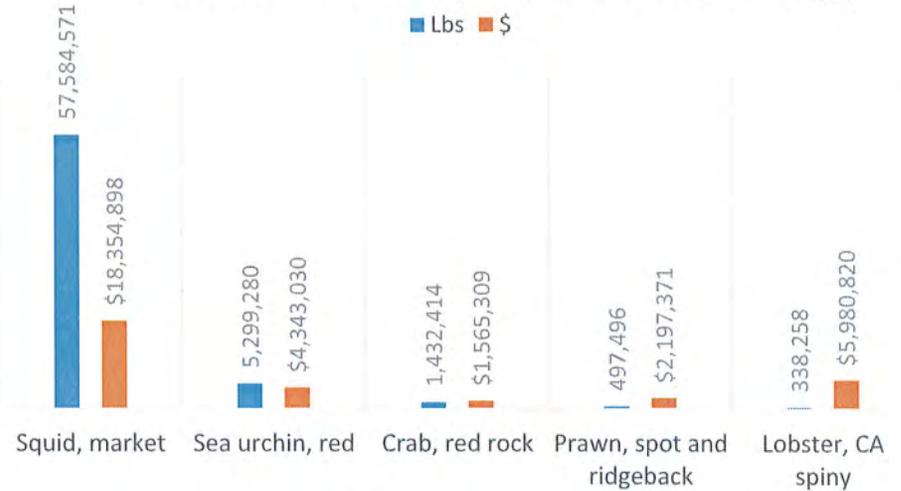
\$33 million average annual earnings

~90 million lbs average annual landings

Santa Barbara Channel Area Total Catch and Value 2000-2016



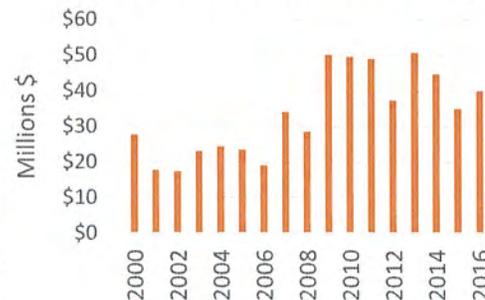
Catch and Value Of Top 6 Species (5 Year Average)



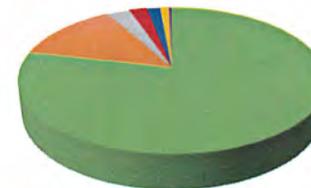
Catch Since 2000 (lbs)



Value of Catch Since 2000 (\$)



2016 Top 7 by Weight



2016 Top 7 by Value



- Squid, market
- Sea urchin, red
- Crab, red rock
- Prawn, ridgeback
- Halibut
- Mackerel, Pacific
- Lobster, California spiny

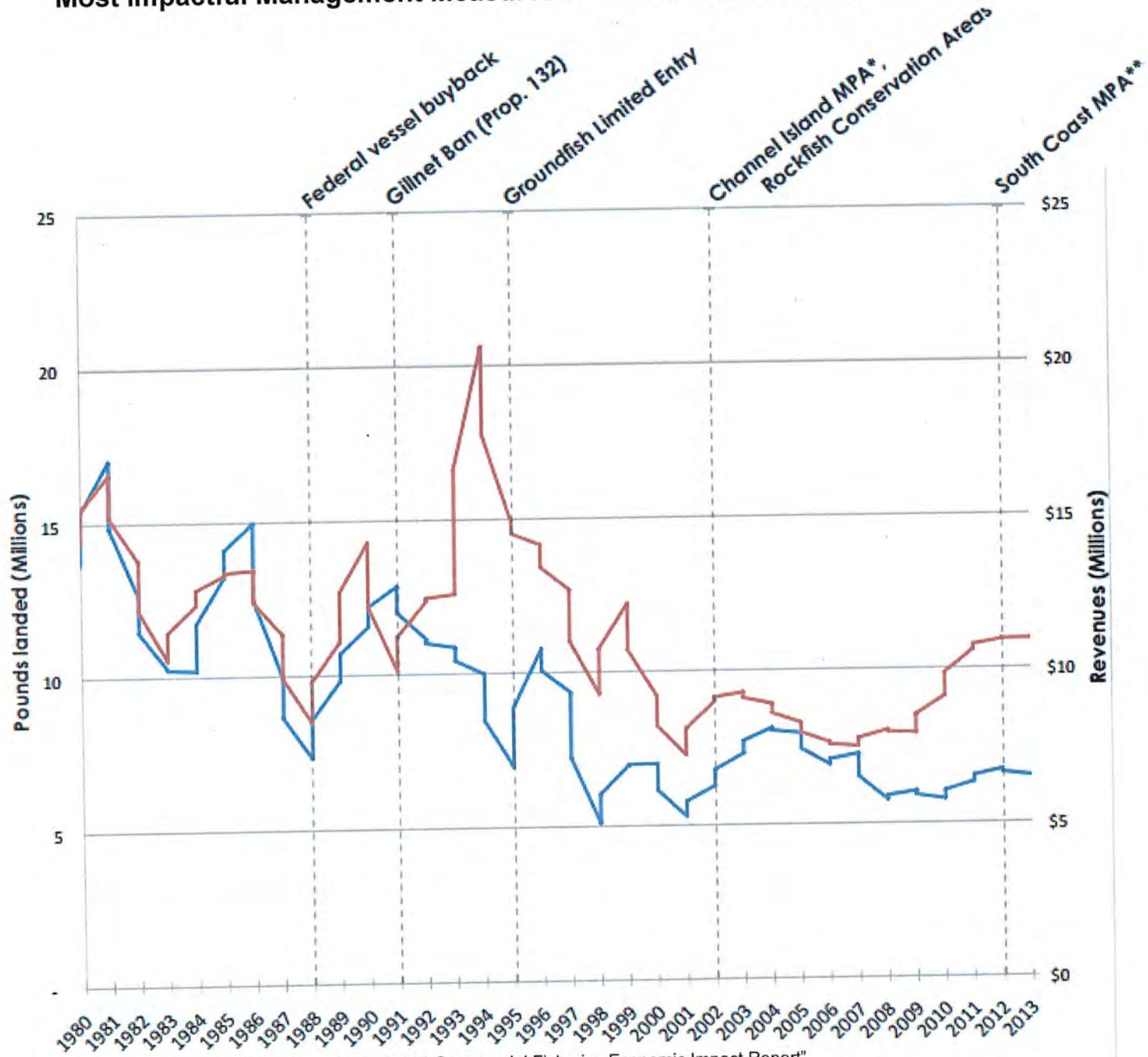
Management Context for Select Fisheries in the Santa Barbara Channel Port Area¹

Fishery	Management Authority		Management Measures				
	State	Federal	Limited entry	Quotas	Time/area closures	Species size/sex rules	Gear restrictions
Blackcod (sablefish) hook-and-line, trap	✓	✓	✓	✓	✓	✓	✓
Coastal pelagic finfish seine	✓	✓	✓	✓	✓		✓
Market squid seine	✓		✓	✓	✓		✓
Red sea urchin dive	✓		✓		✓	✓	✓
Rock crab trap	✓		✓			✓	✓
Sea cucumber dive, trawl	✓		✓		✓		✓
Spiny lobster trap	✓		✓		✓	✓	✓
Spot prawn trap	✓		✓		✓		✓

Note: Management authority and /or measures may vary for a given fishery depending on species and/or gear type.

¹ Credit: California Sea Grant (<https://caseagrants.ucsd.edu/project/discover-california-commercial-fisheries/regions/santa-barbara-channel>)

Most Impactful Management Measures and Their Effects on the Industry



Credit: Lisa Wise Consulting, CFSB "2014 Commercial Fisheries Economic Impact Report"

California Fish and Game Commission

Summary of Public Comments Received on the California Coastal Fishing Communities Meetings Staff Report

Compiled November 8, 2018

Following exploratory discussions with the California Fish and Game Commission (Commission) Marine Resources Committee (MRC) and the public in 2015 and 2016 regarding challenges and needs within California's coastal fishing communities, the Commission approved an MRC recommendation to broaden the conversation coastwide through a series of locally-focused coastal fishing community meetings along the California coast.

A total of seven locally-focused coastal fishing community meetings were held in 2017 and 2018 along the coast from Crescent City to San Diego, with participation from individual commissioners and staff. The meetings offered a venue to more thoroughly explore, from the perspective of specific fishing-dependent coastal communities, current conditions and changes being experienced in ports, constraints on adaptation, and needs for creating future resilience.

At the Jul 2018 MRC meeting, staff presented a staff report that summarized input from the various meetings to identify common themes, port-specific issues, and ideas to explore further. The staff report also identified a range of options for potential Commission focus and action in response to community concerns. Based on an MRC recommendation, the *Staff Report on California Coastal Fishing Communities Meetings* was opened for the public's feedback. The public comment period was open from July 17, 2018 through September 24, 2018. Fourteen public comment emails and letters were received from a variety of stakeholders, including commercial and recreational fishermen and fishing organizations.

The purpose of this document is to help inform MRC discussion and consideration of next steps at its November 14, 2018 meeting in Sacramento. The document summarizes all public comments received during the public comment period (Table 1). Responses will be developed pending MRC direction.

In the summary of comments, the California Department of Fish and Wildlife is identified as "Department" for brevity.

Table 1. Public comments received on the Staff Report on California Coastal Fishing Communities Meetings during the public comment period

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
1	9/23/2018	Steven Rebuck, commercial and recreational fisherman	General Comment	Offered definition of a new term: "Perverse Wanton Waste", which he associates with lack of access to harvest available fishery resources due to bias against particular user groups, as has occurred with commercial abalone divers and constraints under Marine Mammal Protection Act.
2	9/23/2018	Steven Rebuck, commercial and recreational fisherman	General Comment	Meetings were well-conceived, conducted, and timely. Staff were generous and respectful with speakers.
3	9/23/2018	Steven Rebuck, commercial and recreational fisherman	General Comment	The staff report has many gaps relative to what was shared at meetings.
4	9/23/2018	Steven Rebuck, commercial and recreational fisherman	General Comment	Highlighted impact of marine protected areas, and challenged that they would fail without clean water, good human use resource management, and minimal marine mammals.
5	9/23/2018	Steven Rebuck, commercial and recreational fisherman	Meeting Highlights	Provided detailed overview of concerns with recreational red abalone fishery and loss of the commercial abalone fishery and the consequences to fishermen and the resource.
6	9/23/2018	Steven Rebuck, commercial and recreational fisherman	Meeting Highlights	Concerned about lack of emphasis on the issue of helping fishermen coexist with marine mammals; requests Commission to assist fishermen with addressing marine mammal encounters.
7	9/23/2018	Steven Rebuck, commercial and recreational fisherman	Appendix A	Request to add more emphasis on the issue of helping fishermen coexist with marine mammals; this was a significant problem highlighted in Atascadero meeting.

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
8	7/30/2018	Don Thompson, Former commercial abalone fisherman	Appendix A	Wishes the appendix would include all original comments.
9	7/31/2018	William Diller	Appendix B	Provided concerns about inaccuracies on a chart included in the report
10	7/31/2018	Tom Mattusch Commercial passenger fishing vessel operator	Appendix B	Noted that the number of processors for specific ports were missing; requests to add to all snapshots.
11	8/1/2018	Ken and Linda Bates, Commercial fisherman	General Comment	Report is an accurate description of comments, trends, and fishermen's concerns over the decline and erosion of fishing, port infrastructure, and the culture of commercial fishing in California.
12	8/1/2018	Ken and Linda Bates, Commercial fisherman	General Comment	Apply the information to change policy: Commission staff accurately distilled a wide range of comment and concerns into concise points capable of assisting the Commission, Department, and California State Legislature in making substantial, timely changes in our fisheries policy.
13	8/1/2018	Ken and Linda Bates, Commercial fisherman	Staff Recommendations (SRs)	Supports all staff recommendations.
14	8/1/2018	Ken and Linda Bates, Commercial fisherman	SR 3 and SR 6	Provided encouragement for the Commission and Department to moved forward with their proposal for innovative "experiments which even if they might fail, will provide data, experience and wisdom to manage California's fishery resource" (Marine Life Management Act) (i.e., north coast small boat squid access)

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
15	8/1/2018	Kathy Fosmark & Frank Emerson, Alliance of Communities for Sustainable Fisheries (ACSF)	General Comment	Several ACSF board members attended the coastal meetings.
16	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	General Comment	Add recognition of loss of fishing infrastructure, especially loss of fish buyers and processors in California. A state policy that addresses restoring, encouraging, and facilitating larger-scale buyer/processors is needed if fishing is to survive in communities.
17	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	General Comment	Address "access" issues around state and federal spatial closures such as marine protected areas, rockfish conservation areas.
18	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	General Comment	Concern about references to underserved "small" operators. In California, all fisheries are "small" in that there are no large factory-type trawler/processors or factory boats. California fisheries often have multi-generational fishing families with family "corporations" that are community bedrocks.
19	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SRs	Add recommendation to develop port-area "community sustainability plans" (CSPs). CSPs are very useful provided other agencies (cities, port or harbor districts) commit to implementing the plan. A statewide CSP could be done but focus on what the State will do. This could be built into the fishing community policy.
20	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SR 1	Define "fishing community", or "fishing dependent community" as in the Magnuson-Stevens Fishery Conservation and Management Act.

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
21	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SR 1	Expand on language from the California Coastal Act (sections 30703 and 30234) regarding the importance of commercial and recreational fishing space in harbors and protecting and upgrading harbor support for fishing and boating industries.
22	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SR 1	Suggests ACSF mission as a model - to connect fishermen with their communities (including the harbor authorities). Include directive to enhance these connections in the policy.
23	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SR 2	Critically important not to undermine or harm existing restricted access programs in your interest to provide access and opportunities for younger and "artisanal" fishermen. Restricted access programs create fishery stability and investment.
24	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SR 4	Engage legislative staff and consultants to greatly improve their knowledge and understanding. Misinformation has led to legislation that has severely impacted fishing jobs directly and fishing infrastructure indirectly.
25	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SR 5	Emphasize Department engagement in Pacific Fishery Management Council meetings as independent and science-based voices; recommend California policy require consideration of fishing communities, as in the Magnuson-Stevens Fishery Conservation and Management Act.
26	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SR 6	Look to the City of Monterey and Monterey Fisheries Trust as a model and expand to State-managed fisheries. Statewide application would require changes to some rules regarding permit ownership, transferability, and leasing, to benefit both fishermen and communities. Look to both stabilize regional fisheries and create new opportunities.

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
27	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SR 3 and SR 6	Suggests ACSF mission as a model - to connect fishermen with their communities (including the harbor authorities). Include directive to enhance these connections in the policy.
28	9/20/2018	Kathy Fosmark & Frank Emerson, ACSF	SR 7	Engage fishermen in the science, including setting study design criteria; they have on-the-water expertise and observations to contribute.
29	9/20/2018	Josh Churchman, Commercial Fisherman	General Comment	Expressed concern that many small ports may be left with no access to their local fishing grounds; there may be a migration of permits to areas where quotas are highest
30	9/21/2018	Diane Pleschner-Steele, California Wetfish Producer's Association (CWPA)	Unique Challenges (Question 1)	Provided an explanation of inaccuracies associated with the restricted access policy constraints listed.
31	9/21/2018	Diane Pleschner-Steele, CWPA	Unique Challenges (Question 1)	It is important to recognize that many California fishermen are actually "small-scale" in the context of large national corporate fishing operations.
32	9/21/2018	Diane Pleschner-Steele, CWPA	Unique Challenges (Question 1)	Expressed that the wetfish industry is in jeopardy of collapse if future Commission (and Council) actions undermine the stability that the restricted access policy has fostered.
33	9/21/2018	Diane Pleschner-Steele, CWPA	General Comment	Suggests that the Commission operate under the principle that any response to climate change (or community resilience) must not undermine the goals and objectives inherent in existing limited entry programs.
34	9/21/2018	Diane Pleschner-Steele, CWPA	Unique Challenges (Question 1)	Highlights the lack of flexibility under the current management structure in regard to adapting to environmental anomalies and challenges.

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
35	9/21/2018	Diane Pleschner-Steele, CWPA	Future Vision (Question 3)	Suggested that the concept of community-supported foundations, such as the Monterey Bay Fisheries Trust, could serve as local permit "banks" where permits could be purchased by the foundation and leased out, either in whole or in part.
36	9/21/2018	Diane Pleschner-Steele, CWPA	General Comment	Reviewed and concur with most of the recommendations submitted by West Coast Fisheries Consultants and the Alliance of Communities for Sustainable Fisheries.
37	9/21/2018	Diane Pleschner-Steele, CWPA	SR 1	Policy should begin by defining 'fishing community'; policy should incorporate language from the California Coastal Act that supports and protects fishing communities in adopting Commission policy; the Commission should support a policy that encourages and incentivizes reducing the carbon footprint in fisheries.
38	9/21/2018	Diane Pleschner-Steele, CWPA	SR 2	Reiterates the importance ACSF comments on how it is critically important to not undermine or harm the existing limited entry system.
39	9/21/2018	Diane Pleschner-Steele, CWPA	SR 5	States that this recommendation is critically important when considering the potential northward shift of fishery stocks.
40	9/21/2018	Diane Pleschner-Steele, CWPA	SR 6	Support this approach as a potential avenue to enhance flexibility and fishing opportunity in the face of climate change, both for established fishermen and potential new entrants.
41	9/21/2018	Diane Pleschner-Steele, CWPA	SR 7	Strongly supports this approach, which CWPA demonstrated in its industry-sponsored squid research program.

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
42	9/24/2018	Mike Conroy, West Coast Fisheries Consultants (WCFC)	General Comment	Need to define "fishing community". This is not defined in Fish and Game Code, Title 14 of the California Code of Regulations, or the Marine Life Management Act. This is a top priority. Provides a recommended definition with two parts included.
43	9/24/2018	Mike Conroy, WCFC	General Comment	Clarify what are the Commissions powers and limitations. We need to know this if we are to achieve the stated goal of the meetings, to identify "...areas in which the Commission can play a role to foster greater stability and long-term viability."
44	9/25/2018	Mike Conroy, WCFC	General Comment	Recognize the provisions of the Public Resources Code (PRC, sections 30234 and 30703) which speak to importance, and priority, of commercial fishing and recreational boating industries in harbors.
45	9/26/2018	Mike Conroy, WCFC	General Comment	Improve description of the importance of infrastructure to the fishing industry. Providing access alone will not be adequate for smaller ports, unless ports and harbors commit to supporting infrastructure.
46	9/27/2018	Mike Conroy, WCFC	General Comment	Recommends that the Commission consult with local port and harbor commissions to build an inventory of fishing infrastructure and facilities. Provides a suggested outline.
47	9/28/2018	Mike Conroy, WCFC	General Comment	Staff report represents a solid foundation upon which to build a policy to protect and revitalize California's fishing communities. Suggests forming a blue-ribbon panel (WCFC cross-references PCFFA letter).
48	10/9/2018	Mike Conroy, WCFC	General Comment	Staff report may want to consider how CSPs could be used at a statewide, regional, or port-specific level.

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
49	10/10/2018	Mike Conroy, WCFC	Background	Does not agree with how the background is characterized. Provided clarifications from commenter's perspective.
50	9/29/2018	Mike Conroy, WCFC	Meeting Highlights	Provided several specific comments pertaining to each of the key themes identified and discussed under: "1. Unique Challenges" (4 pages); "2. Current Adaptation Strategies"; "3. Future Vision"; and "4. Potential FGC actions".
51	9/30/2018	Mike Conroy, WCFC	SRs	Volunteers to offer additional input on implication of the recommendations.
52	10/11/2018	Mike Conroy, WCFC	SR 1	Define "fishing community", beginning with a review of federal regulations implementing National Standard 8.
53	10/1/2018	Mike Conroy, WCFC	SR 2	Notes that some of the potential revisions could be legislative in nature.
54	10/2/2018	Mike Conroy, WCFC	SR 3	Suggests language.
55	10/3/2018	Mike Conroy, WCFC	SR 4	Concurs that legislation could be necessary but be careful to avoid unintended consequences.
56	10/4/2018	Mike Conroy, WCFC	SR 5	Agrees with recommendation.
57	10/5/2018	Mike Conroy, WCFC	SR 6	Fully supports idea. Provides specific examples for how community banks could be utilized in California spiny lobster, and for permitted market squid vessels and brail vessels.
58	10/6/2018	Mike Conroy, WCFC	SR 7	Agrees with recommendation. Look to the federal exempted fishing permit given to CWPA as a model of collaboration.

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
59	10/7/2018	Mike Conroy, WCFC	SR 8	Extend survey to ports and harbors.
60	10/8/2018	Peter Halmay, Commercial fisherman	General Comment	Recommended that resource users can self-organize to maintain their resources rather than having governments impose solutions.
61	9/24/2018	Art Seavey, Monterey Abalone Company	General Comment	Requests that the Commission provide leadership to the Department and the state in order to invigorate responsible stewardship of the appropriate resources for aquaculture in our state.
62	9/24/2018	Noah Oppenheim, Pacific Coast Federation of Fishermen's Associations (PCFFA); and Kimberly Selkoe and Chris Voss, Commercial Fishermen of Santa Barbara (CFSB)	General Comment	California must take proactive and innovative measures to manage for socioeconomic and ecological resilience in fisheries. Agencies must take steps to bring fishermen and managers into alignment on how measures are designed and implemented.
63	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	General Comment	Provided 14 recommendations that build on the draft content of the staff report.
64	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	General Comment	Provided 6 ideas for improving the quality and utility of the report, such as adding definitions for terms.
65	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	SR 1	Request to indicate the role of a new coastal fishing communities policy, provide clarity of the potential policy, and what ideas the policy might include.
66	9/24/2018	Noah Oppenheim, PCFFA; and	SR 2	Suggested that this recommendation could be strengthened by focusing on generating changes to

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
		Kimberly Selkoe, Chris Voss, CFSB		the policy in response to a review of the past performance of the policy.
67	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	SR 3	Requests a definition of small-scale fishing communities, and an explanation of what is meant by "information gaps."
68	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	SR 4	Requests for an explanation for how legislative staff would be engaged differently than how they currently are engaged. Recommendation is vague.
69	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	SR 5	Clarify "who" specifically to engage with, "why" (justification), and "how."
70	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	SR 6	Supports recommendation - written clearly.
71	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	SR 7	List examples of collaborative research and data gaps identified in meetings; incorporate into an appendix.
72	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	SR 8	Offered suggestions to clarify this recommendation, such as information sought, what worked well, and what needs to be better understood.

Comment Number	Comment Date	Name and Affiliation	Section of Report or General Comment	Summary of Comment
73	9/24/2018	Noah Oppenheim, PCFFA; and Kimberly Selkoe, Chris Voss, CFSB	Appendix A	Please clarify further. Suggests that transcripts of each meeting be prepared.
74	9/24/2018	Peter H. Flournoy, International Law Office of San Diego	General Comment	Expressed a concern for a lack of personnel and monetary resources. Changes will not be accomplished unless there is more money, time, and energy invested into coastal fishing communities.
75	9/24/2018	Peter H. Flournoy, International Law Office of San Diego	Appendix B	Requests for more analysis and comparison of charts.
76	9/24/2018	Peter H. Flournoy, International Law Office of San Diego	General Comment	Encourages the development of fish markets along California's coast so local fishermen and their communities could be supported.
77	9/24/2018	Peter H. Flournoy, International Law Office of San Diego	General Comment	Argues that the Commission and the Department do not have the resources to develop fisheries management plans for new species in a timely manner.
78	9/24/2018	Peter H. Flournoy, International Law Office of San Diego	General Comment	That state needs to invest in its fisheries to develop them.
79	9/25/2018	Tom Peters, north coast community member	General Comment	Expressed the need for improved port infrastructure.

From: Steve Rebuck

Sent: Sunday, September 23, 2018 3:03 PM

To: Ashcraft, Susan@FGC <Susan.Ashcraft@fgc.ca.gov>; FGC <FGC@fgc.ca.gov>

Subject: Amended Comments: Coastal Fishing Community Report

A new term. "Perverse Wanton Waste": The intentional wasting of natural resources, by government, through legislation, regulation, and/or misrepresentation, prohibiting utilization, due to bias toward a particular user group (example, commercial abalone divers) and perceived sacredness of particular animal species (example, Marine Mammal Protection Act).

All submissions for the record

Dear Ms. Ashcroft: Thank you for the reminder to comment on the Coastal Fishing Community (Community) meeting conducted by the California Fish and Game Commission (Commission) in recent months. I thought the meetings were well conceived, conducted and timely. In addition, the Commission staff was very generous with time for make comments and were very respectful to speakers.

The primary problem as I have seen it over the past 50 years is the California Department of Fish and Game/Wildlife (Department) has generally not been willing to take responsibility for laws they have created. We as citizens are obligated to obey these laws.

The Commission Coastal Fishing Community Report (Report) has many gaps in reporting, some of which appear to be politically motivated and/or politically correct.

ABALONE

My background has been with abalone, so my comments will be specific to the sport and commercial abalone fisheries. Abalone was the first commercial fishery in California, begun by Chinese immigrants about 1850. Both fisheries, south of San Francisco, were terminated in 1997. At this 1997 juncture, blame for demise of these fisheries was placed primarily on the commercial component, even though over the past 50 years, commercial fishermen produced the lowest take. Cox, Fish Bulletin 118, 1963 reported an average 2 million pound of commercial abalone harvested from 1916 until the early 1960s.

Historic literature on this subject has been ignored by the Department who took no responsibility for their own management failures.

Sadly, in condemning the commercial fishery in 1997, the Department ignored historic data on how and when various abalone species were impacted by overfishing. A published example:

"Fast party boats designed for divers now take sportsmen to the offshore islands of Anacapa, Santa Cruz, and Santa Catalina with a few boats reaching more distant Channel Islands. Recent estimate of total sport catch indicate the annual harvest is between 3 and 4 million pounds."

California's Living Marine Resources, 1971, Page 32.

Total commercial abalone catch (black, red, pink, green, white) for 1971 was 2,945,124 (CDFG, 1994, et al).

These 1971 data suggest a total annual take of 6-7 million pounds, yet the Department did nothing to reduce wasteful take: Shorts, bar-cuts, high-grading. Department research found that high-grading and/or replacement of short abalone was a huge problem:

"During 3 separate Department sport interview surveys, free divers replaced 518 abalones while retaining 1,582 for a 25% replacement rate, and shorepickers replaced 2,871 while retaining 2,541 for a 53% replacement rate. Assuming most cut abalone will die and many of the uncut abalones replaced will be lost to predators, we may be losing almost as many shorts in the tidal zone as legals taken home by shorepickers."

Burge, Richard, S. Schultz, M. Odemar, 1975, Draft Report on Recent

Abalone

Research in California with Recommendations for Management, Operations
Research Branch
and Marine Resources Region, Presented to the California Fish and Game
Commission,
17 January 1975, San Diego

(Unfortunately, this report remains in Draft form, most likely due to political correctness, exposing recreational fishermen as a major problem is not pc).

What these data in total suggest is the real recreational take in 1971 (and later) was in the range of 6-8 million pounds. With the commercial take of approx. 3.m pounds, the real total could have been 9-11 million pounds.

In the Department's published landing data, one finds a decline in landings, which were used against the commercial divers only. These data may be explained by the reduction in abalone reaching commercial legal, 7 3/4 size, driven by sport fishing mortality. It also suggests the Department did nothing to implement the recommendations proposed by the Burge, Schultz, Odemar report, for another decade, and/or as directed by the Commission:

"Our studies showed that a high percentage of the replaced undersized abalone had been cut too severely to survive and, therefore, died shortly after being replaced."

Letter, Executive Secretary, Fish and Game Commission, to CDFG Director,
October 27, 1983, pg 3

The Department/Commission, through regulation, did reduce seasons, recommended better harvest tools, banned screwdrivers and knives, and created public information

programs, reducing shorepicker bar cuts from 53% to 51% and diver bar cuts from 51% to 11% (page 3).

SEA OTTERS AND ABALONE

In addition, in 1987 the Commission supported the translocation of sea otters to San Nicolas Island (SNI) by the US Fish and Wildlife Service (FWS). Support was conditional in that FWS promised the State of California they would contain sea otters to SNI. This conditional support was also spelled out in a CDFG/FWS Memorandum of Understanding (MOU), signed by CDFG Director, Pete Bontadelli, August 1, '87, and FWS Regional director, Rolf Wallensrtom, August 19, 1987.

Because the translocation of sea otters in California was found to be illegal, a violation of the Marine Mammal Protection Act (MMPA) (1985, Office of the Solicitor/ Pacific Legal Foundation) a special law was created by Congress, Public Law 99-625, to make the proposal legal. In addition, the California Coastal Commission (CCC) joined the Commission in approving the project, citing the required containment component.

However, a couple years later, the Department, Commission and CCC abandoned sport and commercial fishermen, and gave up protections of the fisheries afforded by PL 99-625. This has led to approximately 8 publicly funded lawsuits against FWS. The Pacific Legal Foundation (PLF) is still in court over these suits, 31 years later. The Department/Commission has been missing.

The first year of the SNI sea otter translocation, 1987, the Department reported that 41% of red abalone landings originated from SNI (CDFG, 1994). Within a few years, this number reached zero. Yet, the Department blamed only the commercial divers.

Shortly after the translocation began, the FWS went to the US Navy (USN) requesting they restrict access to SNI to an area outside 300 yards from SNI. The Department/Commission left the fishermen on their own.

With the assistance of our Congressman, Robert Lagomarsino, a meeting was arranged between recreational and commercial fishermen and the USN. A reopening of this restricted area, inside 300 yards, was negotiated. The Department and Commission ignored the situation, but did benefit from continued landing taxes, permits and other fees.

By 1997, the Department and Commission arbitrarily closed the red abalone fishery, while ignoring their own published literature on the subject. Although the first Draft of the Abalone Recovery and Management Plan (ARMP) identifies it as a "Fisheries Management Plan" (FMP) no plan has been drafted, and/or completed over the past 21 years.

In the 2005 ARMP, Appendix H, it is identified there were 3,000,000 emergent red abalone at San Miguel Island (SMI) with 10% (300,000) to 20% (600,000) red abalone were above commercial size (7 3/4"). Despite this, the Department has opposed any effort to reopen SMI island to abalone fishing. The current FMP effort only addresses

the north coast where abalone fishing was prohibited, December 7, 2017. Since one can assume some of these abalone are dying of old age, it appears the Department is purposely engaging in perverse version of "Wanton Waste" of this valuable resource and continues to punish the former commercial abalone divers of a crime they did not commit.

PINNIPEDS

The Commission Report, other than page 10, does not delve into what is the largest impact on fish and shellfish stocks in California: Robust populations of marine mammals. The Department has given up on the MMPA and appears to now just consider the role of pinnipeds and resulting fish mortality as background. Failing to mention this role does not solve the problem. Fishermen know what is going on, even if the Department/Commission remain silent.

At the Atascadero Community meeting, I asked specifically for the Commission to assist fishermen with dealing with marine mammal encounters. Although there was robust discussion from the attending fishermen, the Report does not acknowledge such. Again, the Commission and Department fail to acknowledge this problem, offer solutions, or demonstrate any interest. The Department allows management of terrestrial animals, even endangered species, but ignores similar problems offshore. Ignoring problems does not resolve them. Using selective reporting does not solve problems either. Honesty between government and citizens can restore confidence in government, bring people together, and solve complex problems.

MARINE PROTECTED AREAS

Although a lot of hope was used to form the network of Marine Protected Areas (MPAs) the scientific literature in support of these MPAs is weak. A good example is Point Lobos: Miller, Daniel J., J.J. Geibel, 1973, Fish Bulletin 158, Summary of Blue Rockfish and Lingcod Life Histories; A Reef Ecology Study; And Giant Kelp, *Macrocystis pyrifera*, Experiments In Monterey Bay, CDFG, Marine Resources Division.

Miller and Geibel conclude that a protected area must have three components to be successful: 1) Clean water, 2) good human use resource management, 3) minimal marine mammals. Without these components, MPAs will fail. It appears the Department rejected these findings and replaced them with wishful thinking.

Thank you for the opportunity to comment. I support this attempt by the Commission. The attached article is for your consideration and also for the record.

Respectfully,

Steven L. Rebuck

From: Don Thompson

Sent: Monday, July 30, 2018 9:01 PM

To: FGC <FGC@fgc.ca.gov>

Subject: Re: Staff Report - CA Coastal Fishing Communities Project

It's a shame that there is no appendix to include the public's original comments.

Don Thompson

displaced commercial abalone fisherman

From: William Diller
Sent: Tuesday, July 31, 2018 7:16 AM
To: Hart, Leslie@FGC
Subject: chart on page 24 of Fishing Communities Cumulative report

Follow Up Flag: Follow up
Flag Status: Flagged

The chart on page 24 is incorrect. There was no Federal Vessel Buyback in 1988. Also how the implementation of the the trawl ITQ fishery ie. catch shares, and simultaneous decimation of the central California trawl fleet was left off that same chart is suspicious. Possibly that Lisa Wise Consulting does considerable business with The Nature Conservancy, it was not in their best interest to note that event.

From: tommattusch

Sent: Tuesday, July 31, 2018 9:26 AM

To: FGC <FGC@fgc.ca.gov>

Subject: RE: Staff Report - CA Coastal Fishing Communities Project

At the top of the page for the various fishing communities, there are no processors listed for Santa Barbara Channel Islands area, Half Moon Bay, Bodega Bay or Fort Bragg. Could the pages be re-done to show the number of processors in each port area?

Tom

From: Ken Bates

Sent: Tuesday, July 31, 2018 6:06 PM

To: FGC <FGC@fgc.ca.gov>

Subject: Re: Staff Report - CA Coastal Fishing Communities Project

It was with great interest that we read the Fish and Game Commission staff report on two years worth of "Fishing Communities" meetings conducted coastwide. After the initial meeting in July 2016 in Petaluma, CA we were more than a little skeptical that anything of substance would be accomplished by any future meetings. For this we apologize. So here are our comments on this very well written staff report:

1. We found the report to be an accurate description of comments, trends, and fishermen's concerns over the decline and erosion of fishing, port infrastructure and the culture of commercial in California.
2. Commission staff accurately distilled a wide range of comments and concerns into concise points capable of assisting the Commission, the Department and, in fact, the Legislature in making substantial, timely changes in our fisheries policy
3. The staff recommendations to reverse and correct the present damage inadvertently inflicted on California "small scale" fishing will only be effective if implemented. **Time is of the essence.** The efforts to attempt some small scale fishing diversity and increase access and opportunity have been going on for at least five years. The meetings took two years. If one reads the staff recommendations, at least two proposals/petitions (for small scale trial squid fishing and collaborative squid research on the North Coast), fit exactly within the parameters set by the Commission staff and are totally supported by Marine Life Management Act directives to the Commission and the Department.

So, our question to the Commissioners and the Department:

What are we now waiting for?

It is our feeling that the staff's excellent work has armed the Commission and Department to immediately move ahead with innovative "experiments which even if they might fail, will provide data, experience and wisdom to manage California's fishery resource" (MLMA).

The time to start is now.

Ken and Linda Bates

F/V Ironic

Eureka, California

Alliance of Communities for Sustainable Fisheries
256 Figueroa Street #1, Monterey, CA 93940
(831) 373-5238
www.alliancefisheries.com

Susan Ashcraft

September 20, 2018

Marine Advisor

CA Fish and Game Commission

RE: Comments on Staff Report on CA Coastal Fishing Communities Meetings

Dear Susan,

Please accept these comments from the Alliance of Communities for Sustainable Fisheries (ACSF) on your recent Staff Report summarizing and making recommendations from your (with other FGC staff and Commissioners) seven meetings in various coastal communities. As you may know, several ACSF Board members attended these meetings in Atascadero, Monterey, and Half Moon Bay.

My comments are regarding several of the eight (8) staff recommendations.

Recommendation #1: *Develop and adopt a policy on coastal fishing communities.* Good idea, and it should start with a definition of "fishing community", or as the Magnuson-Stevens Fisheries Conservation and Management Act" (MSA) defines, "fishing dependent community". "Communities" need not be political boundaries, but can also be social and economic groupings, or smaller geographic areas within larger entities. The fishing culture around San Diego's Tuna Harbor and Driscoll's Wharf would be an example.

Once there is a definition, then what? I suggest expanding on language from the CA Coastal Act:

Section 30703: "The California commercial fishing industry is important to the State of California; therefore, ports shall not eliminate or reduce existing commercial fishing harbor space, unless the demand for commercial fishing facilities no longer exists or adequate alternative space, has been provided. Proposed recreational boating facilities within port areas shall, to the extent it is feasible to do so, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry."

Section 30234: "Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer

exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.”

Our Central Coast non-profit *Alliance of Communities for Sustainable Fisheries* may also be a useful model. The Mission Statement of the *Alliance* is “Connecting Fishermen with their Communities”. Our organization makes connections between fishermen and the political subdivision that harbors their vessels, for the purpose of education and to develop support for fishery needs. A state policy that contained a directive to enhance those connections would be helpful.

A state policy that would affect all fishing dependent communities would be one in which the State declares a goal of decreasing imported seafood by 25% over the next 10 years. Like carbon-reduction goals, many actions and benefits to fishermen and their communities would derive from meeting this seafood goal.

Recommendation #4: *Engage Legislative Staffs...* For fishing dependent communities to survive, the level of knowledge of legislative staffs and consultants must be GREATLY improved, if they are to provide accurate information to voting members. The enormous misinformation found in the recent SB1017 (beginning with the bill’s “findings” and including its analysis) is an example of the legislature, fishing communities, and the people of California, being ill-served. In 2011, the attempt to pass AB1299, based again on misguided information, would have severely impacted several California communities, directly through job loss, and indirectly through the loss of fishing infrastructure. Fortunately, the Legislature placed AB 1299 in (permanent) suspense when confronted by fact-based public testimony.

Recommendation #5: *...Increase engagement with sister agencies...like the PFMC...* DFW staff serving on the PFMC must be allowed independence to voice the science-based recommendations of the Department, keeping in mind the needs of coastal fishing dependent communities. The MSA requires that the needs of these communities be considered; so should California policy.

Recommendation #6: *Explore possible community-based adaptable fishery structures (e.g. community permit banks...)*. The partnership between the City of Monterey and the Monterey Bay Fisheries Trust (“MBFT”, a 501-c-3) should be studied, modeled, and expanded to include state-managed fisheries. This partnership represents a clear mission to support community interests in its fisheries. For the state to support this model, it would need to change some rules, particularly around permit ownership, transferability, and leasing, with benefits going to *both* fishermen and communities. The MBFT and its City partner serve to stabilize regional fisheries, and create new opportunities.

Recommendation #7: *Explore...collaborative research...* We have long felt that the science of fishery management is not complete without integrating the years of empirical, “on the water” observations that fishermen can contribute. Fishermen should be involved in the science, including setting study design criteria.

Other Comments:

One problem for coastal, fishery dependent communities not addressed directly in the report and its recommendations is the loss of fishing infrastructure, particularly the loss of fish buyers and processors in California. Having buyers is a critical link in the seafood supply chain. Granted, some fishermen have created their own direct-marketing mechanisms, but these venues cannot feed all Californians, which does occur through the Safeway’s, Vons, Costco’s, etc. A state policy that addresses restoring, encouraging and facilitating larger-scale buyer/processors is needed if fishing in our communities is to survive.

Regarding “access”, the development of state policy should address access issues around state and federal marine protected areas (and other spatial management tools). In the Central Coast, between the numerous state MPA’s, which eliminated some of the region’s best hard-bottom habitat from fishing, and the trawl and non-trawl RCA’s, there is hardly any area left for groundfish fishing. These closures directly and negatively affect fishing communities.

Also, in the attempt to provide more access and opportunities for younger “artisanal” fishermen, it is critically important not to undermine or harm the existing limited entry system. Restricted access fisheries were created for a reason: to prevent overexploitation and create stability in fisheries. This stability has enabled fishermen to invest millions of dollars to harvest sustainable seafood products, and this system is the foundation of California’s fishing economy.

Developing port-area “community sustainability plans” (CSP), and even the possibility of a state-wide CSP, are mentioned in the report, but not included in the recommendations. Two of the ACSF’s member ports have such plans. Fundamentally, they take stock of the condition of all aspects of the area’s fisheries and make recommendations to preserve and grow those fisheries. There is an emphasis on infrastructure (very broadly defined) needs. CSP’s are very useful provided the agencies (cities, port or harbor districts) commit to implementing the plan. We do think that if a state-wide CSP were to be done, it should focus on things the state will do, and likely would be closely related to any new fishing dependent community state policies. Last, please realize that all California fisheries are “small” in the sense that there are no large factory-type trawler/processor or mothership operations. The Staff Report seems to hint at favoring “small” vessels, but really, we have no large vessels. Instead, California fisheries are populated by in many cases multi-generational fishing families, whose family “corporations” provide the bedrock of our fishing communities.

Thank you for accepting these comments on behalf of the Alliance of Communities for Sustainable Fisheries.



Kathy Fosmark

Co-Chair



Frank Emerson

Co-Chair

From: Josh Churchman
Sent: Friday, September 21, 2018 11:19 AM
To: Hart, Leslie@FGC
Subject: Hi Leslie

Follow Up Flag: Follow up
Flag Status: Flagged

I am concerned that there will be many of the small ports in California left with no access to their local fishing grounds. As all the fisheries transition to "limited entry" and all permits to fish are for sale, there will be a migration of permits to areas where quotas are highest.

The concern I have is that once all the permits from any given port are sold, that port may never get them back, and California could end up with quite a few ports with no access to the fish that live there and no way to support their local community with that fish.

My home port of Bolinas, in north central Ca. Had three deeper near shore permits, now there are two. We had twelve crab permits, now there are four. We had ten salmon permits and now there are three. I have the only LE ground fish permit and I will be sixty seven soon. I doubt I will find a buyer in Bolinas.

Ports without fishermen is not a nice gift for the next generation,
Especially when you consider all the trouble we went thru to rebuild the ground fish stocks.

Josh Churchman



CALIFORNIA WETFISH PRODUCERS ASSOCIATION

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September 24, 2018

Susan Ashcraft, Marine Advisor
California Fish and Game Commission

Re: Staff Report on California Coastal Fishing Communities Meetings

Dear Susan,

With both hope and trepidation, I reviewed the Staff Report summarizing perceived take-aways from the Commission's and Marine Resources Committee's (MRC) statewide round of communities meetings. Clearly, the Commission is seeking solutions to sustain California fisheries into the future, despite the uncertainties of climate change. That inspires hope. MRC staff also has invested a lot of time, energy and thought into coordinating the meetings in wide-ranging ports (albeit unfortunately not in San Pedro) and synthesizing this report. I offer the following thoughts and suggestions in the spirit of cooperation, with hope that these comments will be incorporated into the Commission's ultimate vision and policy supporting fishing communities.

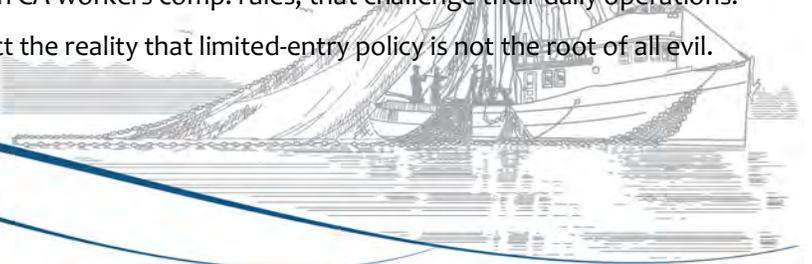
I note that the Commission / MRC initiative is remarkably similar to the Pacific Fishery Management Council's recent and ongoing Climate and Communities Initiative. Both state and federal processes have singled out "limitations on access to fisheries" as a primary limiting factor, and both also appear to point a finger directly at "limited entry" policy as the culprit in restricting fishing opportunity. Therein lies my trepidation. It is critically important to point out, both in the MRC report and the Council's ongoing Climate and Communities initiative process, that limited entry policy was enacted for valid reasons: in large part to prevent overexploitation and ensure stability in fisheries. That stability enabled fishing businesses, including both fishermen and processors, to invest hundreds of millions of dollars into infrastructure, both at sea and on land, and that investment has hugely benefitted the harbors and allied industries that those fisheries serve. For example, see the attached contributions of our wetfish fleet to multiple harbors across CA.

Under Question 1: Unique Challenges – *Fisheries Management Changes and Access* – the staff report stated that the constraints under the Commission's restricted access policy... eroded flexibility within communities ... by reducing participation, prioritizing large operations, and allowing privately owned permits for a public resource.

I suggest that is not only unduly harsh condemnation of limited entry policy, but it is also inaccurate.

First, virtually all fishermen had to qualify to receive limited entry permits, and the main qualifying factor was years of participation in the fishery, not the size of the vessel. Second, limited entry is only one of myriad factors affecting fishing: many restrictions have hampered fishing opportunity, leading to the greying of the fleet and challenges to sustainable fishing communities: Ask most fishermen and they will report that the loss of productive fishing grounds through state and federal MPA processes has played an equal, if not greater role. Add to that the loss or restriction of fishing opportunity through ultra-precautionary management or incorrect stock assessments. Ask processors and they can reel off a list of environmental regulations, not to mention CA workers comp. rules, that challenge their daily operations.

I recommend that this passage be reworded to reflect the reality that limited-entry policy is not the root of all evil.



Amplifying the apparent prejudice, in summarizing proceedings from the workshop that The Nature Conservancy sponsored in support of the Council’s initiative, the TNC report focused on the need for more flexibility, more access for small-scale fisheries, implying that limited entry, transferability and the resultant expensive permits have shifted community structure to “corporate” fishing. Similar themes run through the MRC staff report as well. However, again, it is important to recognize that many California fishermen come from multi-generational fishing families who have worked hard, invested substantially, and protected their investments through family corporations. In the context of large national corporate fishing operations, most California fishermen are actually “small-scale.”

Please also understand that California’s historic “wetfish” industry, peopled largely by these multi-generational fishing families, has produced as much as 80 percent of total California fishery volume, approaching 40 percent of statewide dockside value. As illustrated in the infographic attached to my comments, the wetfish complex is the foundation of many harbor communities. This industry is in jeopardy of collapse if future Commission (and Council) actions undermine the stability that limited-entry policy has fostered. One recommendation from our September Coastal Pelagic Species Advisory Subpanel statement to the Council also is appropriate here. We suggest that the Commission:

Operate under the principle that any response to climate change [or community resilience] must not undermine the goals and objectives inherent in existing limited entry programs.

In that regard, I appreciated your email response following our telephone conversation the other day:

We plan to be more clear that a RANGE of vessel and operation sizes may benefit fishing communities, where appropriate for the port, the fisheries, and diversifying of markets. We will be clarifying the intent, noting that a review of restricted access programs may reveal places for flexibility to enhance community priorities, while still maintaining the program and all of the investments in it.

The Question 1 bullet “*Changing Climate and Ocean Conditions...*” highlighted environmental anomalies and uncertainties that expose challenges to adaptation under the current management structure. The staff report could illustrate this lack of flexibility by noting that PFMC policy now prohibits new fisheries for currently unfished species that likely will migrate into California, particularly southern California, as ocean waters warm. The Commission should be aware of this problem and could help to resolve it through close coordination with CDFW representatives on the Council. This could also benefit fishing communities by encouraging “pop up” fisheries, or expedited Experimental Fishery Permits (EFPs), which would also address data gaps in fishery management.

Regarding Question 3 – *Future vision*, the staff report highlighted common themes of increased flexibility, streamlined permitting processes, and community co-ops among other suggestions. One idea that could also be included in this vision is the concept of community-supported foundations, such as the Monterey Bay Fisheries Trust, that could serve as local permit “banks” where permits could be purchased by the foundation and leased out, either in whole or in part (this would require amending current permitting regulations). This idea is noted under Question 4, potential Commission actions, and it might be one solution to attain flexibility enabling fishermen to access a variety of fisheries in a local or regional setting as needed, and also might encourage young fishermen to enter the fisheries.

Regarding staff recommendations, I have reviewed and concur with most of the recommendations submitted by Mike Conroy/West Coast Fisheries Consultants and the Alliance of Communities for Sustainable Fisheries. I won’t repeat all their recommendations here, but would like to highlight a few key thoughts:

1. *Develop/adopt a policy on coastal fishing communities.* I agree with ACSF that this is a good idea, and the policy should begin by defining ‘fishing community.’ Mike Conroy offered language from the Magnuson-Stevens Act (MSA) as a starting point, and ACSF gave San Diego’s Tuna Harbor as an example. Fishing ports, such as San Pedro / Terminal Island, Monterey / Moss Landing, Santa Barbara, Ventura and other harbors also are examples of unique fishing cultures. Each harbor / fishing community may be characterized by the complex of fisheries that drive the local economy. I also agree with the points made by both ACSF and Conroy to incorporate language

from the CA Coastal Act that support and protect fishing communities in adopting Commission policy. The Commission should also support a policy that encourages and incentivizes reducing the CO₂ footprint in fisheries. We note that California's wetfish fleet is among the 'greenest', most efficient fisheries in the world – capable of producing 2,000 pounds of protein for an average six gallons of fossil fuel.

2. *Review Commission policy on restricted access fisheries.* As noted above, restricted-access “limited entry” policy created the stability that has fostered both sustainable fisheries and harbor vitality. As ACSF comments noted: “... in the attempt to provide more access and opportunities for younger “artisanal” fishermen, it is critically important not to undermine or harm the existing limited entry system. ... This stability has enabled fishermen to invest millions of dollars to harvest sustainable seafood products, and this system is the foundation of California's fishing economy.” It is important to consider restricted access goals, including this stability, when reviewing limited access policy. Please don't throw the proverbial “baby out with the bathwater.”

5. *Direct staff to increase engagement and coordination with sister agencies (e.g.CDFW, PFMC)...* This will be critically important, as noted above, to address the potential northward shift of fishery stocks. Warming in the southern part of the California Current is likely to greatly increase the abundance of pelagic species as well as tropical anchovies, herrings, and other fish into CA. The Council now prohibits directed fisheries on these currently unmanaged stocks.

6. *Explore/research possible community-based adaptable fishery structures.* We support this approach also as a potential avenue to enhance flexibility and fishing opportunity in the face of climate change, both for established fishermen and potential new young entrants. As noted in Conroy and ACSF comments, this will entail modification of current permitting regulations.

7. *Explore filling data needs through collaborative research...* CWPA strongly supports this approach, as we have demonstrated in our industry-sponsored squid research program, which has conducted quarterly field surveys since 2011. We're also engaged in cooperative research with the Department and Southwest Fisheries Science Center to develop an index of abundance of Coastal Pelagic Species (with focus on sardine and anchovy) in nearshore waters in California to improve future stock assessments. We recently completed an aerial survey to develop a variance estimator and validate spotter pilot biomass estimates under Experimental Fishery Permit (EFP) approved by the Council. We're now submitting a letter of intent to continue this project in 2019.

As I'm sure you're aware, we face challenging times ahead, with many unknowns about how the ocean will behave in the face of ocean acidification and climate change. Increased flexibility and adaptability are goals highlighted in both state and federal Climate and Community initiative processes. I will look forward to working with you, the Commission Executive Director and Commissioners to develop policies and actions that hopefully sustain our historic wetfish industry as well as California's fishing communities and fishing economy.

Best regards,



Diane Pleschner-Steele
Executive Director

CALIFORNIA PORTS RELY ON SQUID & CPS FISHERIES

HALF MOON BAY*
 85% of port landings
 33.8% of dockside value

MOSS LANDING*
 94.4% of port landings
 63.9% of dockside value

MONTEREY HARBOR*
 88.8% of port landings
 44.4% of dockside value

VENTURA*
 97% of port landings
 71% of dockside value

PORT HUENEME*
 99.98% of port landings
 99.8% of dockside value

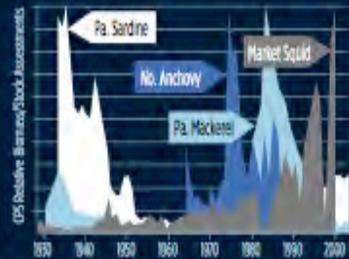
SAN PEDRO*
 99.6% of port landings
 94% of dockside value

TERMINAL ISLAND*
 97.9% of port landings
 87.2% of dockside value

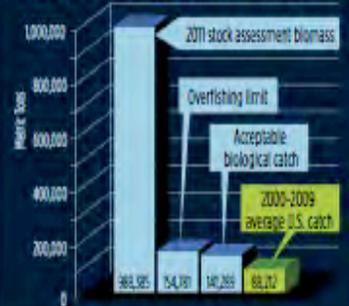
Coastal Pelagic Species fisheries (including market squid, sardines, mackerels, anchovy, coastal tunas) need flexibility in management to account for dynamic ocean cycles and facilitate productive harvest of this complex of species during their unique periods of abundance.

CA CPS fisheries are managed precautionarily with strict quotas/area closures and harvest only a small percentage of the biomass.

DYNAMIC NATURAL FLUCTUATIONS OF CPS



STRICT SARDINE QUOTAS



LOW CARBON FOOTPRINT

To preserve quality, fishing areas for CA CPS are limited to day trips nearby the ports. This makes CA CPS among the most efficient, "greenest" fisheries in the world - with one of the lowest carbon footprints in the world. For example: CA CPS fisheries on average produce 2,000 pounds of protein for 6 gallons of diesel fuel.

SQUID & CPS FISHERIES PROVIDE

82%
of all CA port landings*

4,000 to 4,500
workers employed by CA CPS fisheries

37%
of all CA dockside value*

\$325 MILLION
annual contribution to CA economy*

FISHING AREA

FEDERAL MPA

STATE MPA

NON-FISHING AREA

*2012 preliminary data by port

Artwork by eat.Sustainable.com



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California Fish and Game Commission
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Via Electronic Mail

September 24, 2018

Re: Comments on Staff Report on California Coastal Fishing Communities Meetings

Susan,

First, and foremost, I appreciate the opportunity to provide input on the July 2018 Staff Report on California Coastal Fishing Communities Meetings (“Staff Report”). I applaud the Commission’s interest in the plight of California’s fishing communities and hope the Staff Report will serve as a springboard for further conversations and actions designed to help revitalize fishing communities throughout the State.

Please find the enclosed comments regarding the Staff Report. I break the comments down into two parts: (1) General comments about the subject matter; and (2) comments directly related to the text of the Staff Report. In the concluding section, I offer some additional thoughts and ideas moving forward.

General Comments:

1. There is a need to define “fishing community”.

I can find no definition of “fishing community” within the Fish and Game Code (“Code”) or Title 14 of the California Code of Regulations (“Regs”). The Marine Life Management Act (“MLMA”) and Code Section 8280 both reference “coastal communities”, without defining the term. The

MLMA requires a management system for every sport and commercial marine fishery that has as an objective, “the adverse impacts of fishery management on small-scale fisheries, coastal communities, and local economies are minimized.”¹ It requires that conservation and management measures included in any fishery management plan be analyzed in order to summarize anticipated effects on coastal communities and businesses that rely on the fishery². Code Section 8280 provides the Legislature’s finding and declaration that the Dungeness Crab fishery is important to the state because of economic benefits “to the coastal communities of the state.”³

“Fishing Community” is defined in the Magnuson-Stevens Fishery Conservation and Management Act (“MSA”) as “a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community.”⁴ National Standard 8 (16 U.S.C. §1851(a)(8)) requires impacts to fishing communities be considered when analyzing conservation and management measures⁵. Regulations addressing National Standard 8 further describe a fishing community: “A fishing community is a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or on directly related fisheries-dependent services and industries (for example, boatyards, ice suppliers, tackle shops).”⁶

I think defining “fishing community” should be a top priority as it will inform other parts of the discussion. Too narrow a definition could have unintended consequences – as could too broad a definition. I offer the following as a starting point:

A fishing community is

- (1) a community which is substantially dependent on or substantially engaged in the harvest or processing of marine fishery resources to meet social and economic needs; and includes fishing vessel owners, operators, and crew and fish processors that are based in such community; or
- (2) a social or economic group whose members share a common dependency on the harvest or processing of marine resources or on directly related fisheries-dependent services and industries (for example, boatyards, ice suppliers, tackle shops, etc).

2. Commission powers and limitations:

The stated purpose of the meetings was “to receive public input on issues of concern affecting the vitality and resilience of California’s fishing communities, and the areas in which the Commission can play a role to foster greater stability and long-term vitality.” Understanding there are

¹ California Fish and Game Code §7056(j)

² California Fish and Game Code §7083(b)

³ California Fish and Game Code §8280(a)

⁴ 16 U.S.C. §1802(17)

⁵ Conservation and management measures shall, consistent with the conservation requirements of this chapter (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities

⁶ 50 C.F.R. 600.345(b)(3).

limitations to the Commission's authority, I think it would be helpful to provide a brief overview into what the Commission is empowered to do; and what it cannot do.

3. Ports and harbors are indispensable

Ports and harbors can exist without commercial fishing; but commercial fishing cannot exist without ports and harbors. To maximize economic opportunities, port and harbors need viable and thriving commercial fishing operations as part of their working waterfronts. Working waterfronts draw tourists, enhancing the local economy. Without adequate infrastructure necessary to support fisheries and activities associated with fisheries and working waterfronts, no amount of access to the resource will ensure the survival of the State's fishing communities. The California Coastal Act⁷ was enacted to "enhance public access to the shoreline, protect coastal natural resources, and balance development and conservation."⁸ The Coastal Act recognizes and protects the economic, commercial and recreational importance of fishing activities⁹. There are two provisions of the Coastal Act which speak to the importance, and priority, of the commercial fishing and recreational boating industries:

*Public Resources Code §30234*¹⁰ - Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.

*Public Resources Code §30703*¹¹ - The California commercial fishing industry is important to the State of California; therefore, ports shall not eliminate or reduce existing commercial fishing harbor space, unless the demand for commercial fishing facilities no longer exists or adequate alternative space has been provided. Proposed recreational boating facilities within port areas shall, to the extent it is feasible to do so, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.

These Sections were adopted in 1976, the same year the MSA was signed into law and long before the MLMA and Marine Life Protection Act became law. These laws, and later adopted regulations, were designed to ensure the sustainability of marine fishery resources. They also required science-based management which resulted in decreased opportunity and limitations on allowable harvest of certain key species. This reduction in opportunity and harvest led to a reduction in demand for facilities and/or harbor space for the commercial fishing industry. With this reduction in demand,

⁷ Public Resources Code Sections 30000 – 30900.

⁸ Diamond, Jordan; Doremus, Holly; Manupiatpong, Mae; Frank, Richard; Oh, Shauna; Hecht, Sean; Sivas, Deborah; Armsby, Matt; and Herbert, Jocelyn, "The Past, Present, and Future of California's Coastal Act: Overcoming Division to Comprehensively Manage the Coast" (2017). Center for Law, Energy & the Environment Publications. 46. Page 3 <http://scholarship.law.berkeley.edu/cleepubs/46>

⁹ Public Resources Code §30234.5

¹⁰ See - http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC§ionNum=30234.

¹¹ See - http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC§ionNum=30703.

space and facilities previously serving the commercial fishing industry; were redesignated to alternate – more profitable – uses. Even today, ports and harbors which serve the State’s commercial fishing industry subsidize those operations. Most charge reduced rates for bonafide commercial fishing vessels and businesses. There is an economic incentive for ports and harbors to minimize commercial fishing space.

We must remember that not all ports and harbors are alike. While the bigger and more diversified ones (San Diego, Los Angeles/Long Beach, San Francisco) can more easily absorb economic losses associated with serving the commercial fishing industry, others cannot. Unfortunately, most of these smaller ports within California serving the commercial fishing industry are located along the North Coast. Increased or new opportunities made available to fishermen in these smaller ports and harbors will not result in any tangible benefit without adequate infrastructure to support these opportunities. Unless and until, ports and harbors serving the State’s commercial fishing industries make a commitment to these fisheries; it will be difficult to expand operations in certain ports.

It is imperative that local Port and Harbor Commissions be consulted and an inventory of fishing (commercial and recreational) infrastructure and facilities be undertaken. Examples, by fishery component, should include at least the following:

Commercial

- Acreage (if known) of land and water areas designated for commercial fishing uses;
- Number of slips for commercial fishing purposes and berthing fees, noting any differences between home port vessels and transient commercial vessels;
- Commercial fishing revenues over the last ten years (easily obtained via DFW website - <https://www.wildlife.ca.gov/Fishing/Commercial/Landings>)
- Services provided, including but not limited to:
 - Fuel dock(s);
 - Offloading infrastructure and fees charged for use;
 - Adequate roadage for appropriate-sized trucks to reach offloading areas;
 - Post-offload product handling (freezer space, live tanks, refrigerated areas, etc)
- Buyer/Processor presence – if so, how many;
- Shipyard presence and maximum size vessel that can be accommodated;
- Amount of dock or fishermen’s market space available for sales direct to public;
- Amount of space for gear storage and/or net mending and fees associated with each;

Recreational

- Acreage (if known) of land and water areas designated for recreational fishing uses;
- Number of slips for recreational fishing purposes and berthing fees;
- CPFV presence and if so, how many berths and maximum number of CPFV vessels utilizing the facilities during the calendar year;

Both commercial and recreational:

- Copies of most current Port Master Plan;
- Number of launch ramps and are there any limitations on their usage;
- Who is responsible for dredging and how often does it happen;
- Presence of live bait operations;
- Number of parking spots reserved for each fishery component.

Comments directly related to the text of the Staff Report:

Background.

In reviewing the petition documents submitted in 2014, there was mention of helping “restore our broken economy at the northern California harbor of Noyo, in Fort Bragg¹²” but nowhere were other harbors in the north coast mentioned nor fishing communities. I will agree that the conversation shifted to cover those; but to say this was the “expressed intent” is incorrect. The express intent of the original submission was to gain access to Experimental Fishing Permits (“EFPs”) authorized under the Market Squid Fishery Management Plan. Since these EFPs were time-barred, the petitioners sought other avenues to gain access to the market squid fishery.

Coastal Fishing Community Meeting Highlights

1. Unique Challenges (Question 1)

a. Fisheries Management Changes and Access

- i. While “limitations on access to existing fisheries due to current fishing access and permit structures and constraints under the Commission’s restricted access policy” was certainly mentioned; as one who attended a great majority of the meetings, the main complaint regarding limitations to access was the State’s network of Marine Protected Areas.
- ii. I may be reading too much into the document; but it appears there is a linkage drawn between the restricted access policy and decrease in fishing fleets in many port areas and the blame for this is being placed on larger vessels. While there are some fisheries which operate more efficiently with larger vessels (Purse seine tuna, squid, and other CPS fisheries) there are a number of fisheries which do not (spiny lobster, the still experimental deep-set buoy gear, and Salmon troll). Efficiency and economies of scale need to be considered as well.
- iii. I am not disputing that “coastal fishermen have prioritized fisheries access policy as the highest concern for sustaining fishing communities”; but without adequate support from local ports and harbors in terms of subsidies and infrastructure – merely providing access will neither benefit, nor sustain, fishing communities.

b. Changing Climate and Ocean Conditions, and Environmental Impacts on Fisheries

- i. First sentence is missing a word between “cumulative” and “on”. I suspect “impacts” was the word.

¹² Fax from Dan Yoakum and Mary Fairbanks clarifying request and requesting additional experimental squid vessel permit for additional vessel, received September 23, 2014 (PDF). See - http://fgc.ca.gov/meetings/2014/oct/exhibits/13_4_LTR_RequestFollowUp_SquidExpPermit_YoakumDan_FairbanksMary_092314.pdf

- ii. If you are going to call out “increased interactions with protected species” you should add “Increasing Populations of Protected Species” to the heading. We are seeing more and more instances of two categories of protected species interacting. California Sea Lions, protected under the Marine Mammal Protection Act, are having adverse impacts on endangered/threatened salmon, steelhead and sturgeon stocks. Federal legislation has been introduced which will address these interactions. With many salmon populations in California also listed under the Endangered Species Act, it is not outside the realm of possibility that similar conflicts will occur in California State waters or rivers.
 - iii. While we are surely seeing changes in the ocean, we must also not forget that The Blob and the recent strong El Nino event likely exacerbated this. We need to acknowledge these extreme ocean events have different impacts on the various fisheries and a one-size-fits-all approach may not be feasible or beneficial to the State’s fishermen and fishing communities.
- c. Loss of Historic Fisheries
- d. Flexibility to Tailor Fishing Opportunities to Port-Specific Conditions
- i. First sentence, “individual fishermen and” should be added before “communities”.
 - ii. I think it would be beneficial to discuss alternate marketing arrangements under this bullet point. We are seeing more fishermen’s markets and other means of selling product direct to the customer. Anything that can be done to ease red tape associated with this movement would be helpful. For example, different local health departments are interpreting provisions of the Pacific-to-Plate Legislation differently; while one fishermen’s market can sell filets, another cannot. This could be incorporated as a potential staff recommendation; or be identified under Item 4 (Engage legislative staff) of that section.
 - iii. This topic does touch upon the inequities in terms of representation before managing bodies. While it is true that some fishing organizations are more economically able to utilize paid advocates; it pales in comparison to the economic ability of eNGOs to lobby for their preferred outcomes. Travelling to a Commission meeting (often at great distance from our port) or a PFMC meeting, generally, is paid for by the individual fishermen. In addition to these costs, we lose income and revenues from lost fishing time. eNGO staff are paid to be at these meetings and their costs are paid for by the Corporate nonprofit entity. Quite often, our nonappearance is interpreted as us not caring when it is more likely based on economics (ours and our families, our crewmembers and their families, and our fishing community).
- e. Deteriorating Infrastructure
- i. Given the lengthy discussion above about the Coastal Act and the need to bring ports and harbors into the conversation, what is provided here seems too simplistic.

- ii. This section really highlights the need to perform a detailed inventory of facilities and infrastructure available within all of California's ports and harbors serving the commercial and recreational fishing industries.

f. Retaining Local Markets

- i. Once again, I believe this is too simplistic of a statement of the problem. Suggest rewording as follows (for your convenience I have tracked changes to the language contained in the Staff Report):

Fishing communities are faced with the challenge of retaining local markets for seafood fish products since they experience competition from with non-California product importations, especially foreign imports where costs associated with harvesting are lesser. Most, if not all, nations which import seafood and seafood products into the U.S. have less stringent fishery rules and regulations, which results in lesser costs to harvest. Without a steady supply, some markets are forced to rely on imports to ensure their needs are met. Sometimes after a fishery closure, markets may fill the product gap with imported product and they do not tolerate variable catch. There is an increased demand for buying local fish, yet fishermen have limited access and struggle to meet the demand. Ports and harbors with local fishermen's markets are seeing some success in addressing this problem.

g. Complex Regulations (both State and Federal)

- i. Second sentence – is “interpolate” the right word? I suspect you may have meant extrapolate?
- ii. Second sentence – it isn't just party boats that “have to know and understand regulations for all species”. I fully support an audit of Title 14 of the California Code of Regulations to eliminate expired or legally unnecessary regulations (ie – if a subsequent enacted Code section invalidates or moots a regulation) and for the rest, determine if and how they could be simplified

h. Permit Availability and Costs

- i. Re the high cost of permits on the open market - while this is true, there are some creative ideas out there for how this can be addressed.
- ii. While market squid vessel permits may be designed for high vessel capacity; the way it is currently worded makes it sound like this is a problem across all limited entry fisheries. The trap limits associated with the Dungeness crab fishery were created by the legislature; thus, it would be up to the legislature to address. For other limited entry fisheries, I am not sure the broad statement is true.
- i. Recruitment of New/Young Fishermen

- i. To say that this problem is solely because of the “high cost of entry into the fishery” is not correct. Suggest rewording as follows:

Due, in part, to the high cost of entry into fisheries that operate off our coast, the fishery, there is a shrinking fleet and lack of young fishermen entrants. Other factors include negative public perception of commercial fisheries, latent permits which are not available to potential new entrants, overbearing and costly regulatory burdens including VMS, AIS and carrying of observers (which all entail a cost to fishermen), and a lack of support from fishery managers in promoting local fisheries.

- ii. Second sentence – I completely disagree that there is a “limited career trajectory”. I would suggest replacing “With a limited career trajectory for young fishermen” with “Without programs designed to attract new and/or young fishermen”

j. Data Gaps in Fishery Management

- i. Second sentence – suggest adding “working with federal and state agencies to assist in” between “by” and “collecting”
- ii. After the last sentence, add the following, “Earlier this year, the California Wetfish Producers Association (“CWPA”) was awarded an Exempted Fishing Permit to participate in a research project designed to quantify the level of uncertainty in the biomass estimates from aerial spotter pilots. This was accomplished by capturing Coastal Pelagic Species (Pacific Sardine, Northern Anchovy or Pacific Mackerel) schools identified by aerial spotter pilots and validating the biomass and species composition of the schools. This type of collaboration between the CWPA, the DFW and Southwest Fishery Science Center could serve as model for industry participation in filling data gaps.”

k. Competing Uses

- i. The portion of this section which addresses ports and commercial fishing facilities should mention the Coastal Act’s prioritization of commercial fishing. While ports and harbors may prefer gentrification, they are constrained by the mandates of the two sections of the Coastal Act noted above. Fishermen in those ports need to become involved in Port and Harbor Commission meetings to ensure that proposed actions do not run afoul of the Coastal Act. The Fish and Game Commission should consider asking the Coastal Commission to consult with them whenever a proposed port or harbor action/project directly impacts commercial fishing facilities or infrastructure.

2. Current Adaptation Strategies (Question 2)

I believe there is a word missing between “no” and viable” in the second sentence. Perhaps “longer”? Also – are you referring to economic viability or some other form?

3. Future Vision (Question 3)

Only suggestion would be to change the second to last bullet point to read, “Electronic representations of the current fishing regulations in waters adjacent to each port”

4. Potential Commission Actions (Question 4)

Second bullet point – should it read “consider the needs of fishing communities”? I also note the MLMA does implicitly require this.

Sixth bullet point – I note that SB 518, which will accomplish this, was pulled out of the Assembly Appropriations Committee Suspense file on Aug 16 and was recommended for a floor vote. On August 30, it was placed in the Inactive File, effectively killing the Bill.

Seventh bullet point – I fully agree that this could be a worthwhile endeavor; but I also wonder - given the different issues impacting the different ports and fisheries - is a State-wide plan preferable?

Eighth bullet point – all fished species without regard to life expectancy? For example, does it make sense to require a stock assessment on market squid? Given their life span ranges from 6 – 9 months, it is likely every animal “counted” for purposes of assessing the stock will be dead by the time the assessment is published. I also imagine the DFW doesn’t have the staff, budget or time to assess every fish species.

Eleventh bullet point – keep in mind that there will be displaced fisheries by creation of artificial reefs. Trawl and net fisheries will lose those areas as nets and reefs don’t peacefully coexist.

Twelfth bullet point – I am unsure about the legality of restricting permit transfers to in-state or regional areas. Are there other states which have implemented such restrictions? Check with Commission and Department legal staff on any dormant commerce clause implications.

Thirteenth bullet point – Both the PFMC and FGC are open meetings that the public can attend and participate in. DFW already does a Council delegation call, open to the public, shortly before each Council meeting which gives interested persons opportunities to offer their thoughts and concerns.

Staff Recommendations: Initial Concepts for Potential Development

1. Develop and adopt a policy on coastal fishing communities

As noted above, this would seem to necessarily require a definition of “fishing community”. Regarding developing a policy on such communities, I think the Regulations implementing National Standard 8 would be a good starting point. See – 50 CFR 600.345¹³.

¹³ See - <https://www.law.cornell.edu/cfr/text/50/600.345>

2. Review the Commission’s policy on restricted access commercial fisheries

In the second sentence, recommend adding “to and” between “consequences” and “in”.

I suspect a review of this policy will be a separate document. Note, there seems to be some overlap between commission policy and legislative mandate. In those areas where the legislature has spoken, that would seem determinative; absent amending the law.

3. Identify specific projects to test new approaches

After the first sentence, consider adding the following, “Acknowledging that permit holders are key stakeholders in helping to create, design and define these projects.” We also need to be mindful that any project which expands access; and negatively impacts the permitted fishery, could be subject to litigation.

4. Engage legislative staff to pursue adjustments to laws as ideas are refined, through vehicles such as the current fisheries omnibus bill

Agree that legislation may, in some instances, be necessary; but every effort has to be made to ensure a "knee jerk" reaction doesn't become law. Careful consideration of impacts resulting from potential legislation must be undertaken to avoid unintended consequences.

5. Direct staff to increase engagement and coordination with sister agencies on management decisions affecting California

Fully agree. My only suggestion is to remove “etc” as this is too important, and all potential agencies need to be identified. Three glaring omissions – State Lands Commission, local Port/Harbor Districts and Bureau of Ocean Energy Management.

6. Explore/research possible community-based adaptable fishery structures (e.g., community permit banks or risk pools)

First sentence - consider adding “and opportunities” after “responses”.

As you know, I fully support this idea. I think permits should be capable of being owned by non-profit entities representing fishing communities. These permits will have to be leasable – which is not currently allowed by the State. I think an ability to subdivide the permits will be necessary as well. Examples:

- Each Ca Spiny Lobster permit can fish up to 300 traps. If a community bank was implemented and purchased a transferable lobster permit, it should be allowed to subdivide this permit into three non-transferable permits able to fish up to a maximum of 100 traps. These non-transferable permits would return to the community bank if/when a fisherman using one of these permits purchases his/her own permit or he/she voluntarily surrenders it back to the community. The permit held by the community would still be transferable should there be no interest by fishermen in the local community. There are a number of

details which would have to be ironed out – for example, to avoid speculating; there should be a requirement that if there are no landings under this permit – it reverts back to the State or has to be sold on the open market.

- Permitted Market Squid Vessel and Brail vessels are assigned a gross tonnage endorsement based upon dimensions of the vessel. If a community bank were to purchase a transferable Vessel or Brail permit, it should be allowed to subdivide this permit into a number of non-transferable permits; provided the total gross tonnage represented by the non-transferable permits does not exceed the gross tonnage endorsement on the permit. Assume Vessel A has a Market Squid Vessel permit with a gross tonnage endorsement of 100 tons. Assume Community Bank B purchases this permit. There are 5 commercial fishing vessels (Vessels V, W, X, Y and Z) located in the port/harbor that Community Bank B serves who are interested in fishing squid. Community Bank B should be able to subdivide the 100 gross tonnage endorsement amongst these 5 vessels. Other restrictions on these permits, as noted above re the lobster fishery; would be equally applicable here.

7. Explore filling data needs through collaborative research and data collection

Fully agree with this and would hope the EFP issued to the CWPA, as well as their ongoing research on the squid fishery, will prove to be models for future collaborative research activities.

8. Survey communities, commercial and recreational fishers, and processors about their priorities for Commission focus

Would like to see ports and harbors added to the list of those surveyed

Appendix A - Common General and Port-Specific Challenges

Because this is merely reporting comments given during each meeting, I won't comment; but rest assured I do have some strong opinions on some of the challenges included. While most are discussed above, there are some items which I didn't address – ie: increased landing taxes.

Conclusion

I believe the Staff Report represents a solid foundation upon which to build a strong and robust a Policy designed to protect and revitalize California's fishing communities. Creating and supporting a blue-ribbon panel, like that mentioned in the comment letter submitted by the PCFFA, is an excellent idea and affords an opportunity to bring together fishermen and fishery representatives from across the State.

The comment letter submitted by the Alliance of Communities for Sustainable Fisheries raises an interesting idea regarding the use of Community Sustainability Plans ("CSPs"). CSPs are rooted in the MSA and are required for communities which seek to be eligible to participate in limited access privilege programs (ITQs). The Staff Report may want to consider how CSPs, or a variation based on CSPs, could be used State-wide, regionally or port-specific. This would seemingly necessitate the inventory suggested on Page 4 of this comment letter.

Once again, I wish to offer my sincere appreciation for being able to comment on the Draft Staff Report. I assume there will be additional opportunities to comment on the Staff Report when finalized. As such, I tried to limit my comments to the text of the Draft report – and not to the implications of some of the items. The implications, as I see it, will be more appropriate after the Public Draft of the Fishing Communities Staff Report is issued.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Conroy", written over a light gray rectangular background.

Mike Conroy

From: Pete Halmay
Sent: Monday, September 24, 2018 4:52 PM
To: FGC
Subject: Fishing communities report comments

Comment

Resource users can self-organize to maintain their resources rather than having governments impose solutions. General solutions based on inadequate, not site specific data cause as many problems as they solve. The idea of fishermen self-organizing is not novel and Ostrom has identified the subsystem variables that affect the likelihood of self-organization in efforts to achieve a sustainable social-ecological system (SES).

This approach would require support for Port based fishing organizations to develop rules and norms that would guide fishermen in decision making and conflict resolution.

Best,
Pete

Peter Halmay
Insight based on 48 years of fishing and decades of work to develop social capital.

Sent from my iPhone

From: Art Seavey <art@montereyabalone.com>
Sent: Monday, September 24, 2018 5:50 PM
To: FGC; Trevor Fay
Subject: comment regarding

To Whom It May Concern,

Thank you for this opportunity to comment regarding the mission of the Fish and Game Commission.

I have been a partner in a small abalone farm since 1994. In the mid 90's, 13 different groups had permits to farm abalone in our state. Today, there are just four operating farms. The Commission has not issued a new state water bottom lease for aquaculture in 20 years. There has never been a marine fish farm in California, salmon farming is illegal. Shellfish farming remains, though in a precarious state after decades of decline.

The Department of Fish and Wildlife is the lead agency for aquaculture in California. Unfortunately, it appears as though the Department has abdicated this responsibility to the California Coastal Commission because the CCC, through restrictive and expensive permit conditions determines the operating conditions for any and all aquaculture in the coastal zone.

I would respectfully request that the Commission provide leadership to the Department and the state in order to invigorate responsible stewardship of the appropriate resources for aquaculture in our state. There is immense potential for sustainable, healthy food production!

Thank you for considering this request.

Art Seavey, Partner

Monterey Abalone Company

David Bitts
President
Larry Collins
Vice-President
Lorne Edwards
*Secretary &
Treasurer*

**PACIFIC COAST FEDERATION
of FISHERMEN'S ASSOCIATIONS**



www.pcffa.org

Noah Oppenheim
Executive Director
Glen H. Spain
Northwest Regional Director
Vivian Helliwell
Watershed Conservation Director
In Memoriam:
Nathaniel S. Bingham
Harold C. Christensen
W.F. "Zeke" Grader, Jr.

Please Respond to:

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September 24, 2018

TO: Susan Ashcraft
Marine Advisor, California Fish and Game Commission
1416 Ninth Street, Suite 1320
Sacramento, CA 95814
Submitted electronically to fgc@fgc.ca.gov

RE: Comments on Staff Report on California Coastal Fishing Communities Meetings

Dear Ms. Ashcraft,

On behalf of the Pacific Coast Federation of Fishermen's Associations and our fourteen member organizations comprising over 750 commercial fishermen and women living in California's fishing-dependent communities, we write to provide comments on the Fish and Game Commission's draft Staff Report on California Coastal Fishing Communities Meetings ("report").

Many of our members participated in the fishing community meetings the Commission hosted and we appreciate the time and attention taken to produce the draft report. The report, and the effort it represents, has tremendous potential to guide the Commission's policies regarding the future of commercial fisheries in California. We look forward to working with as you work to enhance and finalize the report.

We have divided our comments into guidance for new policy considerations and constructive criticism on the contents of the draft report.

I. A vision based in innovation and collaboration to enhance management outcomes

As the report highlights, there are readily identifiable gaps between the needs of fishing communities and the abilities of, mandates for, and services performed by state regulatory agencies. We feel that some of these gaps can be addressed simply by designing projects and policies that establish trust and enfranchise commercial harvesters in the various management processes. When provided a stronger role in management, and when agencies and managers are enabled and trained to engage, fishermen can bring their knowledge and experience to bear in ways that enhance regulatory processes and achieve management objectives more efficiently. Collaborative partnership between managers and fishermen, and strategies to align economic incentives with quality management and monitoring, can also be supported by revisions to policy frameworks. This is all the more urgent as rapid and unpredictable climate change ups the role of

more intensive monitoring to understand changing resource status and economic vulnerabilities tied to these changes.

Against a backdrop of rapid climate-driven ecological change, it becomes harder to associate any human actions with ecological response with high degrees of certainty. Thus, in the future it may be less likely that any human action (whether harvest or management) will yield predictable responses in a fish population. There will be climate winners and climate losers, and the Commission must ensure that its policies enable the winners while supporting the losers as they transition to other opportunities.

This regime of ecological uncertainty differs from the steady-state management approaches conceptualized by the fisheries scientists of the last century, and from the fishing-driven ecosystem change that intensified around the turn of the century. A suite of management actions designed to reduce fishing pressure by rationalizing fisheries and implementing networks of MPAs have led us to an era in which the level of fishing effort for many fisheries in California is at historical lows for the past 50 years, while the intensity of climate stressors has climbed. The socioeconomic consequences of these actions have been severe: losses of opportunity, infrastructure, and confidence are rampant; these profound losses were articulated repeatedly during each of the fishing community meetings.

This reality leads should lead to a new conceptual framework by which to approach natural resource management: **California must take proactive and innovative measures to manage for socioeconomic and ecological resilience in our fisheries.** Steps must be taken by agencies to bring fishermen and managers into alignment on how these measures are designed and how they are implemented.

The draft report contains several recommendations that our organization agrees with, but it would be strengthened by additional content and sophistication. We suggest including an additional goals and objectives section of the report and aligning the final recommendations with the goals and objectives contained therein. Goals and objectives should be informed both by a thorough analysis of existing Commission and CDFW mandates to preserve and protect fishing communities, and any additional goals and objectives not explicated in statute that were elucidated during the community meetings. We stand ready to assist in this regard, including facilitating dialog between members of the commercial fishing industry and Commission staff/members as time and availability allow.

Here we provide several recommendations that build on the draft contents of the Fishing Communities Report:

1. The report should include a review of the current mandates dealing specifically with fishing communities found within the Fish and Game Code and/or driven by the state's coordination with federal management processes under the Magnuson-Stevens Act.
2. The report should more specifically reference and reflect the provisions reviewed based on our recommendation (1) and, specifically, the MLMA's various mandates for supporting fishing community needs.
3. The report should include a new section listing goals and objectives for managing marine resources in order to support fishing communities, and it should specifically align the final recommendations with those goals and objectives where appropriate.

4. The report should include a section on the public trust, including a discussion of the Commission's various mandates to preserve access and enhance beneficial uses, as well as discuss how these relate to fishing community needs identified in the fishing community meetings and elsewhere.
5. The report should focus on innovative approaches to data and collaboration with members of the fishing industry. The time is now to deploy an arsenal of ecosystem and fisheries indicators built on fishing behavior and fisheries-dependent data. Engaging fishermen in fisheries-dependent research while refraining from prescriptive and costly monitoring mandates whenever possible aligns fishermen with managers, facilitating trust and partnership. Let's invest in pushing digital data collection systems by the Department and smartphone platforms for engaging fishermen in monitoring on the water. With these new tools and capacity, collecting more comprehensive data on size structure of catch and CPUE are cost-effective.
6. The report should focus on recommending new approaches to enhanced local co-management, which are urgently needed as fish stocks shift their locations with warming sea temperatures. Importantly, however, a management regime focused on increased flexibility also comes with pitfalls. Stock assessments and fishery management plans must be designed to enable flexibility during and between cycles. In addition, Experimental Fishing Permits should become a standard part of the management repertoire, and the Commission should familiarize itself with them and become comfortable adjudicating their use.
7. The report should include recommendations for the review of the Commission's and Department's budget processes with respect to supporting fishing communities, including a review of the funding for mandates listed based on our recommendation (1). The report should include specific recommendations for how the Commission could best approach the forthcoming service-based audit of the CDFW in order to improve its mission and better meet the goals and objectives of the report based on our recommendation (3).
8. The report should specifically address anadromous fisheries and the ways that the Commission can support communities that rely on them. The Commission's regulatory authority includes approaches to supporting the integrity of public trust anadromous fisheries for the benefit of fishing
9. Any new Fishing Community policy framework should be founded on and explicitly enumerate the reinforcing pathways between the biological sustainability of fisheries and the economic sustainability of fisheries. Further, Fish and Game Code needs fleshing out on the mechanisms for the Department to prioritize minimizing adverse impacts to fishing communities, responding quickly to environmental and socio-economic factors harming fishing as a livelihood, and communicating with fisheries stakeholders.
10. The number and quality of tools available to managers is a limiting factor in being able to respond adaptively to environmental change, especially in ways that are protective of the economic stability and success of fishing. Permit stacking (e.g., the Bristol Bay gill net sockeye fishery) is a great example of how a fishery can adaptively expand and contract with the resource with a mechanism that is economically rational.

11. Challenges to access and changes to access are the prime message of the report. We urge the Commission to make limited entry reform a priority. A blue-ribbon panel, which is representative of stakeholders and chaired by 1-2 commission members, could be tasked with producing a set of detailed, well-researched recommendations on how to align the limited entry policy.
12. The report should make specific recommendations for the support of redeveloping and maintaining port infrastructure. We incorporate by reference comments provided by the Alliance of Communities for Sustainable Fisheries and Mr. Mike Conroy, regarding infrastructure support, particularly the suggestion of the State-level adoption of the MSA's Community Sustainability Plan program, which provides a framework for implementing an analysis of community needs in a structured and uniform basis.
13. Market access and market dynamics must be considered in assessing the impact and effectiveness of new management actions. To do so, fishermen should be engaged as co-designers of new permits to make them economically feasible.
14. The report should encourage the development of innovative solutions to mitigate risk in commercial fisheries in the face of climate change and uncertainty. Financial tools to mitigate risk can add to the strategies for rapid recovery from fisheries disasters.

II. Ideas for improving the quality and utility of the report

1. The synopsis of answers to the 4 core questions gathered at the meetings is a highly valuable product, and as such, we feel that the descriptions of topics under Questions 2 and 3 could be fleshed out. Relative to the very informative information under Question 1, these two are fairly brief and unclear in places.
2. In Question 2, more detail on the context in which these 4 listed adaptation strategies played out is important to document. Can you provide any insight into which of challenges listed in Question 1 (or something else) were mentioned as the likely triggers and causes of these adaptations? Did you hear perspectives on how well each of the adaptation strategies worked? Whether they had lasting positive or negative impacts on the nature of commercial fishing operations in the ports? Were these changes mostly permanent or temporary? Also lacking from the list is the frequent scenario in which fishermen must turn to public or family assistance because they do not find ways to implement these adaptation strategies. This is important to document here. The fisheries closures that led to Federal Disaster Assistance provide examples of this that are well documented in State senate hearings, etc.
3. The descriptions of topics under Question 3 are sometimes unclear and should be explored and developed more completely. What does 'streamlined' refer to? Could an example or two be given? Why should 'marine protected area collaboratives' be embraced, and what value do they provide to efforts to support communities? What does 'electronic representations' mean? 'Modernization of facilities' is vague. Each of these bullet points deserves at least 2-3 sentences of description, context and use of examples where possible.
4. Permit transferability, a critically important issue area for this report with a vast amount of complexity, is repeatedly mentioned in the report with little background or context. The report would benefit from an introduction to the topic within the 'synopsis of perspectives.'

This is an important component of access that isn't mentioned in the section on 'fisheries management changes and access.'

5. The Recommendations section begins by pointing out that each suggested action gathered and listed in the report could be labeled as 'Management' 'Policy' or 'Other.' Perhaps this could be actually done in the report? It would add clarity, inform expectations, and help focus the conversation moving forward.
6. The stated goal was to develop potential 'pathways forward.' This effort presumably will be founded on the list of 8 stated recommendations at the end of the report. Many of these recommendations are lacking a basic definitions, a statement of reason and justification. Below are suggestions for strengthening the clarity and utility of these recommendations:
7. The 1st priority listed needs a bit more clarity, given its top position. What is meant by this and what role it would play? For instance "This policy would be a vehicle for addressing x, y and z..." or "This policy would fill a gap that exists..." How might this policy might be generated? Are there examples elsewhere to draw from and/or ideas of what it might include?
8. The 2nd recommendation could be strengthened by focusing on generating changes to the policy in response to a review of the past performance of the policy.
9. The 3rd recommendation begs for an example. Please define what 'small-scale fishing opportunities' refers to or is defined as, and explain what is meant by 'information gaps.'
10. The 4th recommendation is somewhat obvious and vague. Can you explain how this should be done differently than how it is already being done?
11. The 5th recommendation also needs sharpening and focus. There is one prior suggestion in the report that CDFW engage more with PFMC, but there is no context as to why and how? We assume that there is good justification for this, but without explaining the justification, it is difficult to motivate follow through and guide it to be done effectively. Please replace 'etc.' with named entities. To recommend that CDFW just engage 'with everyone more' is not effective advice.
12. The 6th recommendation is concrete and specific - a good example to borrow from in how to improve the other recommendations.
13. The 7th - did the set of community meetings provide any starting list of specific data gaps and examples of collaborative research to build on? This should be included as an appendix.
14. The 8th - Can you describe this in more detail so it doesn't appear to be asking for the same process to be repeated? Perhaps the report could include a section on information that was sought through the process, but not well acquired. Describe which topics were difficult to inform through stakeholder engagement, and which have been well informed.
15. In appendix A, please use full sentences in order to communicate these ideas clearly, and leave less chance of misinterpretation. Examples: what does 'decreased food system viability' mean? Complete the sentence: 'Fishery and area closures are...'

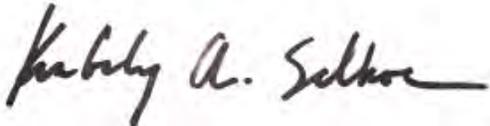
16. Please consider creating transcripts of the meetings so that they can be more fully utilized in the study of fishing communities.

We applaud the Commission's time and attention to this critical matter for our members, and we stand ready to assist in the completion of this report. Please don't hesitate to contact us with any questions or to continue the conversation. We look forward to reviewing your responses to these comments.

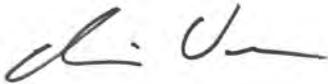
Sincerely,



Noah Oppenheim
Executive Director, PCFFA



Kimberly Selkoe, Ph.D.
Executive Director, Commercial Fishermen of Santa Barbara
Marine Scientist, UC Santa Barbara



Chris Voss
F/V Bella "B"
President, Commercial Fishermen of Santa Barbara

From: PETER FLOURNOY 2
Sent: Monday, September 24, 2018 4:04 PM
To: FGC
Subject: "Fishing communities report comments,

Dear COMMISSIONERS OF THE FISH AND GAME COMMISSION:

As I understand it, the idea for this project was first considered in 2014, and actually begun in July 2016. I think a study to evaluate the Commission's (and for that matter the Department's) policy approach to coastal communities and fishermen was a good and timely idea. However, in the two years that have followed, I believe more might have been done in terms of out reach to commercial fishermen and coastal communities.

I am guessing that the initial response to this constructive criticism will be a lack of personnel and monetary resources. To me that is the major issue which is missing from the discussions in this report, but one I certainly heard mentioned frequently in the meetings I attended. I think the report identifies many of the issues which are crippling commercial fishing off the West coast and more specifically, California. Some of the staff recommendations are quite worthy of implementation. Nevertheless, none of this will be accomplished unless there is more money, time, and energy put into our coastal communities that do, have, or could depend on fishing.

There are charts included for 6 ports (not including San Diego, the meeting I attended where there was very little Commissioner participation), but I didn't see much analysis of what the charts and comparisons actually mean. There needs to be a decision that California coastal communities are worth investing in for more than just seaside condos and huge sport fishing marinas where vessels get used infrequently. One reason this decision needs to be made is because the State budget and the State treasury need to make this a priority. I believe it was last year that the Governor was concerned about the shortfall in Fish and Wildlife's income over expenses. The proposed solution was to balance the Department's budget by increasing the commercial fish landing fees millions of dollars. Pulling more money from fishermen who are already struggling for all the reasons listed in the report and more, is pretty clearly not the answer.

In San Diego we have established a fishmarket for people to buy fresh, sustainably caught, fish directly from the fisherman. It has been a four year marked success. In addition to selling fish for higher prices for fishermen, and giving the public fresher, local, fully traceable seafood, there have been other accomplishments. One of the most important is to widen consumers' tastes so they understand and can enjoy more than just tuna and salmon. Another is so they can see where fish comes from — not just think it is all imported in plastic from foreign countries. There could be similar markets all up and down the coast if they were encouraged and, if needed, supplied with start up capital. This would give support to local fishermen and their communities.

Fishermen are smart and innovative, and they know better than anyone what can be caught from the ocean. And yet the State of California has ham-strung them in their ability to open and develop new fisheries. I am not arguing that science and knowing the resource is not important to maintaining it — but the Commission and the Department do not have the resources to development fisheries management plans for new species in anything like a timely manner. The case of octopus and California King crab come immediately to mind. How many years — ten or more — has octopus been a hot menu item? And yet we import it all even though there are octopus resources right off our own coast and fishermen anxious to catch it.

The State needs to decide to invest in its fisheries to develop them. It is a mandate of the Commission. The State needs to invest in commercial port infrastructure and invest in fixing what it has, that is crumbling, soon to be beyond repair.

Thank you for this opportunity, Peter H. Flournoy

Peter H. Flournoy
International Law Offices of San Diego
740 North Harbor Drive
San Diego, CA 92101
Phone: 619-203-5349
Fax: 619-923-3618

From: Tom peters
Sent: Tuesday, September 25, 2018 1:38 PM
To: FGC
Subject: comment: coastal communities fishing project

I don't know if this is the appropriate forum but I'll give it a shot.

Eureka has extremely poor boat launch facilities.

There is a shallow ramp (county) at Field's Landing. It has a shallow slope which puts one's truck in the water. It is also subject to excessive build-ups of Eel Grass which clog the ramp.

There is a two lane ramp at the city marina, only one of which can be used due to silt buildup. It has very limited parking and backs up traffic on busy days.

There is a ramp underneath the Samoa bridge on the Eureka side. It is often silted but even when it is usable it presents two major problems. The first is that it is in a high vandalism area with a high number of vehicle break-ins.

The second is that it is located so far up the bay that a boat has to travel at "NO WAKE" speed for several miles past the Woodley Island Marina. This adds over 20 minutes to travel time in each direction.

It is possible that a ramp could be developed at the old LP pulp mill site now owned by the Harbor Commission. Other sites could be researched if there was interest and money.

The other facility that is sorely lacking is a fish cleaning station. Many harbors have nice ones (see Brookings, OR). These limit dumping of fish waste while enhancing the sports fishing experience.

All of these suggestions are with the purpose of improving and enhancing the sports fishing experience. Many people travel here to fish for salmon, halibut, and rockfish. It is a significant part of our local economy.

Improvements to the infrastructure can only bolster this segment.

Thanks for adding in my comments.

Tom Peters



October 31, 2018

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

Re: Marine Resources Committee November 14, 2018 Meeting Agenda Item 4 - California coastal fishing communities project

Dear President Sklar,

We are fishery representatives and associations who participated in the numerous Fish and Game Commission-held coastal fishing community meetings. We also submitted detailed comments on the draft staff report before you today, and we've had numerous conversations with Commission staff regarding the draft report. The plight and resiliency of the State's coastal fishing communities is of paramount importance to us, and we are excited the Commission is considering ways it can help bolster and revitalize them. We write today to ask the Marine Resources Committee to hold off discussing "next steps and possible recommendations" until the March 2019 meeting to ensure that the extensive public comment and our ongoing discussions with your staff can progress and be further integrated into the formulation of next steps and possible recommendations.

We're encouraged by the progress we've made so far and hope that it continues. It is our collective opinion that the draft staff report would benefit from additional time to address some of the concerns raised by us and others. We remain committed to working with Commission staff to assist their delivery of a comprehensive report that addresses these concerns.

Sincerely,

Noah Oppenheim, PCFFA

Kim Selkoe, CFSB

Diane Pleschner-Steele, CWPA

Kathy Fosmark, ACSF

Mike Conroy, WCFC

STAFF SUMMARY FOR OCTOBER 17, 2018**11. RED ABALONE FISHERY MANAGEMENT PLAN****Today's Item****Information** **Action**

Receive peer review results for draft red abalone fishery management plan (FMP), discuss peer review results, and discuss next steps.

Summary of Previous/Future Actions

- | | |
|---|-----------------------------|
| • FGC supports red abalone FMP development per MRC recommendation | Oct 8, 2014; Mt. Shasta |
| • DFW updates to MRC on FMP process and timeline | 2015-2017; MRC meetings |
| • Received update on FMP process | Dec 6-7, 2017; San Diego |
| • Discussed FMP scope and content | Apr 18-19, 2018; Ventura |
| • Last update on FMP schedule | Aug 22-23, 2018; Fortuna |
| • Today receive peer review results for draft FMP | Oct 17, 2018; Fresno |

Background

DFW is developing a red abalone FMP for adoption by FGC. Beginning in 2014, DFW provided updates at MRC meetings on the FMP process, progress, and stakeholder input. DFW abalone project staff have also kept FGC and MRC updated on the unprecedented environmental conditions on the north coast and subsequent biological impacts to abalone, and how those are affecting the FMP process and possible provisions.

At FGC's Dec 2017 meeting, DFW provided an overview of its proposed harvest control rule (HCR) for the FMP. In addition, an alternate HCR option was proposed by The Nature Conservancy using survey methods derived from engaging abalone fishermen in citizen science. FGC supported advancing the stakeholder-proposed HCR through a peer review process alongside the DFW-proposed HCR. In addition, FGC directed staff to schedule future FMP updates at FGC meetings rather than MRC meetings due to broad interest in the topic.

In Apr 2018, DFW provided a more detailed overview of the red abalone FMP components, including the management framework, new environmental and abalone condition factors, management responses, a reopening approach, and the DFW HCR-based management strategy. In Jun 2018, the California Ocean Science Trust (OST), with support from the California Ocean Protection Council, began coordinating an external, independent scientific peer review of the draft FMP and both the DFW-developed and The Nature Conservancy's stakeholder-developed HCR-based management strategies. At the Jun 2018 FGC meeting, DFW notified FGC that an extended timeline was necessary to provide time for adequate peer review of both strategies.

On Aug 20, 2018, OST hosted an initial public webinar with the peer review panel, DFW, and The Nature Conservancy. A second public webinar is scheduled to be held on Oct 12, 2018 following release of the peer review report (Exhibit 1).

Today, OST will present the peer review results on the draft red abalone FMP.

STAFF SUMMARY FOR OCTOBER 17, 2018

Significant Public Comments (N/A)

Recommendation

FGC staff: Request that DFW analyze the peer review results, consider possible pathways and timeline for completing the FMP, and schedule follow-up discussion for the Dec 12-13, 2018 FGC meeting.

Exhibits

1. OST red abalone FMP peer review report, dated Oct 2018

Motion/Direction (N/A)

Final Report of the Scientific and Technical Review Panel

Scientific Peer Review of Proposed Recreational Red Abalone Management Strategies



Convened by the California Ocean Science Trust

Supported by the California Ocean Protection Council

October 2018



CALIFORNIA
**OCEAN
SCIENCE
TRUST**

Review Participants

CALIFORNIA OCEAN SCIENCE TRUST

California Ocean Science Trust is a boundary organization. We work across traditional boundaries, bringing together governments, scientists, and citizens to build trust and understanding in ocean and coastal science. We are an independent non-profit organization established by the California Ocean Resources Stewardship Act (CORSA) of 2000 to support managers and policymakers on the U.S. West Coast with sound science, and empower participation in the decisions that are shaping the future of our oceans. For more information, visit our website at www.oceansciencetrust.org.

Errin Ramanujam, Program Director

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SCIENTIFIC REVIEW COMMITTEE

Dr. Jason Cope (co-chair)

Research Fish Biologist, Northwest Fisheries Science Center, NOAA Fisheries

Dr. Peter Raimondi (co-chair)

Professor, Department of Ecology and Evolutionary Biology, University of California, Santa Cruz

Dr. Gavin Fay

Assistant Professor, School for Marine Science and Technology, University of Massachusetts, Dartmouth

Dr. Yan Jiao

Professor, Department of Fish and Wildlife Conservation, Virginia Polytechnic Institute and State University

Dr. Karina Nielsen

Professor, Director of the Estuary and Ocean Science Center, San Francisco State University; Ocean Protection Council Science Advisory Team

Dr. Brian Tissot

Professor, Director of Humboldt Marine and Coastal Science Institute, Humboldt State University

Dr. Will White

Assistant Professor, Department of Fisheries and Wildlife, Oregon State University

Review Participants continued

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The mission of the California Department of Fish and Wildlife is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public.

California Department of Fish and Wildlife (CDFW) staff developed a draft FMP including a proposed management strategy that was included within this peer review scope. CDFW staff were engaged throughout the review process. They delivered presentations to the review panel and supplied additional data, information, and feedback to Ocean Science Trust as necessary throughout the review process.

Sonke Mastrup, Program Manager, California Department of Fish and Wildlife, was the primary management contact for this review.

THE NATURE CONSERVANCY- LED STAKEHOLDER TEAM

The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. Its vision is a world where the diversity of life thrives, and people act to conserve nature for its own sake and its ability to fulfill our needs and enrich our lives.

The Nature Conservancy (TNC) led a collaborative stakeholder team comprised of TNC staff, academic researchers, and recreational divers that developed an alternative management strategy that was included within the review scope. This team was engaged throughout the review process. The team delivered presentations to the review panel and supplied additional data, information, and feedback to Ocean Science Trust as necessary throughout the review process.

Dr. Alexis Jackson, Fisheries Project Director, The Nature Conservancy, was the primary contact for this review.



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Appendix A: Community Engagement Webinar Summary Report

Appendix B: Terms of Reference

Recommended citation Cope, J., Raimondi, P., Fay, G., Jiao, Y., Nielsen, K., Tissot, B., and White, W. Final report of the scientific and technical review panel: Scientific peer review of proposed recreational red abalone management strategies. California Ocean Science Trust, Oakland, CA. October, 2018.

Image credits: Scott Lewis (cover); Chris Teague (p. 3); Jessica Williams (back cover)

Background

In 2005, the Fish and Game Commission (FGC) adopted the Abalone Recovery and Management Plan (ARMP), which governs the management of the recreational red abalone fishery and recovery of southern abalone stocks. The ARMP has two phases of adaptive management: the interim management plan which the fishery is currently managed under, and the long-term management plan. Management changes to the fishery in 2014 marked the beginning of this move to long term management by setting regulations separately for the southern and northern areas of the fishery. The transition to ARMP long-term management provides an opportunity for the California Department of Fish and Wildlife (CDFW) to move management of the recreational red abalone fishery to a fishery management plan (FMP) under the Marine Life Management Act (MLMA).

Thus, it is important for the scientific underpinnings of the draft FMP to undergo external, independent peer review prior to submission to the FGC. This process is one way to provide FGC and stakeholders assurances that FMPs are based upon the best readily available scientific information, as set forth under the MLMA. CDFW drafted an FMP and a proposed management strategy as a part of that plan. The Nature Conservancy (TNC) led a stakeholder proposed management strategy as well. The FGC and CDFW have asked for both the management strategy proposed by CDFW and the stakeholder submitted management strategy, led by TNC, to be included in the peer review. Each of the groups have provided an independently developed management strategy for consideration.

Review Scope

CDFW and FGC's purpose in asking Ocean Science Trust (OST) to conduct a review of the scientific and technical components of both the CDFW and the TNC management strategies to ensure the scientific and technical elements provide a rigorous underpinning for management decisions and regulatory action should they be implemented. Given the unusual circumstance of two proposed management strategies, CDFW sought review input that could illuminate the strengths and weaknesses of each approach to guide next steps. OST is serving as the review coordinating body, and worked with CDFW and TNC to develop a scope of review that focuses on key scientific and technical components of the management strategies where independent scientific assessment would add value.

The central question of this review is:

Are the underlying data and analysis, and application of those in each of the proposed management strategies scientifically sound, reasonable, and appropriate, while also meeting the management goals for the recreational red abalone fishery in northern California as defined by MLMA?

The review will focus on evaluation of the following components of both management strategies:

- Evaluation of the data collection methods that inform management indicators, triggers, and decisions including informing responses to changes in the environment, fishing, or other stressors.
- The scientific rationale for the indicators used and their link to anticipated responses in the abalone population and management decisions.
- The scientific rigor of the proposed quantitative analysis and application of the data and the robustness of the scientific rationale for the proposed management actions it triggers.
- Evaluation of modelling approaches used including model assumptions, analyses, interpretation, and application of the model results to evaluate performance of the harvest control rules against management objectives.
- A general scientific assessment of the proposed methods including application, assumptions, and management implications of uncertainties in the stock status, data streams, and analytical methods within the confines of CDFW capacity and regulatory authority.

For clarity we note that this is not a comprehensive review of the entire FMP. Rather, we are reviewing only the management strategies submitted by TNC and by CDFW. The more detailed reviewer instructions are available online [here](#).

Summary of the Review Process

This review took place from May 2018 - October 2018. Ocean Science Trust implemented a scientific review process that sought to promote objectivity, transparency, candor, efficiency, and scientific rigor. Following a broad solicitation of potential reviewers (coordinated via the Ocean Protection Council Science Advisory Team), a multidisciplinary, seven-member review panel was assembled, representing expertise in fisheries science and management, abalone ecology, and modeling, among other subjects. OST facilitated constructive interactions between reviewers and both author teams through a series of remote meetings, where CDFW and the TNC-led stakeholder teams presented an overview of the science and technical elements under review, and were available to answer reviewers' questions. In addition, OST convened reviewers independently to allow the review panel to candidly discuss the review materials and conduct their assessment. Ocean Science Trust worked with the review panel to assemble and synthesize their written and verbal responses to guiding questions, as well as discussion from remote meetings into this final report. This report is publicly available on the Ocean Science Trust [website](#).

Additionally, OST led a community engagement webinar to answer questions about the peer review process and scope of the peer review. A summary of that meeting and all questions submitted are included in Appendix A.

Project Materials Under Review (both available on the Ocean Science Trust [website](#))

1. CDFW submitted management strategy
2. TNC-led stakeholder submitted management strategy

Review Recommendations

Summary of Main Findings

Both teams submitted very different strategies that represent a tremendous amount of work to find management solutions for a very complicated recreational red abalone fishery where life history traits and uncertain environmental conditions play an active role. Given this, California Department of Fish and Wildlife (CDFW) and the Fish and Game Commission (FGC) have requested, and we recommend, a fisheries management plan (FMP) that can manage under any future environmental scenario and respond to changes in the red abalone population using the best available science. What we discovered during the course of this review was an opportunity to look at the data and strategies holistically to:

1. make recommendations to bolster the scientific rigor of each strategy, and
2. find areas where synergies between the two plans can come together and increase the chances of successfully tracking changes in this population in support of scientifically sound management decisions.

This review cannot provide advice on setting or deciding upon risk thresholds, management measures to accommodate different levels of catch, or determine appropriateness of opening a fishery with low levels of catch. While elements of these types of decisions could be supported by existing or new scientific analyses, they were outside the scope and time frame of this particular review. We have reviewed the scientific elements of all materials under review and made recommendations where further work is needed. Ultimately, we wanted to know under what circumstances a particular indicator or suite of indicators might capture or miss a rapid or slow change in the red abalone population. This is the lens through which we evaluated the materials under review. To put the rest of our review in context, we have summarized our findings about each strategy under review here. We address them simultaneously throughout the rest of the report.

Summary of Findings of Each Management Strategy

CDFW submitted management strategy

This management strategy emphasized the direct measure of biological and ecological conditions of red abalone for both setting catch in an open fishery as well as decisions about when to close and re-open the fishery. It has taken the traditional density approach and combined it with new indicators that are on the forefront of monitoring and predicting changes in the red abalone population (body condition, gonad health, kelp cover, sea surface temperature, etc.; Table 1). These measures make intuitive sense, but can be costly and logistically difficult to obtain. We believe that some subset of these indicators can likely provide the biological component needed to manage this fishery. However, without simulation testing (e.g., in these cases, computer-simulated population dynamics used to test a variety of questions regarding measuring and managing populations) of these indicators and better defined reference points, we cannot recommend which combination of indicators and reference points are most robust to uncertainty in red abalone status. Additionally, we know abalone density to be a preferable way to measure the population status. We also know it to be very labor intensive to collect enough data to make the metric informative at the scale at which it needs to be for making site or county level decisions.

Simulation testing could better establish how current or proposed density monitoring can be used as an informative metric for management decisions, as well as give insight into better ways to formalize the use of metric uncertainty (i.e. high variance) into decision making. Additionally, the density metric currently requires three years to get a complete set of data for all sites, thus increasing the chance that density could change in unsampled years/sites, limiting management responsiveness. We also believe that through simulation testing, CDFW can better understand how to use the new environmental and productivity indicators and find ways for them to better support more robust decision making. We also note that the type of evaluation done in the current strategy is insufficient for performance testing of indicators. Lastly, we want to highlight that we consider the biology of this species to be highly important to understanding the population of red abalone. We believe the other environmental and productivity indicators (especially kelp cover, gonad health, and body condition) need to be further explored, tested and refined. We think that this testing and refinement will lead to more meaningful indicators, that can be collected more quickly, and inform management decisions on a more timely basis, increasing scientific robustness.

TNC-led stakeholder submitted strategy

This management strategy is a more traditional fisheries management approach for managing the fishery when it is open. It applies two relatively data-limited approaches,--length based spawning potential ratio (LB-SPR) and catch-MSY-- as indicators used to adjust catch. The approach was tested using simulation testing with an operating model approximating red abalone biology and population dynamics. This management strategy has the benefit of relying on tested and refined indicators used in other fisheries that have benefited from simulation testing. It also has the ability to track the general population dynamics with relatively little data, but with one major caveat: neither indicators, nor the operating model, incorporate the needed specificity in low density dynamics of red abalone. Our review found that the model does not explicitly incorporate certain low (e.g. Allee effect) or variable (e.g. body condition) population situations, making it difficult to determine how well this multi-indicator approach will perform at low densities, when disease alters population conditions, or if mortality events impact all lengths equally. There are currently no biological modifications in the interpretation of lengths to detect poor conditioned individuals.

Pairing this multi-indicator approach with other biological indicators that detect metrics such as low density dynamics and/or body condition issues could significantly improve performance. This will likely lead to different additional catch-setting situations to be tested, as well as modifications to the operating model to incorporate more specific low population dynamics conditions so as to be a better measure option for performance. There is also the need to consider what methods and reference points would be used to reopen an already closed fishery.

Summary of Peer Review Recommendation

As written, all strategies contain a high level of uncertainty. All individual indicators and the ways in which they operate under each management strategy need revision in order to reduce uncertainty. Given unpredictable data streams, changing ocean conditions, and unpredictable changes in the ecosystem where red abalone have traditionally thrived, it is advantageous that any plan leverages a suite of available indicators to present the clearest picture of the population status.

We want to emphasize that even though there were two approaches applied, they both come to the same conclusion with respect to the current status of the population. These common findings are ultimately how and why we think they can be integrated in support of better scientific grounding for management of this fishery. We found that both proposals could be strengthened by each other to ensure accurate and timely tracking of the red abalone population, subject to cost constraints. We have reviewed each indicator in and of itself and then made recommendations about how they could combine with other indicators to maximize synergy in this data-limited system.

Recommendation 1: These two management strategies should be integrated to reduce uncertainty and take advantage of the best available science.

We find that while each plan could potentially be altered to operate independently of the other, high levels of uncertainty would remain regarding specific thresholds or triggers for opening or closing the fishery. This level of uncertainty means it is possible the models could result in decisions to fish the population when it should be closed or keeping the fishery closed when it could be open. Luckily, we found that elements of each plan, data streams provided, and thinking from both teams could be combined to form a potentially more cohesive plan and potentially greatly reduce the risk of overfishing and increase management performance. Throughout this report we have made several recommendations to make individual indicators more robust as well as highlight potential areas for integration. While no one can predict the future and there is no risk-free plan, careful consideration and integration of these plans, as well as specifying risk tolerance, can create a scientifically robust plan on which to make sound management decisions.

Recommendation 2: The way to integrate indicators, data streams, and analysis should be tested and analyzed using simulation testing from a normal operating model specified to capture low-density population dynamics specific to red abalone.

For this report we present examples of how to address these needed changes. We did not make specific recommendations about which suite of indicators would be appropriate and their respective reference points. This recommendation will require simulation testing on all indicators which was outside the scope and timeline for this review (see Table 1 for a full set of indicators under review). Simulation testing can help to illuminate the right combination of indicators that may reduce uncertainty below acceptable thresholds by balancing a combination of different data collection methods with various associated cost, risk, and statistical power (see Figure 1). This simulation testing, or modeling analysis, should be stress tested and analysed using computer simulations that are specified to capture low-density population dynamics specific to red abalone.

For this report we have summarized our review into two sections: 1) management strategies for re-opening, and 2) managing under an open fishery. However, these topics are highly interrelated and many recommendations from both sections apply to the other. For example, we talk about using environmental indicators, density, and LB-SPR in the re-opening section. However, we would not recommend applying any of these indicators or plans without implementing the two recommendations above.

WHAT IS NEEDED AND CAN BE AFFORDED?

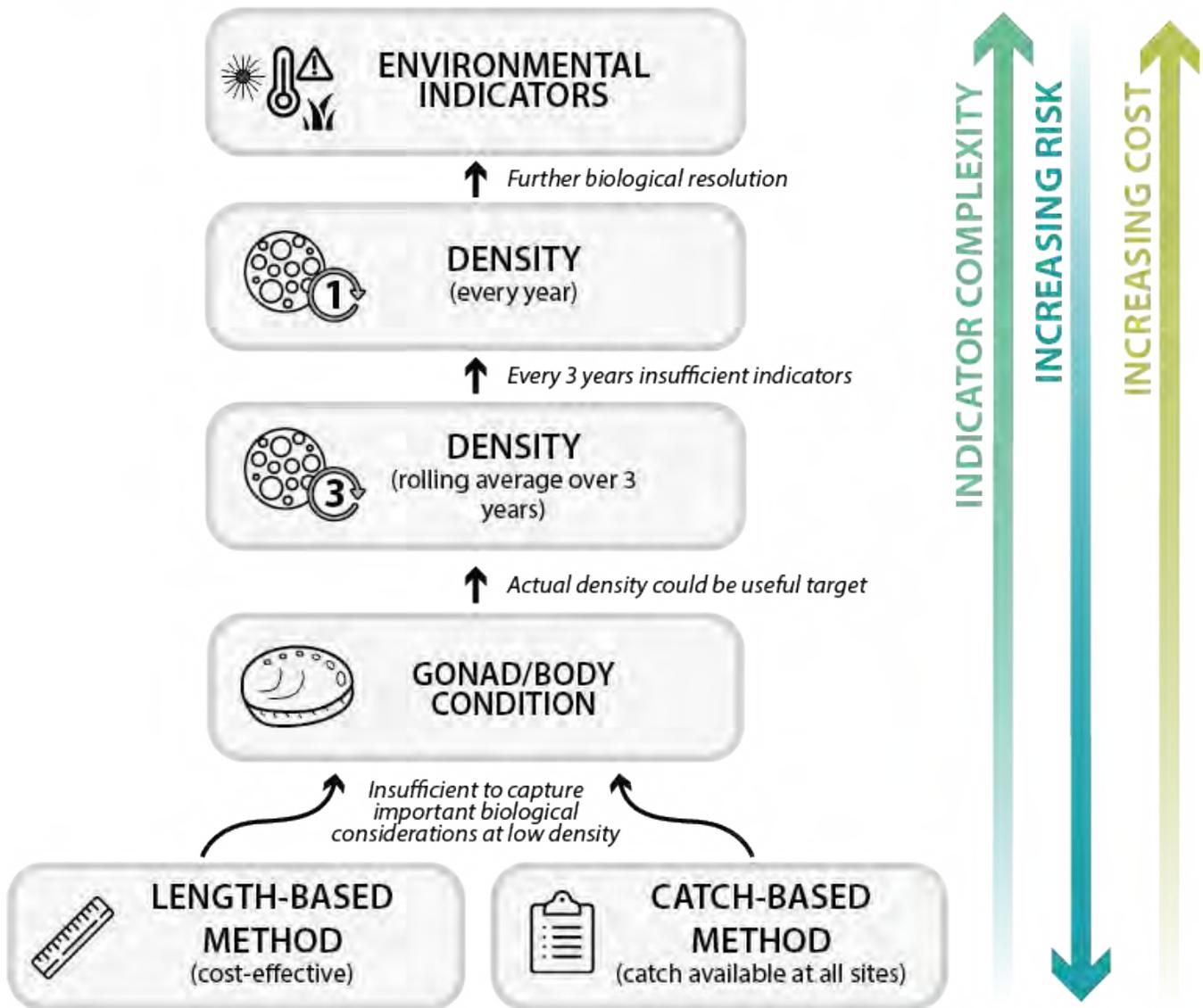


Figure 1. Theoretical flow chart indicating some of the ways in which different indicators can be visualized along the differing scales of complexity, risk, and cost. We selected several of the provided indicators to show the ways in which they compare on these scales, but did not include all provided indicators (see Table 1). Complexity refers to increasing the number of indicators that need to be monitored and reconciled with each other.

Table 1. List of the indicators, associated reference points, rationale or reference point chosen for each management plan. In some cases we indicate that there was no basis provided for the reference point. This simply means a written explanation was not provided in the written report. It does not mean that there is none, or that the indicator is not relevant to the fishery.

Plan Source	Management Phase	Indicator	Reference Point	Basis
CDFW	Catch-setti	Target catch	+/- 25% (no change to catch if within this range)	Wide enough to be insensitive to minor fluctuations (p. 5-12)
		Baseline catch	Catch average from 2002-2006	No large scale impacts to survival and fishery was stable
		Baseline density	0.63/m ²	Average value during baseline years
		Density target	0.5/m ²	Shift in fishery catch dynamics happens below this value (p 5-15)
		Average density limit	0.3/m ²	Above 0.2/m ² (the minimum viable population density set p. 5-16), limit based on site density to catch (App. B, Fig. 1)
		Site density limit	0.25/m ²	Above 0.2/m ² (the minimum viable population density set p. 5-16), limit based on site density to catch (App. B, Fig. 1)
		Regional density of deep water abalone	low: 0.2/m ² ; high: 0.4/m ²	Not specified in chapter 5
		Gonad index	<100 for ≥60 abalone that are ≥7"	Not specified in chapter 5
		Body condition	≥15% with shrinkage score >0 (sample size of ≥500 abalone)	Not specified in chapter 5
		Ocean temperature	>15°C at 30 ft. in Mendocino county on any day in the previous calendar year	Not specified in chapter 5
		Kelp abundance	≤30% historic max coverage in either Mendocino or Sonoma county	Not specified in chapter 5
		Sea urchin density	Combined density of red and purple are ≥5 urchins/m ² at any of the index sites	Not specified in chapter 5
	Re-opening	Site density reopening threshold	>0.4/m ²	Set to be 60% above the site closure trigger to buffer against re-closure
		Size frequency	≥40% legal-sized; ≥30% sublegal (with a sample size of ≥500 abalone)	Similar to baseline (2003-2007) condition
		Regional density of deep water abalone	>0.2/m ²	Not specified in chapter 5
		Regional density reopening threshold	>0.45/m ²	Not specified in chapter 5
		Ocean temperature	≥15°C at 30 ft. in Mendocino county on any day in the previous calendar year	Not specified in chapter 5
		Kelp abundance	≤30% historic max coverage in either Mendocino or Sonoma county	Not specified in chapter 5
		Sea urchin density	Combined density of red and purple are ≥5 urchins/m ² at any of the index sites	Not specified in chapter 5
	TNC-led	Catch-setti	LB-SPR	SPR/SPR _{MSY} ; high (>1.1); stable (>0.9 & <1.1); low (>0.5 & <0.9); extremely low (<0.5)
Catch-MSY			U/U _{MSY} ; U/U _{MSY} levels: high (>1); low (<0.75), stable (>0.75 & <1)	U _{MSY} = r/2 and U is catch in final year/B ₀ ; Levels not specified

I. Managing Under a Closed Fishery

In general, we found that the field sampling may provide some information on stock status, but does not alone give the robust tools needed to make management decisions about re-opening. At the beginning of this review, we received information from both teams with a variety of data streams and indicators which we think will be useful to making a robust plan for consideration of re-opening the red abalone fishery.

Because of the red abalone population decline and the current fishery closure, we believe it is important to first address the current situation of the fishery. The FGC closed the fishery due to evidence of a substantial decline in the population on December 7, 2017. Due to this shift in the population we initially focused on reviewing the data and the plan for re-opening a closed fishery, where provided, as well as all other data and indicators that could be used to inform managing under this closed fishery scenario. CDFW included a re-opening section in their plan providing a basis to make preliminary recommendations. We understand that this change in the abalone population is new and commend both teams for adapting their thinking and plans, where they were able, with available time and resources, to include this new information. Given the current status of the population, we think ensuring the scientific underpinnings of how to reopen the fishery is critical and timely.

1.1 Key recommendation

Recommendation 3: All indicators chosen must be clearly defined, and ideally, all candidate reference points for any indicator should be tested using simulation testing in a closed loop analysis.

Indicators from both plans, regardless of whether they appear in a re-opening context, should be evaluated for their usefulness in making management decisions related to re-opening. We recommend that any threshold or indicator chosen as part of the re-opening plan needs to be fully defined. This includes

- clearly stating the values for, and rationales for, indicator thresholds (which have been set and tested through formal simulation operating models)
- indicating the baseline or comparison of indicator status, whether it be a reference year(s), statistical summary, or data where applicable
- describing and demonstrating threshold detection analysis, including variance, power, etc.
- plans for how and when the data will be collected in support of measuring these thresholds and, where appropriate, back-up plans for when data sets are not available

Selecting reference points based on expert opinion or judgement may also be a viable route when other sources of evidence for setting reference points are not readily available. However, the scientific rationale for the specific reference points chosen needs to be well articulated and supported by multiple experts. Expert judgement may result in greater uncertainty regarding specific reference points. In some cases, setting an arbitrary number may be worse than not including the indicator at all or using a different framework for decision making. In this case, our understanding is that all of the indicators presented are sufficiently well-developed to have the information needed for at least basic testing using a formal operating model of the system, which can include evaluation of implications of data availability. These simulation models can help test and refine the relationship between these indicators and the red abalone population. Thus there should be no need to include indicators that rely on expert judgement alone.

We explore two indicators to demonstrate how to implement the above and the types of questions that should be asked.

- *Example 1- Kelp Cover:* The reference point for kelp cover under re-opening is 30% cover.
 - o How was this reference point chosen? Was it tested using simulation in a formal operating model?
Answering these questions will aid in a more clear selection of
 - What the current kelp cover is being compared to (e.g. an average of all past years? The previous year? The whole area covering the fishery? Areas inside and outside of MPAs? Area by county? By site?)?
 - What types of data are acceptable for assessing this metric once established (e.g. kelp bed floors, dive surveys, visual assessments from land)?
 - What should be done when these data are unavailable?
- *Example 2- LB-SPR:* This indicator was not discussed as part of the re-opening management strategy, however it could be included by setting a threshold level that the indicator would need to achieve (presumably from fishery independent sampling) for setting catch under re-opening. If LB-SPR is evaluated in a formal simulation model, and if selected, managers should assess and clearly address:
 - o How was this reference point chosen? Was it tested using simulation in a formal operating model
 - o How does the threshold value interact with the precision of reference point estimation in terms of assessing risk of re-opening, to both the stock and yield from the fishery?
 - o What does the status of additional (combination of) indicators need to be for LB-SPR to be used as a re-opening indicator?
 - o What should be done when length data are unavailable?

Recommendation 4: A multi-indicator approach, with little or no tiering, where not all indicators need to be met (i.e. not adopting a “one out, all out” approach), may be more flexible and informative given the uncertainty of changing ocean conditions and the response of red abalone to these changes. The structure of this approach and choice about whether to make it sequential (single indicators triggering another single indicator and so on), tiered (groups of indicators that trigger next tiered group of indicators and so on), or simultaneous (all indicators assessed simultaneously) can and should be tested using a formal operating model, thus building in a structure that is not subjective.

Given the uncertainty of data streams, changing ocean conditions, and the way different species and ecosystem features may interact with red abalone populations now and into the future, we recommend a re-opening plan that allows for flexibility and the possibility that red abalone may adapt to some of the “negative” indicators in the future. For example, if moving inshore becomes a way for abalone to find enough food, but kelp cover remains low, would this alone be a reason to keep the fishery closed if all other indicators are positive? Thinking through these types of emergent patterns along with their consequences is essential. We recommend using scenarios such as this to make decisions about how many of the indicators need to be met in order to move to the next tier of data collection or to open the fishery (e.g., the traffic light approach; Caddy 2002). A decision tree framework like the one already proposed could be adapted and a useful way of outlining this process.

Testing these decision points in simulation testing in a formal operating model is one way to provide rationale for these choices. Feasible structures for the sequence or tier structure can be assessed through participatory processes with experts, so as to ensure that the number of simulated possibilities tested is kept to a manageable number. It is impossible to anticipate the full range of possible future scenarios, but simulation testing offers a path to identify strategies that are unlikely to work, and ones that may be robust. Coupled with a detailed rationale for decision points associated with adaptive measures, this ensures a transparent way of continuing engagement. An adaptive FMP would allow for ongoing scientific engagement into the future as new, unanticipated scenarios come into play.

2. Evaluation of Management Strategies for Open Fisheries

As mentioned, GC requested from CDFW an FMP that can manage under any future scenario. Once a fishery has been deemed ready for re-opening, there is a need to have a plan with a strong scientific backing to ensure management decisions can respond quickly to changes in the population, especially given changing ocean conditions and the uncertainty created by them. Ideally, as recommended above, the plans for re-opening and managing after re-opening should mirror each other. This will streamline data collection, analysis, and management decisions.

This review was scoped to look at the scientific underpinnings of the elements provided in the management strategies and other materials provided (all materials available on the Ocean Science Trust [website](#)). While our review can illuminate the risk this may pose in terms of outcomes under different scenarios it cannot and it would not be appropriate for us to make decisions about the appropriate level of risk managers and fishing community members are willing to assume under any given management strategy. We attempted to provide insight about the inherent risk of missing a population change under each management strategy and make recommendations to improve performance should managers determine that the associated risk needs to be reduced. However, it was outside the scope of this review to determine management options or setting risk choosing management measures to accommodate different levels of catch, or to determine the appropriateness of opening a fishery with low or high levels of catch. Should this be of interest in the future, science can help managers and community members understand the risk associated with each of these and potential outcomes for the red abalone population, but it cannot make these value based judgements.

We assessed each indicator individually and holistically to determine how they might perform under different scenarios. Ultimately, we wanted to know under what circumstances a particular indicator or suite of indicators might miss a rapid or slow change in the red abalone population. This is the lens through which we evaluated the materials under review. We have evaluated the scientific elements of both and, when able, provided recommendations for strengthening the different components and the overall management strategies of both. It should be noted that it is outside the scope of this review to provide the best way to fix any weaknesses we may have identified.

We have concerns that even after incorporating the recommendations we provided, these plans individually could still lead to fishing on a population that is not sustainable or result in keeping the fishery closed long after populations are able to sustain some fishing. Changing ocean conditions, changing dynamics of how red abalone interact with their environment, specifics of data collection and analysis, as well as the inherent attributes of these indicators, are among the factors that limit predictability in management outcomes here, and are not unique to this fishery.

Reviewing these two different approaches is actually fortuitous for red abalone management as it allowed us to see the relative strengths and weakness of each approach more clearly. As a result, our review finds and recommends that a more holistic approach be taken for the red abalone FMP. When looking at all components of the management strategies side by side, they provided a much more robust suite of indicators. Not only that, they seem to connect to each other in unforeseen ways, filling gaps and uncertainties in the other and vice versa. It is outside the scope of our review to provide a new integrated plan. However, we recommended that these plans be evaluated to determine the appropriate ways to integrate these indicators to come up with a comprehensive management strategy. By doing this work, and then evaluating it through a formal simulation operating model, the outcome will be a plan that is scientifically robust, uses a multi-indicator approach, and hopefully reduces the risk of overfishing.

Each of these plans represent core components of what should be included in a scientifically robust management strategy for an open fishery. We see opportunity for them to work together holistically. In isolation, both plans under review have uncertainty that needs to be addressed in order to improve the estimates of population status. Integration of these plans, utilizing simulation testing, is recommended.

Any FMP should use a Management Strategy Evaluation as a member of best practices, including stakeholder engagement. The target catch evaluation is useful for understanding past decisions and outcomes of alternative decisions given previous resource state, but is not a replacement for a formal Management Strategy Evaluation or other formal simulation testing. The current Management Strategy Evaluation could benefit from changes to increase its performance for the plan for which it was developed. For example, M used in the simulation system is based on an estimate from Leaf et al. (2007), and seems inconsistent with the one used in LB-SPR. There would likely need to be changes to the model to incorporate the recommendations in this report. For example, multiple indicators are suggested to be incorporated in the simulation model and management plan tested with the Management Strategy Evaluation framework. However, it is still an good basis for testing and refining a y one or a suite of changes made to the management strategies under review for incorporation into the FMP.

In summary:

- Capitalize on the strengths of the strategies already provided by integrating elements of both into a potentially more robust plan.
- In order to combat the possible loss of data streams, a multi-indicator approach that makes allowances for and explicitly states changes that need to be made when data streams become unavailable for any given indicator is preferred.
- The management plan should explore how the multiple indicators will interact. Does every indicator need to meet thresholds? Is a subset of the indicators meeting reference points enough to make management decisions (e.g. what happens when kelp cover and red abalone density are past the positive threshold, but urchin densities remain high)? Simulation testing can be used to test and describe this robustness.
- The management plan should explore the order of operations for any suite of indicators and how they work together.

2.1 Key recommendations

Recommendation 5: Setting reference points for every indicator is critical. (See also recommendation 3)

All reference points need to be more explicitly defined including information on what they are and how reference points were set (Table 1). There needs to be more justification and better articulation on their contribution to the management plan, how and why they were selected, and their role in making specific management decisions, including fine and coarse tuning. Our strong recommendation is to test these indicators (as described in the above recommendations) in a simulation modeling scenario where this uncertainty can be explored and proper thresholds that formalize the way in which you deal with uncertainty can be explored (see also recommendations 8, 9)

We have provided the following examples as guidance for how to implement this recommendation for any indicator chosen to include in the management strategy:

- *Example 1- LB-SPR:* This indicator is used to reflect the exploitation intensity through observed length frequency. However, in cases such as unexpected high mortality across ages and sizes, small sample size, poor gonad or body conditions, and population aggregation etc., this indicator may not be able to detect the correct signal of the population status and exploitation over short time scales, likely greater than one year but less than three-four years. The LB-SPR indicator may make sense at higher population sizes not affected by low-density population dynamics (e.g., Allee effects), but at reduced population sizes, this indicator a) needs to be tested for robustness to these Allee effects and b) would benefit from additional biological indicator(s) that better captures red abalone population dynamics at low population sizes or in instances where lengths are less informative of mature biomass (e.g. poor gonad or body condition).

One solution to test would be extending LB-SPR by using length frequency across multiple years to validate the population results behind the data instead of only using yearly observations separately. LB-SPR may also be used to simulate a “healthy” length frequency target and threshold (e.g., $P(L > L_{sublegal})$) under alternative conditions so that length distribution can be used as one of the indicators in opening or managing the fishery, which is how it is currently being used in the proposed strategy.

- *Example 2- Kelp Cover:* As it stands there is very little certainty about the thresholds that have been set for this indicator as well as the other productivity and environmental indicators or the ways in which they directly correlate to the red abalone population itself (see table 1). In theory, kelp cover should indicate the abundance of a favored food resource for red abalone, presumably the availability of drift kelp. The dominant kelp in northern California is *Nereocystis lutea* (bull kelp), an annual species, that can be a responsive indicator of annual ocean conditions impacting kelp populations (waves, warm waters, nutrients, etc.). However, the relationship between kelp cover of *Nereocystis*, drift kelp abundance, and red abalone condition has not been established (nor has the form of the relationship). Thus the basis for any particular threshold in kelp cover is unclear and has a high degree of uncertainty associated with it, given the available evidence.

As a result, it should not be used directly to trigger management decisions. However, given there is a known trophic link between these two species, and between ocean conditions and kelp cover, it may be beneficial to use a conservative kelp cover threshold to trigger inclusion of other indicators (e.g., gonad condition), as is the case in the CDFW management strategy currently. Indicators such as this should be treated as uncertain and therefore there should be flexibility and adaptive capacity should be built into the system to change these indicators as more information becomes available or to bypass them entirely should the red abalone population show other signs of recovery.

Recommendation 6: All indicators should be evaluated alongside each other in formal simulation modeling to set reference points and to test and determine the appropriate suite of indicators.

Both management strategies presented approaches that need to be bolstered in order to reduce uncertainty. We recommend taking a holistic approach and assessing all indicators alongside each other to find the right subset of indicators to reduce uncertainty using a formal operating model, such as a Management Strategy Evaluation. One management strategy under review relied heavily on density while the other under review relied on LB-SPR and exploitation rate estimates. Other indicators were included (e.g. body condition, gonad health, etc.), but we focus on the two prominent ones.

Below we demonstrate the concerns with the two indicators and then show the ways in which these concerns could be alleviated through integration

Prominent indicators as currently used:

- *Density (10 sites):* Length frequency density data are the gold standard for tracking invertebrate populations. The issue is that these data can be highly variable and very time consuming or costly to gather at the level needed to be scientifically meaningful for fisheries management. For this density indicator, as currently implemented, the length of time required to revisit each site (three years) as well as the low levels in the power analysis at anything other than the whole fishery (which takes three years to complete) makes it inadequate for informing annual management decisions, especially when environmental conditions change rapidly. Additionally, this indicator for red abalone varies substantially among local sites surveyed. Gaps in data between years for different sites confounds estimates of change among years with changes in site representation in the data set. As a result, changes in apparent population status between adjacent years (or lack of change) might be incorrect and cause the fishery to either close or re-open when not warranted.
- *LB-SPR (15 sites):* LB-SPR is a traditional fisheries management tool and uses an assumption that changes in the population are related to mortality events, including fishing. Here in California we know that changes in the population can be due to either catch, environmental conditions, or other unidentified mortality sources

such as poaching. Given the life history traits of red abalone, it will not be sensitive enough to recognize changes in the population under changing ocean conditions, when body conditions change and especially when population size is low, and low-density population dynamics prevail. Under plausible scenarios, this indicator could take several years to indicate a change in the population. Pairing this indicator with catch-MSY alone is not sufficient to make up for this potential to allow higher levels of fishing on a population that is in decline. We also have several concerns that the Management Strategy Evaluation that evaluated LB-SPR and catch-MSY did not show any sensitivity to changes in harvest or other events that mimic those such as harmful algal blooms, disease, starvation, etc. We suspect that this is due to the lack of biological indicators and speaks to the need for an analysis of whether or not the LB-SPR metric is able to detect changes in the population at very low densities.

Investigating the right suite of indicators for an integrated management strategy

This should be done through a series of evaluations using a formal operating model such as a Management Strategy Evaluation on all indicators provided in both strategies. While it is outside the scope of this review to find or select all options, here are several for consideration and testing. This should be done for all indicators in Table 1 to determine the right suite of indicators needed to meet management goals:

- We know that density and LB-SPR can be correlated with each other. One concern under LB-SPR is that when density declines to low levels, that LB-SPR is masking Allee effects. It could also be masking other indices of populations such as body condition, etc that may or may not be linked to density. Density can be used to set a LB-SPR threshold above which we know there is very little chance of Allee effects or other low density effects that are undesirable. Therefore, LB-SPR threshold could be set high enough where we have strong scientific confidence that it is well above the level of density where it stops being able to track changes in the population.
- LB-SPR may also be masking population changes (such as the current one) where the population is in decline. There are two separate issues: 1) a discrete mortality event that affects all size classes would not cause an immediate change in LB-SPR, but would show up in density estimates; 2) an overall increase in mortality due to poor conditions will change LB-SPR (even if it is affecting all size classes equally) but the change may be slow enough to have a lag in detection.
- Density estimates have other deficiencies (see above). Density needs to be paired with indicators that can be collected on an annual basis and with greater statistical power. By pairing biological indicators such as density with body condition and/or gonad size, along with LB-SPR the ability to track changes in the population and detect them earlier is increased. Simulation modeling can and should test how and if these two indicators, LB-SPR and density, track alongside each other. It also relieves the need for density information to be collected at every site on a yearly basis in order to be meaningful (note: we did not test that sampling all 10 sites on a yearly basis would allow for the power needed to make management decisions on a yearly basis at any scale finer than fishery-wide).
- All of these changes should be tested in formal closed loop simulation testing that can help set the specific triggers related to density, LB-SPR, body condition, etc.

Recommendation 7: All indicators need to transparently indicate, and then formalize the way in which they deal with uncertainty.

Each of the indicators (Table 1) presented in both of these management strategies are not measured without error. However, the levels of uncertainty vary across these indicators. This uncertainty needs to be more transparently described in how it is calculated and formally treated in the management procedures. This formalized treatment currently seems to ignore all uncertainty by using a measure of central tendency, avoiding the risk associated with uncertain values. Whether directly measured (e.g., abundance) or estimated (e.g., LB-SPR), each indicator should not assume the median value is the best choice for management use. Any indicator with high amounts of uncertainty that uses the median could wrongfully declare a fishery open or closed, or increase or reduce catches when the opposite should have been done.

Uncertainty can be dealt with in many ways. One common approach is to define a quantile that is below the median value (i.e., 0.5; Ralston et al. 2009). This approach could be considered for any of the indicators in Table 1, and the exact value should be tested for robustness in a simulation testing framework. Other scientific methods for dealing with uncertainty were outlined in the red abalone density estimate peer review (SAC 2014). However it is done, all indicators should have some consideration on how uncertainty is treated and the proposed treatment performance tested under different scenarios.

Recommendation 8: The science underlying setting catch levels needs to be re-evaluated and re-configured

Recommendation 8.1 Consider changing the order of operations or indicators when setting catch.

We recommend that both management strategies, as well as any integrated options, reconsider the order in which indicators are used and the ways in which they connect. Typically, indicators with robust reference points are used to set catch limits. This is important because they are clearly defined and uncertainty has been quantified. Additionally, perceptions of resource status and confidence in advice you comes can sometimes be biased by the order in which operations are done with respect to expected baseline or reference values. Although several orderings of operations may lead to the same outcome in terms of advice, some may be more preferred by relevant stakeholders. Several examples of this include:

- Reversing the order in CDFW approach. Usually catch is set by first using indicators that have robust biological reference points that adjust catch. However, the CDFW approach starts with catch and then uses different indicators to adjust it. This is problematic because the indicators of current status are not the ones being used to determine exploitation levels.
- LB-SPR can provide a relative measure of stock status (e.g., transient LB-SPR). Relative stock status is an input into the catch-MSY method. It is suggested that the estimate of LB-SPR be considered as a prior for the stock status input of the catch-MSY method so as to make the catch estimation more consistent with the length information on stock status. This would avoid having to define decision rules for either LB-SPR or exploitation status, and would directly use the catch-MSY estimates of catch to set the sustainable catch limits. Some thought on the appropriate measure of uncertainty (likely underestimated by LB-SPR) for the prior would still be needed, and could be explored through sensitivity analyses in LB-SPR.
- By implementing recommendations 1 and 3 (above), alongside a formal Management Strategy Evaluation (recommendation number 11 below) on all indicators and their reference points, there can be a more scientifically robust way for determining which indicators work best together and which ones are redundant for providing catch advice.

Recommendation 8.2 The mechanisms for setting catch need to be re-evaluated and perhaps merged.

Both plans presented different mechanisms for setting catch. And again we find that neither is complete in and of itself. Using a baseline catch, as used by CDFW to set current day catch where conditions and population levels are completely different, is likely not going to be useful going into the future. The population may be continuously over or under fished given the adjusted percentage of changes in catch, especially when the uncertainty of the indicators are of high levels. The baseline catch approach is also difficult to use when a population is largely depleted, or when a population is recovering. Under the TNC-led management strategy, catch is set using a combination of LB-SPR and catch-MSY ratcheting down over time. This is problematic because of both the potential delays in tracking declines in the populations and the lack of having clearly demonstrating that this ratcheting down of the catch will not result in fishing on an overfished or decimated population (i.e. it needs to be better demonstrate why there is not a need for a threshold or reference point at which the fishery closes). One option for integration might be that by jointly using density as a reference point together with LB-SPR, to assess stock status, and using catch-MSY for setting catch.

Recommendation 9: Align the re-opening plan to match how the fishery is managed under other management scenarios to streamline data collection, analysis, and the decisions that follow.

This last recommendation should be addressed as time and resources allow. Streamlining the re-opening and the management after re-opening can often be simpler, more transparent, cost effective, and in alignment with fisheries management best practices

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Public Webinar to Discuss the Red Abalone Community's Science-based and Peer Review Process Related Questions

Summary of Key Themes

Recreational Red Abalone Fishery Peer Review

August 20, 2018 | [Webinar Recording](#)

Overview

California Ocean Science Trust (OST), as requested by the California Fish and Game Commission (FGC) and the California Department of Fish and Wildlife (CDFW), coordinated an external, independent peer review to support the design of a recreational red abalone fisheries management plan (FMP). From June-October 2018, a peer review panel evaluated the scientific merits of two proposed management strategies. In an effort to promote open lines of communication and engage in information sharing with members of the red abalone community, OST, in partnership with the peer review co-leads and panelists, convened a public webinar on August 20, 2018 to:

- Learn about and discuss the red abalone community's science-based and research questions;
- Share information regarding the peer review process, including the data and questions that are currently being considered by the reviewers; and
- Build collective understanding of how the peer review aligns with the FMP process, including timelines and additional engagement opportunities.

Prior to the webinar, OST invited red abalone community members to submit their science-based and peer review process questions. More than 50 questions were received prior to August 20. Responses to these questions became the foundation for the webinar discussion and additional questions were also asked during the webinar (see Appendix 1 for complete list of questions received). Over 70 community members participated in the webinar.

The following document provides an overview of the questions asked and discussion topics and ideas that emerged from the webinar. This summary is intended to capture high-level details and key themes, rather than a transcript of the discussion. A full recording of the presentation, along with documents discussed during the webinar, are available on the [Recreational Red Abalone Peer Review webpage](#) on OST website.

Please contact Errin Ramanujam, OST, with any additional questions and comments: errin.ramanujam@oceansciencetrust.org.

I. Background Information

About Ocean Science Trust

- OST is an independent nonprofit based in Oakland, California. OST is not a government agency, and has no regulatory or management authority. Rather, OST is legislatively mandated to provide independent science to the State of California.
- With the main objective of providing sound, rigorous science to assist managers, policy makers, and community members in decision-making, OST does not advocate for particular policy or regulations. The organization frequently develops and delivers science in close collaboration with academic, federal and state scientists, and community members.

Recreational Red Abalone Fishery

- A primary goal of fishery management under the Marine Life Management Act (MLMA) is to ensure that fishing levels are sustainable and do not result in an overfished stock. This includes the recreational red abalone fishery. While past landings from 2002-2011 appear to be stable, recent declines in subtidal stocks have been recorded and the fishery was closed December 7, 2017.
- Red abalone has several characteristics which make it vulnerable to fishing pressure and environmental fluctuations. Recent declines and concerns about changing ocean conditions have prompted CDFW to develop a Recreational Red Abalone FMP to improve data collection and support timely management response.
- Proposed management strategies to be included in an FMP are required by the MLMA to undergo external, independent peer review prior to submission to the FGC. The peer review process provides CDFW, the FGC, and stakeholders assurances that FMPs are based upon the best readily available scientific information.
- Currently, there are two proposed management strategies being considered for incorporation into a Recreational Red Abalone FMP:
 - A [management strategy proposed by CDFW](#)
 - A [stakeholder submitted management strategy](#), led by The Nature Conservancy (TNC)

Peer Review Process

- As noted in the 'Overview' section of this document, OST, with support from the Ocean Protection Council (OPC), was requested by the FGC and CDFW, to coordinate an external, independent peer review of the two proposed management strategies.
- A scientific peer review panel of seven scientists was selected by the OPC Science Advisory Team (SAT) Executive Committee. The peer reviewers specialize in a range of disciplines including fisheries science, ecology, oceanography, population dynamics, etc.
- The peer reviewers' responsibility is to review the science presented in the two management strategies and evaluate each approach to make sure the management strategy that gets incorporated into the FMP will use the best available science to inform management decisions. All aspects of both proposed strategies were reviewed, including how each will support a robust FMP individually, as well as how the ideas presented across strategies could complement each other.

II. Key Themes Summary of Questions & Responses

The majority of the questions received in advance of the webinar mirrored topics, or ‘bins,’ that reviewers are considering during the peer review process. These included:

- How the peer reviewers are approaching their review of the two plans
- Indicators and changing ocean conditions
 - Productivity indicators
 - Density indicators
 - Reproductive indicators (gonad and body condition)
 - Length-based Spawning Potential Ratio (LB-SPR) & catch maximum sustainable yield (catch-MSY)
 - Environmental indicators
 - Indicators under different scenarios
- Management measure effectiveness

In addition to the questions received prior to the webinar, those who participated in the discussion on August 20 also were invited to share their science-based and process related questions. The following ‘Questions and Responses’ section considers all questions that were asked prior to and during the webinar (see Appendix 1 for a complete list of questions received from members of the red abalone community).

Peer Review Approach to Two Management Strategies

Participants asked how peer reviewers are considering the two management strategies and if they are considering ways to integrate the strategies.

- The peer reviewers are approaching this unique review holistically. They have been tasked with illuminating the scientific strengths and weaknesses of each plan, along with the ability to provide any recommendations for improvements for each management plan or identify clear areas of synergy between the two documents.
- The peer reviewers are identifying areas where both plans could be strengthened by utilizing components of the other plan. In addition, they are also thinking through scientific recommendations about how to strengthen components of each plan independently of the other.

Indicators and Changing Ocean Conditions

Productivity Indicators- Density

Density survey design and methods: Participants asked for clarification on red abalone survey design methods, the differences between the “rapid” assessments and the standard density assessments, whether CDFW changed their density protocol since 2014, and whether changing the survey protocol during the baseline years (2002-2007) or after that period changes the ability to make comparisons between years.

- The peer review is looking into the accuracy and reliability of the density survey estimates as it relates to the CDFW submitted management strategy. This includes investigating the precision with which data are informing management decisions at different spatial scales.
- Peer reviewers discussed how density, when surveyed accurately, can be used as a proxy for nearest-neighbor measurements. This is important for red abalone due to their need to be within a certain short distance of other abalone for successful spawning events.
- The cryptic nature of red abalone has been addressed through survey methods that require thorough counting by divers.

- Standard surveys collect information on habitat as well as numbers, while rapid surveys focus on the numbers.
- Density as an indicator is used differently in the draft management strategy submitted by CDFW than it was previously used. For example, to account for the implementation of marine protected areas (MPAs), CDFW modified baseline density estimates for areas that previously allowed the take of red abalone and now overlap with no-take MPAs.
- Reviewers are also looking into how both rapid and standard density surveys are being used to make management decisions.

Density as an indicator for setting target catch (CDFW proposed management strategy): Participants asked whether the density survey methods, data collection, estimates, and analysis are robust enough to manage the fishery in a timely manner. In particular, participants wanted to know if the way CDFW uses density in their proposed management strategy qualifies as a scientifically and statistically robust indicator.

- The peer reviewers are considering the use and reliability of density estimations provided in both management strategies.
- Typically, density is a good indicator of a healthy red abalone population, but the peer reviewers are reconciling whether the density estimations and the use of their results are scientifically sound as currently described in both management strategies.

Baseline density to set target catch (CDFW proposed management strategy): Participants asked whether the baseline that was established by CDFW using data from 2002-2007 is scientifically accurate and robust.

- Peer reviewers are considering the degree of accuracy needed for the baseline given current and past recorded red abalone landings. The peer review is ascertaining whether the level of resolution and the population that was present in 2002-2007 is the level needed to be considered sustainable.

Density and the TNC-led stakeholder proposed management strategy: Participants asked about the TNC-led stakeholder proposed harvest control rule (HCR) and whether the proposed management strategy incorporates the density-dependence of abalone into any of the strategy's analysis or operating models. If this is not the case, participants were also interested in learning whether not including density-dependent data is scientifically supported given the biological need for abalone to be close to one another for successful reproduction.

- The peer reviewers are looking at this question when reviewing the TNC-led stakeholder proposed management strategy, including determining the need for additional information about red abalone density-dependence at low population levels.
- The panel is also considering how removing density-dependent data from the analysis/models may impact the proposed management strategy, what the implications may be, and if the inclusion of other indicators is warranted.

Density as an indicator under changing ocean conditions: Participants asked how movement of abalone from the deep to nearshore environments affects density estimates and how different size classes are handling food loss.

- The peer reviewers explained that conditions have changed in the last couple of years since the two proposed management strategies were developed.
- While regional environmental conditions have led to the starvation and, due to lack of food, there appears to have been a migration from subtidal to very shallow regions. This movement could be a change due to migration of abalone seeking out food in the intertidal areas.

- Data suggests that all age classes of red abalone seem vulnerable to starvation and there is no size bias for food loss.

Reproductive Indicators (Gonad & Body Condition)

Participants asked about the reproductive indicators included in the CDFW proposed management strategy (e.g., gonad size & body condition) and whether there is a scientifically proven link between body mass index estimates, gonad size, and the potential for abalone to reproduce. Also, participants asked if there is a scientific basis to changing the size limit to greater than seven inches to improve the reproductive capabilities of abalone.

- The peer reviewers explained that in theory, there is a relationship between body size and the number of babies an abalone can produce. This relationship would be dependent on a healthy population of abalone that are located close together.
- If the shell is big, but the body condition is poor, then the animal might not be able to reproduce. Consequently, shell size may not be linked to reproductivity.
- In theory, increasing the take size of red abalone should increase the number of gametes, which should in turn increase the number of babies. But this also assumes that abalone are healthy and located in close proximity to one another.

Length-based Spawning Potential Ratio (LB-SPR) & Catch Maximum Sustainable Yield (catch-MSY) Indicators

Participants asked if the TNC-led HCR and its components, LB-SPR and catch-MSY, are a scientifically sound approach to managing a fishery, if it is affected by the movement of abalone, and whether it would protect against the harvest of depleted populations under unfavorable recruitment or abundance conditions.

- The peer reviewers are considering all of these questions.
- The peer reviewers are looking into how LB-SPR is used in the HCR proposed by the TNC-led stakeholder management strategy. The peer reviewers are investigating how this indicator operates in a fishery with life history traits like red abalone.
- The peer review panel has looked at the TNC HCR simulation results from the Management Strategy Evaluation and is still reviewing how the simulation results may vary under different recruitment results and natural mortality scenarios.
- The peer reviewers are also investigating the TNC HCR and its simulation testing outputs with relation to how the management strategy operates at high and low densities of abalone.

Environmental Indicators

Participants asked if the environmental indicators and triggers set in the CDFW proposed management strategy (kelp canopy, water temperature, and urchin densities) are accurate and scientifically rigorous. In addition, participants asked how red abalone populations inside MPAs, and the role of MPAs more generally, factor into population estimates, the impacts of fishing, and environmental conditions.

- The peer reviewers are considering all of the environmental factors mentioned and how they could be used in a management strategy. Kelp canopy, water temperature, and urchin densities are known to have dramatic impacts on populations and the peer reviewers are investigating the scientific underpinnings of these as indicators in a management strategy.
- The population size in MPAs could be used as a reference point for populations outside of MPAs where the harvest of red abalone is permitted. The peer review panel is considering the best way to use MPAs as a reference point.

- The peer review panel is evaluating the methods proposed for utilizing the environmental indicators and triggers and how they will respond to changing ocean conditions. It is not within the scope of this peer review to consider how CDFW will address future ocean conditions through changes in survey method or in management response.

Indicators Under Different Scenarios

Abalone Recovery & Re-opening: Participants asked how long will it take for red abalone populations to recover, whether using historic density levels to establish criteria for reopening the fishery makes sense considering the long-term impacts of global warming, and if a new reduced criteria should be used to establish a sustainable fishery at a smaller abalone density and catch level. Participants also asked if different elements of reopening under the CDFW proposed management strategy are scientifically sound and robust, including the thresholds for tracking changes in the population and how they are used to make management decisions about reopening.

- Peer reviewers are considering these questions, however it is unlikely the questions will be addressed during the review because more information needs to be gathered to understand what the answers are.
- The idea of allowing very low catch levels is a management question. Science can help managers and community members understand population levels and assess impacts to stock at various levels of take (although this question is outside the scope of this peer review), but the decision to allow access and determine the level of risk to damaging the stock is ultimately a management decision.
- The peer review panel considers reopening to be part of the scope of the review and has asked CDFW and TNC how they could include metrics that take reopening into consideration. The panel is will review any additional information received from CDFW and TNC.

Kelp: Participants asked whether the fishery should be completely closed until kelp beds return.

- Kelp is an indicator in the CDFW proposal, but the peer reviewers noted that the proposed way to assess kelp is based on aerial photographs of the coastline, yet several kelp species are not viewable from the air. The peer reviewers are considering this information to assess if kelp, as proposed, is a scientifically rigorous indicator.

General: Participants asked about priority gaps in research and monitoring and whether CDFW will be able to collect and maintain the information necessary to achieve management targets for the stocks. In addition, there was interest in understanding how both proposed management strategies are taking into account the different habitats in fished areas.

- The peer review panel has not been tasked with identifying priority gaps in research.
- Peer reviewers are considering the habitat and spatial components included in both proposed management strategies.

Management Measure Effectiveness

Participants asked whether the different management measures proposed in both proposed management strategies are effective at regulating catch, viable for dealing with poaching, and consider the possibility of urchin culling for restoration.

- Evaluating management measures, including enforcing poaching and removing urchins, are outside the scope of this review. Participants are encouraged to reach out to Sonke Mastrup, CDFW Environmental

Program Manager, Invertebrate Program, with thoughts and questions. He can be reached at Sonke.Mastrup@wildlife.ca.gov. Participants are also welcome to bring these types of questions to upcoming Fish and Game Commission meetings where the Recreational Red Abalone FMP will be discussed ([schedule here](#)).

Additional Areas of Interest Identified During the Webinar

Participants had additional questions that were not addressed during the webinar. These included questions about monitoring, data sharing, and additional clarifications about current and proposed methodologies. Many of these questions will not be addressed by the peer review. As mentioned above, CDFW encouraged participants to reach out to Sonke Mastrup and/or bring these types of questions to upcoming Fish and Game Commission meetings.

Appendix 1: Community Questions

Peer Review Approach to Two Management Strategies

- How are the peer reviewers thinking about their review of the two management strategies?
- Are the peer reviewers thinking about ways to integrate the plans?
- How will the peer review inform management decisions once completed?

Indicators and Changing Ocean Conditions

Productivity Indicators

Productivity density survey design and methods

- How do the surveys consider the cryptic nature of abalone (e.g. some on top of rocks, others below)? How does this affect the reliability or accuracy of the density survey data?
- What are the differences between the “rapid” assessments and the standard density assessments and are they statistically directly comparable?
- Has CDFW changed their density protocol per the recommendations of the 2014 OST convened peer review? Has this addressed the concerns raised? If so, how scientifically robust and statistically significant are the density surveys the way the CDFW uses them in the current proposed management strategy/plan, both for overall density and for deep water density?
- Has there ever been a change in the protocol for density transects since the baseline data was collected from 2002-2007, and if so, what effects do those changes have on comparisons between the baseline period and subsequent years?
- What is the appropriate level of density data to acquire for it to be useful for making management decisions?
- How are changes in size limited related to nearest neighbor differences?
- How is the density indicator impacted by the population outside the center of the management area?

Using density as an indicator for setting target catch (CDFW plan)

- Are the density survey methodology, data collection, estimates, and analysis robust enough to use to manage the fishery in a timely manner? If not, how much more data would be required to achieve this? How much would it cost to gather this additional information?
- Is the way CDFW uses density in their proposed management strategy a scientifically and statistically significant indicator?
 - Are the more limited site-specific monitoring and control rule provisions sufficient to account for the spatial specificity of abalone population dynamics?

Density Indicators

Density as an indicator for setting target catch (CDFW plan)

- Is the baseline that has been established using data from 2002-2007 scientifically accurate and robust? Is there a scientific basis to continue using it?
 - Is there a chance that this baseline is artificially high due to the extinction of the abalone primary predator, sea otters, before this baseline period began?
 - Does fishing replace otters as the abalone main predator? How does the rate of fishing predation compare with otters?

Density and the TNC-led stakeholder proposal

- Does the TNC-proposed harvest control rule (HCR) incorporate the density-dependence of abalone into any of their analysis or operating models?

- Is the decision to eliminate density-dependent data scientifically supported given the biological need for abalone to be close to neighbors for successful reproduction?

Density as an indicator under changing ocean conditions

- How does the movement of abalone from deep water into nearshore environments impact the density estimates, including CDFW's use of deep water transects as part of that density estimate methodology?
 - Does the movement of abalone out of the deep water refuge change how CDFW thinks about maintaining a sustainable fishery?
 - How does this affect overall densities and their statistical reliability?
- How are the different size classes handling the loss of food? Is the loss of food affecting each size class differently?
- How does the reproductive potential of abalone at different sizes affect the indicator? Do abalone stop reproducing at certain sizes?
- How much do we know about gonad size and body condition as it relates to abalone reproduction?

Reproductive Indicators (Gonad & Body Condition)

Productivity – Reproductive

- For the reproductive indicators utilized by CDFW (e.g., gonad size & body condition), is there a scientifically proven link or relationship between the estimate of body mass index and the abalones ability to reproduce?
 - How about for gonad index?
- Is there a scientific basis to changing the size limit to greater than 7" will improve the reproductive capabilities of abalone?
- Is the overall management target of maintaining 60% egg production appropriate and scientifically well supported?

Length-based Spawning Potential Ratio (lb-SPR) & Catch Maximum Sustainable Yield (MSY) Indicators

- Does the movement of abalone affect the way the TNC HCR works?
- Does the TNC HCR represent a scientifically sound approach to managing a fishery? Would it potentially allow harvest on depleted populations or under unfavorable recruitment or abundance conditions?
- How is MSY determined with length based SPR when the abalone is atrophied and how would that information be applied for viable abalone management measures?

Environmental Indicators

- Are the environmental indicators and triggers set in the CDFW proposed management strategy accurate and scientifically rigorous (eg. kelp canopy, water temperature, and urchin densities)?
- How do the MPAs and populations inside the MPAs factor into the population estimates and the impacts of fishing and environmental conditions? Could population dynamics inside the MPAs bound models?
- Do these environmental indicators or the way they are used allow for changes in survey methods if there are changes in the environment in the future? Is there a public process before these changes in methodologies could occur?
- Will the peer reviewers be assessing each environmental indicator?
- How scientifically viable are the thresholds associated with each indicator? Should there be a range rather than a specified number?

Indicators Under Different Scenarios

Abalone Recovery

- How long will it take for the population to recover? How long will it take for abalone to recover to a density greater than .45/m²?
- Considering the likely, long-term impacts of global warming, is it defensible to use historic density levels to establish criteria for reopening the fishery? Should new, reduced criteria be used to establish a sustainable fishery at a smaller abalone density and catch level?
 - Is it possible to manage the fishery to a much lower level of take and have it be sustainable and/or recover to better levels over time?
 - What additional science/data would be required to assess the risk of reopening the fishery?
 - Are the trade-off considerations between catch reductions and recovery discussed in the TNC report (and elsewhere)? Is this proposed approach well-founded and appropriate? Is 25 years a suitable recovery timeframe?

Abalone Fishery Reopening

- Are the different elements of reopening under the CDFW plan scientifically sound and robust?
 - What is the mechanistic link between the environmental and density (> 0.25 m²) thresholds set by CDFW and the stock status of abalone, and how does the CDFW explicitly define favorable, as they relate to fishery reopening?
 - What is the scientific relevance of the size class distributions as outlined in the plan (i.e. sub-legal sized population of abalones be >30% of the total population and that legal sized abalone have a population >40% of the total)?
 - What research or analyses are available to inform the choice of thresholds for these environmental indicators (under reopening especially) to demonstrate that they are “favorable”?
- Are the thresholds scientifically robust and relevant for tracking changes in the population and making management decisions about reopening?

Kelp

- Should the fishery be completely closed until kelp beds return?

Indicators Under Different Scenarios — General

- Are research and monitoring needs comprehensive to allow CDFW to collect and maintain essential fishery information necessary to achieve management targets for the stock?
- Are there any priority gaps in research and monitoring that should be addressed or included?
- How are both plans taking into account the different habitats in the areas fished. For example, the differences between Humboldt/Del Norte areas vs. Sonoma/Mendocino counties?

Management Measure Effectiveness

- Are the different management measures proposed effective at regulating catch?
- Are the measures and enforcement that CDFW has viable for dealing with poaching of red abalone?
- Will urchin culling in select areas restore the diversity of marine life and act as sanctuaries from urchins to repopulate the coast when conditions improve?

Additional Areas of Interest

- Where does monitoring fit? While monitoring is likely addressed within many of the bins, I wonder if the subjects of data management and data sharing are included in the management plan?
- Concerns expressed that there is limited public trust in how CDFW has considered density in the past.

Terms of Reference

Red Abalone Fishery Management Plan
Management Strategy Scientific Peer
Review Process

2018



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Appendix: Outline of Example Peer Review Report

1. Introduction

1.1. Management Context

The northern California populations of red abalone support a very popular recreational fishery throughout northern California. While past landings (2002-2011) appear to be stable, recent declines in subtidal stocks have been recorded and the fishery is now closed. Red abalone has several characteristics, which make it vulnerable to fishing pressure and environmental fluctuations.

In 2005, the Fish and Game Commission (FGC) adopted the Abalone Recovery and Management Plan (ARMP), which governs the management of the recreational red abalone fishery and recovery of southern abalone stocks. This plan sets management guidelines and triggers for Total Allowable Catch (TAC) adjustments based on 2 criteria – density and recruitment. The ARMP has two phases of adaptive management: the interim management plan which the fishery is currently managed under, and the long-term management plan. The interim plan manages the northern California fishery as a single unit on a highly precautionary basis. The ARMP objective is to move the fishery into long-term management, where management is locally based, more responsive and adaptive, while maintaining sustainability. Management changes to the fishery in 2014 marked the beginning of this move to long term management conceptually by differing regulations between southern and northern areas of the fishery. The transition to ARMP long-term management provides an opportunity for the California Department of Fish and Wildlife (CDFW) to move management of the recreational red abalone fishery to a fishery management plan (FMP) under the Marine Life Management Act (MLMA).

A primary goal of fishery management under the MLMA is to ensure that fishing levels are sustainable and do not result in an overfished stock. Recent declines and concerns about changing ocean conditions have prompted the need for more information and a quicker management response, which the long-term management under an FMP seeks to provide for this fishery. FMPs assemble information, analyses, and management options that serve as a vehicle for the CDFW to present a coherent package of information, and proposed regulatory and management measures to the FGC. The FMP becomes effective upon adoption by the Commission, following their public process for review and revision.

Thus, it is important for the scientific underpinnings of the draft FMP to undergo external, independent peer review prior to submission to the FGC. This process is one way to provide FGC and stakeholders assurances that FMPs are based upon the best readily available scientific information, as set forth under the MLMA. The FGC and CDFW have asked for both the management strategy proposed by CDFW and a stakeholder submitted management strategy, led by The Nature Conservancy (TNC), to be included in the peer review. Each of the groups have provided an independently developed management strategy for consideration.

1.2. Review Process Goals and Objectives

Ensuring the best use of best available information in fisheries management is an important tenet of the MLMA. The MLMA identifies external scientific review as a key tool to ensure management decisions are based on the best available scientific information. CDFW is committed to incorporating the best available scientific information into fisheries management through a peer review process.

Scientific and technical peer review (review) is widely applied across numerous technical disciplines to assure products are of high quality, reflect solid scholarship, and that the information contained is accurate and based on rigorous, sound scientific methods (OST 2016). In any review, Ocean Science Trust's (OST) intent is to provide an assessment of the work product that is balanced, fairly represents all reviewer evaluations, and provides feedback that is actionable. When building a review process, OST seeks to balance and adhere to six core review principles: scientific rigor, transparency, legitimacy, credibility, salience, and efficiency. These principles ground the review and shape the products that we develop.

As such, the goals and objectives of the FMP review process are to:

1. ensure that the science underpinning the FMP represents the best scientific information available and is appropriately used to inform a harvest control rule;
2. follow a detailed calendar and fulfill explicit responsibilities for all participants to produce required reports and outcomes;
3. provide an independent external scientific and technical review of the agreed upon sections of the red abalone FMP;
4. use review resources effectively and efficiently.

1.3. Review Coordinating Body: Ocean Science Trust

Ocean Science Trust is an independent non-profit organization working across traditional boundaries to bring together governments, scientists, and citizens to build trust and understanding in ocean and coastal science. We empower participation in the decisions that are shaping the future of our oceans. We were established by the California Ocean Resources Stewardship Act (CORSAs) to support managers and policymakers with sound science.

For more information, visit our website at www.oceansciencetrust.org.

Contact information

Errin Ramanujam, California Ocean Science Trust (errin.ramanujam@oceansciencetrust.org)

2. Peer Review Scope and Process

2.1. Review Request

CDFW and FGC's purpose in asking OST to conduct a review of the scientific and technical components of both the CDFW and the TNC management strategy is to ensure the scientific and technical elements provide a rigorous underpinning for management decisions and regulatory action should they be implemented. Ocean Science Trust is serving as the review coordinating body, and worked with CDFW and TNC to develop a scope of review that focuses on key scientific and technical components of the management strategies where independent scientific assessment would add value (this document). Components subject to review were determined using criteria from OST 2017 ([here](#)).

2.2. Scope of review

CDFW is seeking an independent assessment of the red abalone management strategy developed by CDFW, as well as the stakeholder-submitted management strategy led by TNC.

The central question of this review is:

Are the underlying data and analysis, and application of those in each of the proposed management strategies scientifically sound, reasonable and appropriate while also meeting the management goals for the recreational red abalone fishery in northern California as defined by MLMA?

The review will focus on evaluation of the following components of both management strategies:

- Evaluation of the data collection methods that inform management indicators, triggers, and decisions including informing responses to changes in the environment, fishing, or other stressors.
- What is the scientific rationale for the indicators used and their link to responses in the abalone population?
- Is the proposed quantitative analysis and application of the data scientifically rigorous and is the scientific rationale for the proposed management actions it triggers accurate?
- Evaluation of modelling approach used including model assumptions, analyses, interpretation, and application of the model results to evaluate performance of the harvest control rules against management objectives.

- From a scientific perspective, provide a general assessment of the proposed methodologies including application, assumptions, and management implications of uncertainties in the stock status, data streams, and analytical method within the confines of CDFW capacity and regulatory authority

For clarity we note that this is not a comprehensive review of the entire FMP. Rather, we are reviewing only the management strategies submitted by TNC and by CDFW.

2.3. Process

Review Process Overview

- **Select a review mode.** A review process is selected in consultation with CDFW, Ocean Protection Council, and any other relevant groups (contractors, authors, etc.) by considering complexity, management risk, uncertainty, socioeconomics, level of previous review, and novelty (OST 2016; OST 2017).
- **Assemble review team.** Ocean Science Trust will convene a ~6 member review panel composed of Ocean Protection Council Science Advisory Team members and other experts (see “Assembling a Review Team,” OST 2016 and “assembling a review team” below for additional details).
- **Conduct review via a series of webinars.** Group webinars will allow CDFW and TNC to engage directly with reviewers at the outset to present the inputs, model methods, and application of analyses and provide two-way interaction to provide any additional clarity needed to complete the review. Many of the webinars will allow for independent deliberation and conversation among reviewers. Given the timeline no in person workshop will be convened.
- **Develop and share final report.** Reviewers will contribute to the development of a final report, which will be made available on OST and CDFW webpages.
- **Review process:** A single peer review panel will review both the CDFW management strategy and the stakeholder-submitted management strategy at the same time. CDFW, FGC, TNC, and OPC formally requested OST to conduct the review in this way. There will be one summary report will be submitted which covers both management strategies.

Review Mode: Remote Panel Review

All meetings will take place via remote online meetings (webinars). At the outset of the review, OST will work with CDFW and TNC to develop detailed reviewer instructions that encourage focused scientific feedback throughout the process. Instructions will include directed evaluation questions and may delegate tasks for reviewers based on their individual areas of expertise. This document will be used to guide the development of meeting agendas and track progress throughout the course of the review. For each meeting, advance work will be required of participants (e.g. drafting responses to guiding

questions) in order for all parties to come prepared for meaningful discussions. OST will notify CDFW and TNC of additional requested materials and data immediately throughout the duration of the review.

Webinar 1: Initiation of Review

Ocean Science Trust will host an initial webinar to provide the review committee, CDFW, and TNC an overview of the scope and process, and clarify the roles and responsibilities of each participant. CDFW will also provide a summary of the relevant management context to ensure reviewers understand the role of the review in the larger FMP development process, and how the outputs will be considered. The bulk of the webinar will then focus on a presentation by CDFW and TNC of the scientific and technical components of each management strategy. This webinar is an opportunity to develop a shared understanding of the tasks and allow reviewers to ask CDFW and TNC any clarifying questions about the review materials or request additional materials before they convene independently to conduct their technical assessment.

Webinar 2-3: Reviewers convene with OST to conduct review

Ocean Science Trust will convene approximately two remote two to three-hour webinars with the review committee to conduct an in-depth evaluation of the components identified in the Scope of Review (above). In advance of each webinar, reviewers will be asked to prepare responses to guiding evaluation criteria questions specified in the review instructions. During each webinar, reviewers will discuss their findings and develop conclusions and recommendations within the context of these questions. Additional follow-up phone conversations may be scheduled as needed to complete the review. Outputs from each webinar, as well as reviewer responses to the questions, will guide the development of the final report.

Webinar 4: Final summary report feedback

Ocean Science Trust will host a final 2-hour webinar to gather final feedback and input from the review panel on the summary report. The review panel will be asked to review the draft summary report in advance of this meeting. This final meeting will provide a space for reviewers to voice any suggested edits or clarifications, and a chance to have a final discussion about results before sharing the final report with CDFW and TNC.

Assembling Reviewers

Transparency

Reviewer names will be published on OST's webpage for the review at the outset of the review; however, specific review comments in the final review report will not be attributed to individual reviewers.

Selection of Reviewers

Ocean Science Trust will implement a reviewer selection process to assemble a review committee composed of ~6 external scientific experts. Ocean Science Trust will consult with and solicit reviewer recommendations from CDFW, TNC, the Ocean Protection Council Science Advisory Team (OPC-SAT), as well as OST's own professional network among the academic and research community. Membership may include experts from academia, research institutions, and government agencies as appropriate to deliver balanced feedback and multiple perspectives. Reviewers will be considered based on three key criteria:

Expertise: The reviewer should have demonstrated knowledge, experience, and skills in one or more of the following areas:

- ecology of invertebrates and/or red abalone
- fisheries science and management (e.g. HCR, TAC, management triggers)
- modeling for fisheries management use (e.g. Management Strategy Evaluation)
- invertebrate and/or red abalone population dynamics and indicators specific to understanding the response to environmental, fishing, and other stressors
- sampling and data collection methods for invertebrate and/or red abalone population studies
- statistical analysis methodologies

Objectivity: The reviewer should be independent from the generation of the product under review, free from institutional or ideological bias regarding the issues under review, and able to provide an objective, open-minded, and thoughtful review in the best interest of the review outcome(s). In addition, the reviewer should be comfortable sharing his or her knowledge and perspectives and openly identifying his or her knowledge gaps.

Conflict of Interest: Reviewers will be asked to disclose any potential conflicts of interest to determine if they stand to financially gain from the outcome of the process (i.e. employment and funding). Conflicts will be considered and may exclude a potential reviewer's participation.

Final selection of the review committee panel will be made by the OPC-SAT Executive Committee. Ocean Science Trust will select one member of the review committee to serve as chair to provide leadership among reviewers, help ensure that all members act in accordance with review principles and policies, and promote a set of review outputs that adequately fulfill the charge and accurately reflect the views of all members.

Transparency in the Review Process

Once selected and shared with the CDFW and TNC teams, Ocean Science Trust will publish this terms of reference document to our website. OST will reach out to key communicators to share the website information and alert them to the review. Upon delivery of the final report to CDFW, the report will also be made public on the OST review webpage. OST will then host a webinar with key members of the review team to share results of the review with any interested stakeholders. CDFW and TNC may participate in this webinar at their discretion.

Management Preview and OPC-SAT Endorsement

Ocean Science Trust will share the final summary report with CDFW and TNC for a preview before the review results are published and shared with the public. There will be an opportunity for CDFW and TNC to ask clarifying questions of the review committee and for reviewers to make clarifying edits only, as appropriate. This may occur via email, conference call or short webinar as time allows.

As a product of the OPC-SAT, near-final reports must go through a full OPC-SAT endorsement before public release.

2.4. Review Report (reference appendix template)

Ocean Science Trust will work with reviewers to synthesize reviewer assessments (responses to the review instructions and input during webinars) into a cohesive, concise final written summary report. This review summary will be delivered to CDFW by xxx 2018, and made publically available on OST’s website. We acknowledge that reviewers may provide recommendations beyond the given reviewer charge; such recommendations will be honored and represented in the final summary as deemed appropriate by the review panel.

2.5. Timeline

The review will commence May 2018 with the expected delivery of a final summary report to CDFW by August 2018. A timeline of each task is provided below.

	April	May	June	July	Aug	Sept
Receive Draft FMP			June 1			
Terms of Reference Development (April-May)		X				
Develop and Finalize Terms of Reference	X	X				

Assemble Review Team and Develop Guidance for Reviewers (April - May)	X	X				
Develop/put up webpage		X	X			
Solicit, select, and confirm reviewers	X	X				
Schedule webinars		X	X			
Develop Review Instructions	X	X				
Develop webinar agendas		X	X	X	X	
Conduct Review (June-August)						
Distribute TOR, review materials, and Review Instructions to reviewers			X			
Kickoff webinar			X			
Webinar 2			X	X		
Webinar 3				X	X	
Final Webinar					X	
Additional data requests to DFW/TNC			X	X		
Develop outline and draft report, edits from reviewers					X	
Final draft to reviewers					X	
Final edits					X	
Management preview					X	
Final Report to DFW						X
Post final report on OST website						X
Follow-up as appropriate						X

3. Roles and Responsibilities of Peer Review Participants

3.1. Shared Responsibilities

All participating parties share the responsibility in assuring adequate technical and scientific review of the Red Abalone management strategies in accordance with the MLMA.

3.2. Reviewer Responsibilities

The role of the review committee is to conduct a detailed evaluation of the scientific underpinnings of aspects of both the Red Abalone management strategies, where external review will be valuable. The specific responsibilities of the review committee are included in the Review Instructions. The review committee may request additional information, data, and analyses as appropriate to support a comprehensive and useful review.

The review committee chair has, in addition, the responsibility to: 1) provide leadership among reviewers; 2) ensure that review committee participants follow the terms of reference, adhere to the charge for the review, and review instructions and guidelines; and 3) promote review outputs that adequately fulfill the charge and accurately reflect the views of all members.

The review committee is required to make an honest and legitimate attempt to resolve any areas of disagreement during the review process. Occasionally, fundamental differences of opinions may remain between reviewers that cannot be resolved. In such cases, the review committee will document the areas of disagreement in the final summary report.

Selected reviewers should not have financial or personal conflicts of interest with the scientific information, subject matter, or work product under review within the previous year (at minimum), or anticipated. Reviewers should not have contributed or participated in the development of the product or scientific information under review. Review committee members who are federal employees should comply with all applicable federal ethics requirements. Reviewers who are not federal employees will be screened for conflicts of interest.

3.3. CDFW and TNC Team Responsibilities

CDFW and TNC will participate in the review process as follows:

1. Provide all relevant project documents, data, and supporting materials.

- a. Identify and provide all project documents, data, and other information necessary for reviewers to conduct a constructive assessment.
 - b. Work to ensure all related materials are clear and accessible to reviewers in a realistic timeframe and respond to additional requests in a timely manner.
2. Constructively engage with reviewers and OST staff, and respond to data and other information requests in a timely manner.
- a. Engage in the process and be available to answer questions or present materials to the review committee as necessary.
 - b. Sonke Mastrup (CDFW) and Alexis Jackson (TNC) will serve as the primary contacts during the review process. In order to adhere to review timelines, CDFW and TNC will respond to and provide feedback on requested materials from OST in a reasonable, mutually agreed-upon timeframe.
3. Consider reviewer comments and recommendations. CDFW, FGC, and TNC intend to consider and incorporate reviewer feedback and recommendations into the management strategy for the FMP and supporting materials as appropriate.

3.4. Ocean Science Trust Responsibilities

California Department of Fish and Wildlife, FGC, and TNC have requested OST to serve as the independent appointed entity to design and coordinate all aspects of this scientific and technical review. Ocean Science Trust will design and implement all aspects of the review process to meet management needs, including assemble and guide a committee of expert reviewers, conduct a review process that is on task and on time, schedule and host remote meetings as appropriate, work with reviewers to produce a written final summary report, and encourage candor among reviewers, among other activities. Upon completion of the review, the final report will be delivered to CDFW and TNC and made publicly available on the OST website for all constituents. Throughout, OST will serve as an honest broker and facilitate constructive interactions between CDFW, TNC, and reviewers as needed in order to ensure reviewers provide recommendations that are valuable and actionable, while maintaining the independence of the review process and outputs.

Appendix: Outline of Example Peer Review Report

The following is an example template for a peer review report:

1. Summary of the Peer Review Committee, containing:
 - a. Names and affiliations of committee members
 - b. Topic(s) being reviewed
 - c. List of analyses requested by the Committee, the rationale for each request, and a brief summary the responses to each request

2. Comments on the technical merits and/or deficiencies in the applications of the analyses underpinning the FMP and recommendations for remedies. Comments should address issues such as the following:
 - a. What are the data requirements of the analyses underpinning the FMP?
 - b. What are the situations/stock status for which the analyses are applicable?
 - c. What are the assumptions of the methodology and/or in applying the proposed analyses?
 - d. Are the methodology and application of the analyses correct from a technical perspective?
 - e. How robust are results to departures from the assumptions of the analyses?
 - f. Do the application of the analyses take into account estimates of uncertainty? How comprehensive are those estimates?
 - g. Will the new analyses and application of analyses result in improved stock assessments or management advice?
3. Areas of disagreement regarding panel recommendations:
 - a. Among panel members
 - b. Between the panel and proponents
4. Unresolved problems and major uncertainties (e.g., any issues that could preclude use of the analyses underpinning the FMP)
5. Management, data, or fishery issues raised by the public and other representatives during the panel review
6. Prioritized recommendations for future research and/or data collection

COMMITTEE STAFF SUMMARY FOR JULY 20, 2017

growers. At the Feb 2016 FGC meeting, staff proposed options to establish a requirement for BMPs unique to each state water bottom lease area (see Feb staff summary in Exhibit A1). FGC ultimately gave direction to pursue a regulatory approach and DFW staff agreed to work with FGC staff, growers, and the public to cooperatively develop categories for best management practices. Today DFW staff will report out on the first public meeting held on Jul 17, 2017 in Marshall, near Tomales Bay (see Exhibit A2), and describe next steps for public engagement.

- (B) **New leases:** Persons wishing to lease a state water bottom for aquaculture are required to make a written application to FGC (Fish and Game Code Section 15403). FGC has not approved a new lease in over 25 years. However, interest in further developing the industry continues to grow, and its value is recognized by the California State Legislature (Exhibit B1). In Feb 2017, FGC received an application for a new lease in Tomales Bay; in addition, an application for new aquaculture lease plots offshore Ventura is being developed. The public has requested to provide input on what information FGC may need to consider before making any determinations to approve new state water bottom lease applications; FGC has referred this topic to MRC for an initial discussion today.

Significant Public Comments

- Comments on item 7A supporting formal aquaculture BMPs that are mandatory, legally binding and adequately enforced, coupled with an inspection and monitoring program. Recommendation that BMPs be enacted before considering new aquaculture leases, and a list of ten proposed BMPs. See exhibits A3 and A4.

Recommendation (N/A)**Exhibits**

- A1. Staff summary from Feb 2016 FGC meeting
- A2. Agenda, location map, and DFW background document for BMP public meeting on Jul 17, 2017
- A3. Email from Ashley Eagle-Gibbs, Esq., Environmental Action Committee of West Marin, received Jul 7, 2017
- A4. Email from Richard James, received Jul 7, 2017
- B1. Bill text for Assembly Joint Resolution 43, adopted Aug 21, 2014

Committee Direction/Recommendation (N/A)

COMMITTEE STAFF SUMMARY FOR JULY 17, 2018

5. SHELLFISH AQUACULTURE BEST MANAGEMENT PRACTICES

Today's Item

Information Direction

Receive overview of public meeting outcomes and discuss next steps in developing a rulemaking to require best management practices (BMPs) plans for state water bottom leases issued by FGC for purposes of aquaculture.

Summary of Previous/Future Actions

- | | |
|--|--|
| • FGC discussed possible BMPs | Feb 10-11, 2016; FGC, Sacramento |
| • FGC supported BMPs rulemaking approach | Jun 22-23, 2016; FGC, Bakersfield |
| • MRC discussed aquaculture debris | Jul 21, 2016; MRC, Petaluma |
| • MRC update on BMPs development | Jul 20, 2017; MRC, Santa Rosa |
| • Last update on BMPs development | Mar 6, 2018; MRC, Santa Rosa |
| • Today's update on BMPs rulemaking | Jul 17, 2018; MRC, San Clemente |

Background

FGC has the authority to lease state water bottoms to any person for the purpose of conducting aquaculture in marine waters of the state, with the exception of Humboldt Bay, under terms agreed upon between FGC and the lessee (Sections 15400 and 15405, California Fish and Game Code). While general regulations in Section 237 govern all aquaculture leases, terms are established for individual state water bottom lease areas in a lease agreement.

Statewide there are currently 17 active FGC-issued state water bottom aquaculture leases with 10 companies. In recent years, public attention has focused on shellfish aquaculture practices and stewardship on certain aquaculture leases, particularly related to marine debris. In 2016, FGC approved a staff recommendation to address the concerns through a rulemaking that would require an FGC-approved shellfish aquaculture BMPs plan for each lease. The regulation would identify what must be addressed in a shellfish aquaculture BMPs plan in order to obtain FGC approval to engage in shellfish aquaculture activities on a state water bottom lease issued by FGC.

MRC had discussions in Jul 2016 and Jul 2017 (see Exhibit 1, part A, for more background), including a report of outcomes from a BMPs public meeting held near Tomales Bay in Jul 2017 (Exhibit 2). At that time, DFW anticipated holding a second public meeting in the southern portion of the state. In Mar 2018, MRC received a more detailed DFW presentation on the status of current State aquaculture leases, the broad scope of current management activities requiring focus in addition to BMPs planning—including compliance efforts and future planning—and a request for prioritization. Several public comments urged DFW to resume focus on developing BMPs requirements and holding the southern public meeting as soon as possible. MRC recommended, and FGC approved, that statewide information-gathering and public engagement efforts to define BMPs plan requirements be prioritized for completion, and requested an update at the next MRC meeting.

COMMITTEE STAFF SUMMARY FOR JULY 17, 2018

In response, DFW and FGC staff jointly held a second public meeting on May 29, 2018, in Santa Barbara (see meeting summary in Exhibit 3), which brought together a broad spectrum of aquaculture and fishing industry members, researchers, and agency representatives. Today, DFW and FGC staff will report on outcomes from the public meeting, present initial BMPs categories derived from public meetings and from research, and discuss next steps in developing draft regulation language for public and MRC review.

Significant Public Comments

One commenter recommends requiring copies of other agency aquaculture permits and requirements associated with the leased aquaculture site in BMPs plans for ease of reference (Exhibit 4).

One commenter expressed support for adopting BMPs identified on the “coastodian dot org” website (previously submitted to MRC), and supports enforcement of BMPs and laws governing aquaculture practices (Exhibit 5).

Recommendation

FGC staff: Support DFW and FGC staff drafting proposed requirements for issues to address in BMPs plans for state water bottom leases based on the concepts presented by staff, providing opportunity for public review of the draft proposal, and scheduling for MRC review and possible recommendation in Nov 2018.

Exhibits

1. Staff summary from Jul 20, 2017 MRC meeting (for background purposes)
2. Summary of BMPs public meeting held in Marshall on Jul 17, 2017
3. Summary of BMPs public meeting held in Santa Barbara on May 29, 2018
4. Email from Bob Johnson, received Apr 1, 2018
5. Email from Don S., received Mar 31, 2018

Committee Direction/Recommendation

MRC recommends that FGC support staff drafting proposed requirements for issues to address within BMPs plans for state water bottom leases based on the concepts presented by staff, providing opportunity for public review of the draft proposal, and scheduling for MRC review and possible recommendation in November 2018.



California Fish and Game Commission
1416 Ninth Street, Room 1320
Sacramento, CA 95814

STATE OF CALIFORNIA
EDMUND G. BROWN JR., GOVERNOR

NATURAL RESOURCES AGENCY



California Department of Fish and Wildlife
1416 Ninth Street, 12th Floor
Sacramento, CA 95814

Shellfish Aquaculture Best Management Practices (BMPs) Stakeholder Discussion

MEETING AGENDA
October 25, 2018, 2:00 – 4:00 PM

Central Santa Rosa Library
211 E Street, Santa Rosa, CA

This meeting may be audio-recorded.

Meeting Goal

- Discuss the proposed requirements for BMPs within aquaculture lease BMP plans, which will be considered for future rulemaking by the Commission

1. Welcome

- (A) Introductions and ground rules
- (B) Statement of meeting goal

2. Overview of background and milestones

3. Staff overview of draft proposed requirements for site BMP plans

4. Group discussion on draft proposed requirements for site BMP plans

5. Next steps and schedule for FGC process

Adjourn

Thank you for participating!

**California Fish and Game Commission and
California Department of Fish and Wildlife**

**Proposed Requirements for Shellfish Aquaculture Lease
Best Management Practices (BMP) Plans Regulation**

October 24, 2018

Background

The California Fish and Game Commission (Commission) has the authority to lease state water bottoms to any person for the purpose of conducting aquaculture in marine waters of the state, with the exception of Humboldt Bay, under terms agreed upon between the Commission and the lessee (Sections 15400 and 15405, California Fish and Game Code). General regulations in Section 237 of Title 14, California Code of Regulations, govern all aquaculture leases, while terms are established for individual state water bottom lease areas in a lease agreement.

Statewide there are currently 17 active, Commission-issued, state water bottom aquaculture leases with 10 companies. In recent years, public attention has focused on shellfish aquaculture practices and stewardship on certain aquaculture leases, particularly related to marine debris. Responding through Commission-approved best management practices (BMPs) by shellfish aquaculture leaseholders provides a promising approach to collaborative environmental stewardship, adaptive management, and administrative efficiency. In 2016, the Commission approved a staff recommendation to address concerns through a rulemaking that would require growers to develop, and Commission- to approve, a BMP plan for each shellfish aquaculture lease. The regulation would identify what objectives or outcomes must be addressed in the BMP plans in order to obtain Commission approval of that plan.

Stakeholder Outreach to Date

Over the course of two public stakeholder meetings (July 2017 in Marshall, near Tomales Bay, and May 2018 in Santa Barbara), and public briefings to the Commission and its Marine Resources Committee (MRC) over the past three years, staff from the Commission and the California Department of Fish and Wildlife (DFW) have collected input and heard concerns voiced by stakeholders, aquaculture leaseholders, and other responsible agencies on the concept of a shellfish aquaculture BMP rulemaking.

Themes for Possible BMP Categories

At the July 2018 MRC, DFW and Commission staff reported on the outcomes from the public meeting, presented initial BMPs categories derived from the public meetings and from research, and discussed next steps in developing draft regulation language for public and MRC review. DFW noted that many of the concerns voiced during the outreach process are fully or partially addressed by conditions imposed by leases, permits, codes, or regulations at both the state and federal levels (e.g., siting, water quality, navigational hazards, biosecurity, etc.), and recommended that these be excluded from BMP requirements. The remaining

concerns were grouped into several key concepts that could be addressed through BMP plans. Staff has organized these into the following categories:

- ***Reduce ocean litter, marine debris, and plastic pollution***
 - Materials, gear design and installation
 - Maintenance and operational preparations, practices and responses
 - Clean-up participation
- ***Minimize impacts to living marine resources and their habitats***
 - Wildlife interactions
 - Vessel and vehicle use (water, land, and air)
- ***Commit to, train for, and demonstrate compliance with BMP plans***
 - Company standards and worker training

Following discussion, MRC developed a recommendation that the Commission “direct staff to apply the concepts presented during the [MRC] meeting to draft proposed requirements for best management practices plans for state water bottom leases, provide opportunity for public review of the draft proposed language, and schedule the draft proposed language for MRC review and possible recommendation in November 2018.” In August, the Commission adopted the MRC recommendation.

The purpose of this document is to invite public review and feedback on proposed requirements and other considerations for site-specific shellfish aquaculture BMP plans.

Draft Proposed Requirements for Site BMP Plans

Under the envisioned new regulation, current and prospective aquaculture leaseholders would be required to submit proposed BMPs and other required topics within a BMP Plan for each lease site for approval by the Commission before a lessee may engage in lease operations. Site-specific plans are intended to include BMPs that provide environmental stewardship while supporting viable commercial aquaculture production.

Lessees would have to identify in their proposed BMP Plans how they will achieve multiple objectives when engaging in aquaculture operations on their lease site:

(a) ***Reduce Litter, Marine Debris and Plastic Pollution***

(1) *Prevention*

- i. Minimize waste generation through:
 1. Material selection.
 2. Avoid or phase out single-use materials (e.g., zip ties) that are easily lost, and replace with more durable materials that are re-usable with a long-life span (e.g., stainless steel clips).
 3. Avoid floats made of materials that are prone to degradation and decomposition by direct sunlight, especially for floats and buoys.

- ii. Design considerations and adaptation to avoid gear loss:
 1. Ensure that gear is secured to prevent loss (drifting or movement off lease area) under all local weather and sea conditions.
 2. Remove loose supplies prior to leaving lease area (tools, water bottles, etc.).
 3. Secure gear left on lease site, including staging areas.

(2) *Maintenance*

- i. Gear/materials must be maintained in a way to minimize failure, displacement or loss.
 1. All staff responsible to look for and remove, repair, or secure any loose culture gear on or near growing leases on a regular basis, and especially in the event of a storm.
- ii. Continually improve gear to minimize degradation and enhance structural integrity under varying sea conditions.
 1. Operators perform gear maintenance assessments on a _____ basis [*NOTE: frequency to be determined based on public input. Options might include "regular", monthly, quarterly, pre- and post-storm, and/or semi-annually*].
 2. Operators participate in community-oriented clean-up efforts, and conduct clean-up efforts of their own.

(3) *Recovery*

- i. Lost gear must be recovered by growers where feasible upon recognition that gear is lost.
 1. Method to track gear inventory [*NOTE: What level of accountability for tracking gear inventory is acceptable?*]
- ii. Gear and vessels must be uniquely identifiable to determine the origin.

(1) Gear: Identify approach to uniquely marking gear [e.g., unique color or marking, labelling, or branding of gear and components].

- i. [*NOTE: Which gear types should require marking - all culture gear (grow-out bags, lines, floats) or excluding grow-out bags?*]

(2) Vessels: Uniquely and clearly identify company and/or lease number(s) on all boats and barges used in operations.

- iii. Within 90 days remove culture systems and gear that are not in current or upcoming productive use.

(b) ***Minimize Impacts to Living Marine Resources and Their Habitats***

(1) Measures to avoid or minimize harm to wildlife, including seabirds, marine mammals, turtles, and protected species:

- i. Avoid disturbance of roosting birds and marine mammal haul-outs
- ii. Avoid and minimize harm to sensitive biogenic habitat eelgrass and kelp within the lease area, including damage from vessel (e.g.,

propeller cuts), air (e.g., drones), gear placement (e.g., shading or direct contact), and foot traffic (i.e., trampling).

(c) **Prevent Spread of Disease or Invasive Species for Biosecurity**

NOTE: DFW has identified that this category is partially addressed in existing regulations; however, there remain gaps that can be addressed by BMPs. DFW recommends adding this to the list of BMP categories, as follows:

- (1) Measures taken to prevent the movement or transfer between watersheds of livestock, wetted gear, and equipment to maintain biosecurity.
- (2) Source seed and broodstock from approved origins.
- (3) Responses to biofouling and employing other measures to prevent the spread of aquatic invasive species

(d) **BMP Commitment, Compliance and Verification**

- (1) *Staff trainings* - Incorporate employee training program with focus on environmental stewardship, litter and marine debris reduction, and good-neighbor practices. *[NOTE: Growers may be able to partner with other local organizations and agencies regarding implementation of a training program.]*
- (2) *Elements to demonstrate compliance* - Describe process to certify compliance with BMP Plan through regular monitoring, reporting, and site-inspection program to ensure operations are in compliance with BMPs. Options:
 - i. Self-monitoring and documentation of compliance activities
[NOTE: consider mode of keeping and maintaining records and availability.]
 - ii. Inspections conducted by certified/approved third-party inspectors *[NOTE: Random, bi-annual, or annual basis.]*
 - iii. Option of demonstrated compliance:
 1. First year [or first and second years] after BMP plan approval: Maintain records, submit report quarterly, and inspection bi-annually for performance and effectiveness.
 2. Subsequent years (when performance and effectiveness is certified by inspector). Reduce frequency of reporting and inspection requirements [frequency?]. All records maintained and available on site.

Additional Considerations

Commission and DFW engagement

- Annual public discussions suggested
- The Commission and DFW will work with growers if concerns or potential non-compliance with BMPs are identified
- The Commission may suspend or terminate a lease if activities are found to not be in compliance with BMPs, and lessee has not remedied the situation within a reasonable, specified time

From: cat@hogislandoysters.com on behalf of Terry Sawyer <terry@hogislandoysters.com>
Sent: Friday, November 2, 2018 1:55 PM
To: Ashcraft, Susan@FGC
Cc: Terry Sawyer; Gary Fleener
Subject: Shellfish Aquaculture BMP Process Input
Attachments: 11-2-18 LTR TO S ASHCRAFT CFG RE BMP PROCESS.pdf; 2018.02.21. EAC & Hog Island Ltr re. MRC Agenda Item 8(B) FINAL with Exh (1) (1).pdf

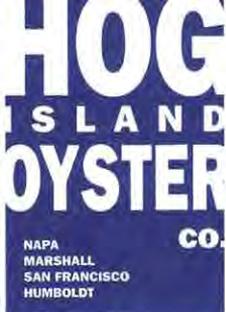
Follow Up Flag: Follow up
Flag Status: Flagged

Good Afternoon, Susan,

Attached please find our comments and concerns regarding the Shellfish Aquaculture BMP process in California.

Thank you for your consideration.

Terry Sawyer
Hog Island Oyster Co.



November 2, 2018

Susan Ashcraft, Marine Advisor
California Fish & Game Commission
1416 Ninth Street, Room 1320
Sacramento CA 95814
Via Email: susan.ashcraft@fgc.ca.gov

Dear Susan,

Thank you for the opportunity to provide final input on the Shellfish Aquaculture BMP process. Below are some comments and concerns for your consideration.

Concerning the language of the BMP document:

We acknowledge and concur with the importance of the BMP categories as presented: 1) reduce marine debris associated with shellfish aquaculture, 2) minimize impacts to the marine/coastal ecosystem, and 3) commit to ongoing improvement and training. These are goals we all share and are inherently aspirational in nature. Accordingly, as you draft your final documents to guide us (the shellfish growers), we urge you to consider working with language that is aspirational rather than prescriptive, and allowing lessees to utilize similar aspirational language in their BMP plans. For example:

Instead of language such as:

"Lost gear must be recovered by growers where feasible upon recognition that gear is lost."

- or -

"Avoid or phase out single-use materials (e.g., zip ties) that are easily lost, and replace with more durable materials that are re-usable with a long-life span (e.g., stainless steel clips)."

We feel it would be more appropriate (and assessable) to use language such as:

"At X Shellfish Co., we strive to reduce litter, marine debris and plastic pollution in our practice of aquaculture by observing the following safeguards:"

- 1. Our aquaculture gear is expensive, and we are highly motivated to care for and keep track of it. We maintain a database with the location of our equipment (and product), and check on gear and product regularly.*
- 2. We continuously strive to minimize the use of single-use materials (e.g., zip ties) that are easily lost, and replace with more durable materials that are re-usable with a long-life span (e.g., stainless steel clips).*
- 3. Continually research and adopt materials that have the least ecological impact possible. This includes assessing durability and potential for re-use and recycling.*

We can show you our database along with our equipment updates and maintenance schedules. These are assessable without being prescriptive. Also, in consideration to the previous work of BMP (see attached) we would like to build on all the good work that's been done.

Concerning additional marking/labeling:

We agree with other lessees that labeling all gear would be an onerous and expensive requirement. Aquaculture gear is already expensive, especially when loaded with our product. We have the greatest incentive to keep careful track of our equipment, and at Hog Island we do this with several layers of inventory and databasing. Occasionally gear will be lost, but we are already striving to safeguard against those losses. As was pointed out at the recent meeting, there may be alternative ways to aid the return of lost gear to the proper farm - via a visual guide on the web or similar. Likewise, we concur with other voices at the meeting concerning marking of boats - a standard is already in place for us all.

Concerning compliance assessment:

We agree with other growers at the meeting that DFW should be inspecting lessees. At Hog Island Oyster Company, we already participate in two Third Party certification programs (Food Alliance and B-Corp - link below) that have significant overlap with the environmental stewardship goals of this MBP initiative. But we agree with others at the meeting that these types of Third Party certifications are costly and may be prohibitive to smaller operations. As Miranda Reis also pointed out, third party auditors tend to work around the pre-established schedules and routines and it is fairly easy to get “prepared” for Third Party visits. Along with other growers at the meeting, we support covering all or part of inspection costs by DFW, and hope that such inspection costs would be prorated in some way to make the process equitable. Some mechanism built into existing fees are a consideration as long as the agency can specify that those monies are targeted for appropriate monitoring and not placed in a ‘general’ fund.

<https://bcorporation.net/directory/hog-island-oyster-co-inc>

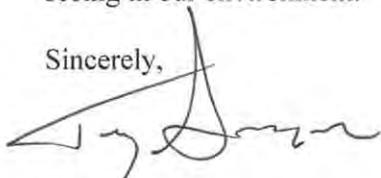
Concerning the importance of not overlooking the good already taking place:

The shellfish community has a long and demonstrable history of self examination and of striving to be good stewards of the community and our local ecosystem. For the most part as part of maintaining a successful business, we already have BMPs in place and are constantly reviewing and re-evaluating. We regularly subject the company to third party scrutiny, and we have invested substantial resources to environmental research and monitoring projects. For example, we are currently hosting research projects with UC and CSU scientists to address ocean acidification and eelgrass/aquaculture interactions. These collaborations go largely unnoticed in the environmental and regulatory community. We engage and invest in these partnerships willingly, because our business depends on a healthy marine ecosystem and because we care about the places we work and call home. We believe shellfish aquaculture, done well, is a net positive to California’s coastal ecosystems, and we are willing to both lead and support our fellow growers as much as feasible.

As the DFW and F&G Commission move to finalize BMPs for shellfish aquaculture, we once again urge you to embrace a non-prescriptive approach. We believe Hog Island Oyster Company, Inc. is already a good example of what can be accomplished with aspirational goals and thorough operational processes to back them up.

If BMPs can strengthen the sustainability and stewardship of shellfish aquaculture statewide without creating new and difficult to enforce regulations, we are in full support. But it would be a shame (and counterproductive) if this BMP process has the unintended consequence of chilling the voluntary movement in our industry toward better stewardship in favor of checking boxes on a new list of required BMPs. We discussed this being a process and look forward to further collaboration as new techniques in aquaculture and materials develop as we continue to adapt to the changes we are all seeing in our environment.

Sincerely,



Terry Sawyer
Vice President



California Fish and Game Commission
Attention: Marine Resources Committee
1416 Ninth Street, Room 1320
Sacramento, CA 95814
Via electronic mail: fgc@fgc.ca.gov

February 21, 2018

Re: EAC & Hog Island Comments re. BMPs (Marine Resources Committee Agenda Item #8(B))

Dear Commissioners:

The Environmental Action Committee of West Marin (EAC) and Hog Island Oyster Company (Hog Island) (collectively “we”) submit these joint comments and proposed aquaculture Best Management Practices (BMPs) (*Exhibit 1*) for your consideration prior to the March 6, 2018 Marine Resources Committee meeting. EAC is grass roots environmental non-profit established in 1971, and Hog Island is a shellfish company established in 1983. We both want to ensure that Tomales Bay is clean, healthy, and free of marine debris.

Our comments focus on marine debris management and aquaculture BMPs for Tomales Bay. Since 2015, EAC has advocated to the Fish and Game Commission (Commission) for the formalization of aquaculture BMPs. Hog Island is also supportive of BMP formalization, and already engages in many of the BMP practices listed in *Exhibit 1* voluntarily.

As discussed in EAC’s July 2017 letters to the Commission, EAC is aware that multiple drafts of BMPs have been presented to the Commission, many of which are in the public record. Since July 2017, EAC and Hog Island have developed a revised proposed BMP list, attached hereto as *Exhibit 1*.

We submit this joint letter in hopes of expediting the delayed BMP rulemaking process. We are hopeful that the involvement of the Bren School and their research team may also help move this process along, as well as helping with the uniformity of culture terms. We both agree that bi-annual site inspections of each aquaculture lease by the Department of Fish and Wildlife (Department) are a necessary component of a successful BMP program.

As discussed at the July 2017 BMP stakeholder meeting in Marshall, the best way to incorporate BMPs into each lessee’s operations has yet to be determined. Proposed ideas include the



Exhibit 1: PROPOSED BEST MANAGEMENT PRACTICES REGARDING MARINE DEBRIS FOR TOMALES BAY SHELLFISH GROWERS

Once adopted, the below list of proposed best management practices (BMPs) shall be mandatory and legally binding for all aquaculture lessees. The Fish and Wildlife Department and/or the Fish and Game Commission shall include enforcement provisions for instances of lessee non-compliance with the BMPs. Third party inspections shall take place on all lease sites on an annual basis (at a minimum) to ensure compliance with the following BMPs and to suggest potential improvements. The Department of Fish and Wildlife is an appropriate entity to conduct these inspections. Ideally, inspections shall occur at least bi-annually before and after the winter storm season (i.e. at the end of summer and in early spring). The finalized and adopted BMPs shall be reviewed and revised on a regular basis (at least every ten years) through a transparent public process. As new technologies become available, BMP revisions may be needed in the aim for continuous improvement.

Training & Education:

1. Growers¹ shall implement a written training program and processes for their staff², which shall include regular staff education on reducing environmental impacts and marine debris reduction practices, with the goal of marine debris elimination. Growers may be able to partner with other local organizations and agencies regarding implementation of this training program.
2. All staff shall be trained to look for and remove, repair, or secure any loose culture gear on or near growing leases on a regular basis.

Recover and Reduce Marine Debris (Operational Discipline & Oversight):

3. Leases and surrounding areas shall be patrolled to recover lost and broken gear on a monthly³ basis. Where possible, before high wind and storm events, gear shall be properly secured. Following high wind and storm events, patrols shall occur as quickly as reasonably possible or within two weeks.

¹ The term "Growers" is defined to include aquaculture farmers, growers, and their staff.

² The term "Staff" is defined to include all contractors, employees, volunteers, workers, personnel, owners, and operators of each aquaculture lease(s).

³ For intertidal leases, patrols shall occur at both high and low tides to ensure gear buried in the mud is promptly collected.

4. Growers shall organize or participate in quarterly bay wide clean ups that include walking the bay shoreline and wetlands, in order to gain access to hard to reach areas. Where possible, growers shall aim to work with other coastal clean-up people and/or local organizations to coordinate clean-up efforts. The volume of all debris collected, including non-shellfish related debris, shall be recorded and documented, with the goal being to continually reduce that volume.
5. When tossing out loose bags or bundles of lightweight seed bags, growers shall ensure that all bags or bundles are either heavy enough to not drift away⁴ or are secured or anchored to prevent drifting or movement. All loose bags that might drift shall be secured as soon as possible, but at a minimum within two weeks of being tossed out.
6. Growers shall avoid leaving tools, loose gear, and construction materials on leases and surrounding areas for long periods of time (i.e. longer than one week).⁵ All materials staged on leases shall be kept neat, and secured, to prevent movement and/or burial.
7. If a culture method is being discontinued, all materials (including but not limited to culture structures and other items) shall be promptly removed (within one year).
8. Staff and contractors shall not litter. All debris and trash (including non-shellfish items) shall be properly disposed of once ashore.

BMP Compliance, Oversight & Robust Design:

9. Growers shall implement a monthly self-monitoring and inspection program to certify BMP compliance. The program should include monitoring and recording of marine debris collected (including date, time, and location where possible), and a record of monthly lease patrols and staff education training. The goal of this self-monitoring program is to increase the percentage of recoverability and decrease the volume of lost gear and debris.
10. Growers shall strive to continually improve gear, so that breakage and scattering of debris are minimized. The quest being for zero lost gear.
11. Growers shall strive to avoid the use of single-use materials.⁶ Growers shall minimize waste generation by purchasing materials with a long-life span, preferably re-usable, but at least recyclable.⁷
12. Growers shall strive to phase out the use of plastic wrapped blue foam floats and/or floats that are easily degraded by ultraviolet rays or pecked by birds in search of food.
13. Growers shall secure all buoys and/or floats and floating gear properly in order to minimize and ideally eliminate lost gear.
14. A review of lease escrow accounts shall occur on a regular basis (at least annually) to ensure that adequate funds are available to clean up abandoned leases. Growers shall retain the right to perform the clean up of any abandoned leases themselves, so as to not

⁴ Growers shall securely tie large groups of non-floating bags together when deploying bags for future securing to anchor lines to ensure the bags do not drift.

⁵ Ideally, tools and other equipment should be removed daily after working on lease areas, including: fencepost drivers, gloves, water bottles, PVC pipes, wires, and ropes.

⁶ i.e. copper wires and zip ties

⁷ i.e. stainless-steel halibut clips or other re-usable and recyclable materials

EAC & Hog Island Proposed Aquaculture BMPs
Exhibit 1 to February 21, 2018 MRC Comments

decrease the balance in the escrow account. Grower led clean-ups shall be subject to third party inspections.

15. All floating gear shall be uniquely and clearly identified with the unique company name and phone number.
16. Annual proof of use forms shall be completed and timely filed with the Department of Fish and Wildlife. Forms shall be made publicly available.

From: Ashley Eagle-Gibbs <ashley@eacmarin.org>

Sent: Friday, November 2, 2018 02:39 PM

To: FGC

Cc: Morgan Patton; Ashcraft, Susan@FGC; Lovell, Randy@Wildlife; Hart, Leslie@FGC

Subject: Marine Resources Committee Agenda Item 6 (Shellfish aquaculture best management practices (BMPs))

Dear Commissioners,

Please find attached EAC's comments regarding MRC Item Item 6 (Shellfish aquaculture best management practices (BMPs)) and the document: *Proposed Requirements for Shellfish Aquaculture Lease Best Management Practices (BMP) Plans Regulation*.

Sincerely,
Ashley Eagle-Gibbs

Ashley Eagle-Gibbs, Esq. | Conservation Director
Environmental Action Committee of West Marin (EAC)
PO Box 609 | 65 Third Street, Suite #14
Point Reyes Station, CA | 94956
(415) 663-9312
ashley@eacmarin.org

Keeping West Marin Wild Since 1971

* Please note: I work part-time Tuesday - Thursday typically, and I will respond to messages accordingly.

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November 2, 2018

California Fish and Game Commission
1416 Ninth Street, Room 1320
Sacramento, CA 95814
Via Electronic Mail to: fgc@fgc.ca.gov

Re: Marine Resources Committee Agenda Item 6 (Shellfish aquaculture best management practices (BMPs))

Dear Commissioners,

The Environmental Action Committee of West Marin (EAC) has been working to protect and sustain the unique lands, waters, and biodiversity of West Marin since 1971. We are particularly focused on Tomales Bay, a significant international coastal estuary that supports substantial bird, fish, and marine mammal populations. In the face of more severe storms, sea level rise, and ocean acidification, the important ecological and economically viable Tomales Bay must be afforded the highest level of protection and oversight.

EAC has advocated to the Fish and Game Commission (Commission) for shellfish aquaculture best management practices (BMPs) since 2015 by providing testimony at hearings, participating in stakeholder meetings, and submitting written comments including suggested BMPs. We support the Commission's action to undertake a formal BMP rulemaking process, which is also supported by the Ocean Protection Council's 2018 California Ocean Litter Prevention Strategy.

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November 2, 2018
EAC Comments re. MRC Agenda Item 6 (BMPs)

In this letter, we include a request for extension of comments, our overall support for the document *Proposed Requirements for Shellfish Aquaculture Lease Best Management Practices (BMP) Plans Regulation* (October 24th Proposed BMPs), suggested revisions to the October 24th Proposed BMPs, and additional concerns not addressed in the October 24th Proposed BMPs.

Request for an Extension for Submission of Comments

As an initial comment, we were disappointed that the October 24th Proposed BMPs were distributed after business hours the day before the October 25th stakeholder meeting (October 25th meeting). Due to the late circulation of this document, the public had very limited time to review the document prior to the meeting and to participate in informed decision making. We worked diligently to submit these comments in advance of the comment deadline. However, we respectfully request an extension on the only seven-day public comment period for the general public including our constituents to have adequate time to voice their comments and concerns on this important issue.

Support for the October 24th Proposed BMPs

Overall, the October 24th Proposed BMPs provide a good synthesis of the BMPs and environmental concerns, which have been presented in the past. We are supportive of most of the draft requirements for site BMP plans as outlined in the October 24th Proposed BMPs. Below we present a few suggested revisions and additions to the proposed language.

Suggested Revisions to the October 24th Proposed BMPs

We have a few suggested revisions regarding the October 24th Proposed BMPs, which I have referenced under each section where applicable.

(a) Reduce Litter, Marine Debris and Plastic Pollution

The section on reduction of litter, marine debris, and plastic pollution is critical. Many of the BMPs EAC has advocated for include a focus on marine debris reduction. At the October 25th meeting, Susan Ashcraft, Commission Marine Advisor, talked about the growing problem of microplastics:

There is a heightened awareness globally and in California of the problem of microplastics of broken down...for floating gear anything that is floating is more likely to break down over time, and we're seeing some measurable consequences, a lot of measurable consequences from that.¹

¹ Quotes and references to the October 25th meeting are based on audio files provided by Richard James, who attended the meeting, as well as from my meeting notes. I understand that the Commission and/or Department of Fish and Wildlife (Department) also recorded the meeting, but that audio recording is not yet available to the public.

In addition to the problems of lost gear from routine operations, the current escrow accounts are woefully outdated, underfunded, and in need of revision, leaving Tomales Bay at risk of legacy debris issues. While not directly related to BMPs, we recommend that the process of updating the escrow system continues with third party appraisals of cleanup costs.

Some blanks were included in the October 24th Proposed BMPs document, and we have included suggested language where applicable.

Regarding maintenance of gear in (a)2.ii.1., as supported by Miranda Ries, Director of Regulatory Affairs with Pacific Seafoods, at the October 25th meeting, we also recommend “Operators perform gear maintenance assessments on a quarterly basis and after any major storm event.” Additional clarity could be added regarding what is meant by “gear assessments.”

Regarding recovery of gear and the method to track that recovery in (a)3.i., we recommend including date, type of gear collected, and general location of gear collected with the goal being to continually reduce the volume of lost gear. Individual growers could use different methods like forms or photographs to track this data. The presentation by Daniel of Hog Island Oyster Company at the October 25th meeting and the handout entitled *Tomales Bay Growers Marine Debris Collection* is a useful example of tracking recovered gear by year, as well as the type of gear collected. Additional detail could be included in documents like this one regarding the approximate location of the gear collected and the entity responsible for the lost gear where the gear is marked. It would also be helpful to track the number of clean up events per year.

Regarding gear marking in (a)3.ii.(1)i., we recommend that the following types of gear be marked at a minimum: all floating gear, single grow out bags, loose bags, bottom bags, bags on long lines, SEAPA oyster baskets, and any similar type(s) of gear used in future cultivation techniques not currently authorized². We note that where possible the method of gear marking should avoid the addition of more plastic which is prone to degrade or come dislodged. Where economically feasible and where it will reduce marine debris, we recommend marking of all gear. There are extensive examples of gear marking including the commercial fishing industry, Florida’s aquaculture industry³, Washington’s aquaculture industry⁴, and through the Coastal Commission’s Coastal Development Permit (CDP) conditions including Coast Seafoods and Marin Oyster Company Inc.’s permits. Marking allows anyone to contact the grower if the gear

² Note these terms may need revision, but our goal in suggesting these types of gear is to target the types of gear, which are most likely to escape, especially with wind and wave conditions.

³ See Florida Division of Aquaculture, *Shellfish Aquaculture Gear Management, Technical Bulletin #10*, October 2018, page 2: “The leaseholder’s identification information shall be attached to all floating or off-bottom culturing structures.”

⁴ See U.S. Army Corps of Engineers, Seattle District, *Programmatic Biological Assessment Shellfish Activities in Washington State Inland Marine Waters U.S. Army Corps of Engineers Regulatory Program*, October 2015, page 51, number 18, available at: https://www.nws.usace.army.mil/Portals/27/docs/regulatory/160907/Shellfish%20PBA_%20Oct30_2015_final.pdf: “All tubes, mesh bags and area nets shall be clearly, indelibly, and permanently marked to identify the permittee name and contact information (e.g., telephone number, email address, mailing address). On the nets, identification markers shall be placed with a minimum of one identification marker for each 50 feet of net.”

gets away and provides for an additional layer of accountability to improve environmental stewardship.

(d) BMP Commitment, Compliance and Verification

Regarding inspections by third parties (d).2.ii., we recommend inspections at least twice per year. One of the inspections should be following the storm season. It would be preferable that these inspections not be scheduled. Unscheduled inspections are preferable, because they reflect regular operations rather than extra tidy operations. Miranda Ries, Director of Regulatory Affairs with Pacific Seafoods, pointed out at the October 25th meeting, where third-party inspections are scheduled, the grower has time to clean up before the inspection takes place making these inspections less accurate and valuable. Another option, which we support, in lieu of or in addition to third-party inspections, would be inspections by the regulatory agencies including the Commission, the Department, and/or the Coastal Commission.

The Commission and Department have stated there is a lack of resources, staffing, and funding for even annual Commission or Department inspections⁵. EAC supports local grower involvement to improve regulatory oversight and is supportive of suggestions raised at the October 25th meeting that the growers could assist with raising the funds (i.e. through raised fees per Randy Lovell, Department State Aquaculture Coordinator) needed to ensure regulatory compliance and environmental stewardship. This suggestion is supported by some of the growers who spoke at the October 25th meeting stating that there is a necessary relationship between the landlord (Commission) and tenant (lease holder) to ensure that public trust waters are being managed in a responsible manner.

Grower and regulatory collaboration could improve trust in the management of public waters and assist with finding funding to ensure lease compliance. In addition, the overall lack of regulatory presence on Tomales Bay needs to be improved. It is EAC's understanding that regulators do not have regular access to a boat for inspections. Without access to a boat to monitor leases, there is no way to validate site conditions or ensure that BMP plans are being implemented.

Additional Concerns Not Addressed in the October 24th Proposed BMPs

The October 24th Proposed BMP requirements did not address some concerns with loose bags and shells or other debris that should be considered, which I have listed below:

Request addition to (a) i.i. that references securing gear: When tossing out loose bags or bundles of lightweight seed bags, growers shall ensure all bags or bundles are either heavy enough to not drift away or are secured or anchored to prevent drifting or movement. All loose bags that might drift shall be secured as soon as possible, but at a minimum within two weeks of being tossed out.

⁵ The Commission and Department also lack funding for legacy clean up expenses (i.e. underfunded escrow accounts), as well as for enforcement. Adequate funding is needed for oversight and enforcement, as well as legacy clean up where and when it is needed.

November 2, 2018
EAC Comments re. MRC Agenda Item 6 (BMPs)

Request addition to (b)(1): Growers shall not dump shells, lumber, bags or other debris on the bay floor.

Any debris placed on the bay floor causes harm to the benthic environment and should be avoided.

Additions Regarding the BMP Plan Review Process

At the October 25th meeting, Susan Ashcraft provided clarification on the review process for the BMP plans. We are supportive of the following, which should be included in the next written iteration of BMPs for the public's review and feedback:

- BMP plans should be reviewable by the public through the Commission process.
- BMP plans should be reviewed a least every five years.

We are also supportive of the Coastal Commission's approach to improving management practices through conditions in CDPs.

Conclusion

We thank you for your continued efforts on this critical issue that will help to ensure lasting protection for our public waters and wildlife habitats. In closing, EAC appreciates the opportunity to comment and continue our participation in a transparent public process with future adequate notice periods around this rulemaking to ensure public participation for protection of our public trust resources. It is our understanding that the Commission will continue to work collaboratively with all interested stakeholders to develop model BMP regulations so that Tomales Bay and California can lead in environmentally sustainable aquaculture.

Sincerely,



Morgan Patton
Executive Director



Ashley Eagle-Gibbs, Esq.
Conservation Director

cc: Susan Ashcraft, California Fish & Game Commission Marine Advisor
Randy Lovell, California Department of Fish & Wildlife State Aquaculture Coordinator

2 November, 2018

California Fish & Game Commission
1416 Ninth Street, Room 1320
Sacramento, CA 95814
Via electronic mail to this address: fgc@fgc.ca.gov

MRC Agenda item 6 - Comments from Richard James on the Draft BMP document [BMP's] presented on 25 October, 2018 in Santa Rosa.

Thank you for this opportunity to present my comments on this important topic.

First, a comment on process.

Please consider extending the comment period in order to ensure the public can contribute.

That it took just over three and a half years to get here and then to be provided with a copy of the draft at 5:30 the night before the meeting is disappointing.

Each Commission meeting opens with the following language:

*"...Our goal is the preservation of our heritage and conservation of natural resources through **informed decision making** and you all are an important part of that informed decision making. ..."*

How is the Commission to achieve informed decision making when:

The public is not given adequate time to participate?

Meeting agendas are often vague and provided shortly before the actual meeting?

Inadequate time is provided during which to formulate and submit comments?

Now for my comments on the draft BMP's

In general, I am pleased with the document provided. There are some items missing which I will get into below. The document is a big step forward for California Aquaculture and I appreciate the work put into it by the Commission, the Department and especially the Growers.

I am also pleased that the Commission takes seriously the problem of plastic pollution in the sea, especially micro-plastic pollution. With over 9 million metric tons of plastic entering the sea each year (and growing), we all have to do our best to reverse this troubling trend.

Section a – Reduce litter, marine debris and plastic pollution

Material selection is critical in ensuring gear is durable and able to be securely fixed in place. It is understood that this is a dynamic process, as growers continue to search for a better solution. It is also understood that growers need a reasonable, *but not infinite*, amount of time to effect changes across their large lease areas.

Avoiding floats and other devices that prone to degradation is also very important.

Here is an example of a material that outlived its useful life. More frequent gear inspections and better choice of material will keep this type of float from degrading into thousands of pieces of micro-plastic.



2015.02.01 - lease 430-04 - dergaded blue foam float

And here is what that float once looked like, the degradation in progress.



Ensure that gear is secured to avoid gear loss

It is very important that bags deployed during high tide for later anchoring at low tide are secured so they do not drift away.

Below is an example of what happens when bags are not secured.





2017.11.09 - near lease 430-15, plastic sheets unsecured

Large sheets of plastic rolled up and left onshore, off-lease.



A large sheet of previously rolled up plastic now loose onshore, off-lease.

Section 2 – Maintenance

This section looks good to me.

Checking all gear before and after storm and high-wind events is a must. Re-anchor gear that got away, repair or replace gear too damaged to stay put. Visiting all gear with this in mind quarterly seems prudent.

Item (2) ii (2) about participating in community-oriented efforts seems more appropriate for section 3 – Recovery

Section 3 – Recovery

Having a bay-wide list of what is recovered by growers is a good idea. Growers may want to agree to the medium and format so that they all use the same medium and format to facilitate sharing and merging of individual efforts into one document to be made available to the Commission and the public.

Documenting by photo those items that were recovered, arranged somewhat to show type and number would be useful too.

Below is an example of a large collection of stanway rack lumber collected and stacked for the grower to recover (which they did – thank you). Leaving large amounts of lumber (treated or not) to litter the shore impacts how the wrack develops, affecting water flow and further changes Tomales Bay. Lumber should be collected the same as other aquaculture debris.



Marking of gear is recommended to provide for accountability, allow those who find gear to easily return it, reduce loss of product and gear for growers. It is important that the near (and not so near) community members are able to discern whose gear is getting loose so that this information can be shared with the grower experiencing gear loss.

Here are examples of various methods used to mark gear. With some thought, the industry will surely be able to improve on this just like they improve on container designs.

It has been suggested that putting a plastic tag on a bag simply adds to the debris in the sea. As grower's efforts improve, and gear losses plummet, neither bags, nor tiny tags will get lost.



2018.05.04 - Hood Canal WA state grower marked grow-out bag

Penn Cove Shellfish LLC. molded their name into these discs used for mussel culture I've found and returned hundreds in Quilcine Bay, so easy when gear is tagged.



2017.10.16 - Quilcine Bay WA mussel disc with company name molded in



2017.12.10 - lease 430-15 bag float with company name molded in

Below we see a commercial crab vessel in Bodega Bay. Note the large number on the side. Why treat commercial aquaculturists any different than other commercial fishers?

Allowing easy identification of commercial vessels by the public fosters trust and provides for accountability.



Removing unused gear within 90 days is a great idea. Numerous instances of unused contemporary (and legacy) gear on leases 430-05 and 430-15 can easily be provided by the author if desired.

Section b – Minimize impacts to living marine resources and their habitats.

Adding the following items to this section would help greatly to achieve this goal.

Prohibit the dumping of shells onto the bay floor for any reason.

Prohibit placing lumber or plastic bags on the bay floor for any reason.

Minimizing the disturbance and coverage of the bay floor is to be attempted.

Examples of shells being dumped on the bay floor are shown below:





Below is an image showing the stanway racks on 430-11 with bags and lumber paving the bay floor. If an area does not facilitate culture without significant modification, perhaps another area should be chosen. Yellow lines adjacent to debris.



Marking a "lane" with buoys to show boats the way to various leases would contain the damage to eel grass by prop cuts. Images below show prop cuts in eel grass.



2016.05.27 - lease 430-04 and lease 430-02 area at Walker Creek leases



Section a – Commitment, compliance and verification

Unannounced inspections 2x per year of all lease areas are recommended. One inspection should be in the midst of storm season, between heavy weather to witness firsthand how gear is affected by the weather.

If growers know when to expect an inspection, they can be sure to get things tidy beforehand. **These are public-trust tidelands, not private property.**

Having an inspector from either the Commission or Department and a second inspector from an outside agency working together as a team would provide continuity from the agency person(s) and objectivity from the third party person(s).

Additional issues not addressed in the BMP document from the 25 October meeting.

Another area needing immediate attention is the woefully inadequate cleanup escrow fund. Currently growers themselves estimate what it would take to clean up a lease and then set aside in escrow that amount.

- current estimates are mostly grossly under the true cost
- one grower working his lease for over twenty years has set zero \$ aside
- another grower has his funds administered by his own accountant
- what is needed is an objective estimate, with money held by a third party

Below you can see the current funds in place:

Escrow Accounts for State Water Bottom Leases						
Tenant	Lease	Amount	Date Deposited	Status of Funds	2014 Clean-up Estimate	2015 Clean-up Estimate
Marin Oyster Company	M-430-02	\$1,600.00	01/04/13	Active	\$1,600	\$1,600
Charles Friend Oyster Company	M-430-04	\$449.50	?	Unknown	\$150,000	\$20,000
Tomales Bay Oyster Company	M-430-05	\$100,000.00	?	Unknown	\$150,000	\$100,000
Cove Mussel Company	M-430-06	\$0.00		Needs to be established	\$5,500	\$5,500
Hog Island Oyster Company	M-430-10	\$97.47	08/30/12	Active	\$12,500	
Hog Island Oyster Company	M-430-11	\$97.47	08/30/12	Active	\$12,500	
Hog Island Oyster Company	M-430-12	\$500.00	10/29/12	Active	\$12,500	
Point Reyes Oyster Company	M-430-13	\$363.00	05/18/94	Active	\$100	\$500
Point Reyes Oyster Company	M-430-14	\$300.00	Need deposit slip to verify	Active	\$300	\$500
Hog Island Oyster Company	M-430-15	\$930.00		Active	\$25,000	
Point Reyes Oyster Company	M-430-17	\$899.00	Deposited \$268.00 on 5/18/94, balance due	Active	\$7,500	\$7,500
Marin Oyster Company	M-430-19	\$1,019.00	05/30/13	Active	\$1,200	\$1,200
	total	\$106,255.44			\$378,700.00	\$136,800.00

The California Coastal Commission has been ameliorating many of these shortcomings with updates to CDP's and I fully support these actions.

A big thank you to the Commission and Department as well as the growers for your time and efforts in working towards California shellfish growers becoming the paragon aquaculture practitioners. With everyone's help, authentic stewardship will be yet another reason the world looks to California as a leader in sustainable shellfish production while preserving and protecting the environment.

With gratitude,

Richard James

coastodian

Best Management Practices for Tomales Bay Aquaculture

Cynthia Harland

Thu 10/18/2018 06:37 AM

To:FGC <FGC@fgc.ca.gov>;

Dear Ms. Termini,

As a resident of Marshall, I am strongly in support of the following Best Management Practices being adopted by the local oyster growers.

1. Growers shall uniquely and clearly identify all of their gear with company name and phone number. Possible means of uniquely marking gear include: unique colors of bags, wires, tags, PVC pipes, rope, and "branding info into gear."
2. Growers shall train all employees in concepts of Leave No Trace, see <http://LNT.org>, or similar training about environmental stewardship.
3. Growers shall continually improve gear and methods in a quest to lose less gear.
4. Growers shall replace single use items (i.e. zip-ties, copper wires) with more durable items such as stainless halibut clips.
5. Growers shall NOT use floats that are easily degraded by sunlight or pecked by birds in search of food.
6. Growers shall securely tie large groups of non-floating bags together when deploying bags for future securing to anchor lines to ensure they do not drift.
7. Growers shall remove all tools and materials each day after working on lease areas, including: fencepost drivers, gloves, water bottles, PVC pipes, wires, and ropes. Work barges shall be secured to ensure items are not blown into the bay.
8. Growers shall NOT dump shells, lumber, bags or other debris on the bay floor to walk upon or for any reason.
9. Growers shall promptly (within 90 days) remove culture structures and other items comprising a method that did not work as desired or is no longer used.
10. Growers shall patrol lease areas and the shores of Tomales Bay on a monthly basis, twice monthly during windy or heavy surf times. Patrols must occur at both high and low tides to ensure gear buried in the mud is promptly collected.
11. Growers shall uniquely and clearly identify all of their boats and barges. Boats should be clearly identifiable with binoculars from a distance of 1 mile. Unique color, large letter and/or number or combinations of these may work.

Sincerely,
Cynthia Harland

**Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process**

October 2018

“The goal of the Spiny Lobster FMP is to formalize a management strategy for spiny lobster that will be responsive to environmental and socioeconomic changes and establish the basis for informed decision-making to achieve a sustainable fishery considering the entire ecosystem.”

California Department of Fish and Wildlife

Stakeholder Engagement in Fishery Management Plan Development: Lessons Learned from the Lobster Advisory Committee Process

Statement of Purpose

This report and the associated “Lobster Advisory Committee Stakeholder Engagement Survey” were created in order to elucidate lessons learned during the stakeholder engagement process to develop the Spiny Lobster Fishery Management Plan (FMP), with the goal of informing future FMP stakeholder engagement processes, as the Updated Marine Life Management Act Master Plan is implemented.

The survey was conducted and analyzed by a researcher employed by Heal the Bay, a non-profit organization that was represented as a stakeholder in the Lobster Advisory Committee (LAC) process. The researcher was not involved in the LAC process while the LAC was active, rather she was tasked with interviewing LAC members about their experiences after the process had concluded.

The Lessons presented in this report are based on LAC members’ responses to survey questions about their personal experiences as stakeholders in this process.

Acknowledgements

The author would like to extend deep thanks to the LAC members who participated in the survey, who were very generous with their time, each spending between 45 minutes to 2 hours sharing the details of their experiences on the LAC and their insights about this process. Thanks to all the stakeholders who participated in Spiny Lobster FMP development process.

Thanks also to the California Department of Fish and Wildlife staff, LAC facilitation staff, and Fish and Game Commissioners and staff for their valuable contributions.

Funding for this work was provided by the David and Lucile Packard Foundation.

About the Author

Jocelyn Enevoldsen analyzes marine policy for Heal the Bay. She holds a Master’s Degree in Coastal Marine Resource Management from the Bren School of Environmental Science & Management at University of California, Santa Barbara and a Bachelor of Science in Aquatic Biology, also from UCSB.

Stakeholder Engagement in Fishery Management Plan Development: Lessons Learned from the Lobster Advisory Committee Process

Introduction

This report provides an overview of lessons learned from the Lobster Advisory Committee (LAC), a stakeholder group convened to provide recommendations, advice, and feedback related to the development of the Spiny Lobster Fishery Management Plan (Spiny Lobster FMP) to the California Fish and Game Commission (FGC) and the California Department of Fish and Wildlife (CDFW). The LAC was active from June 2012 to September 2013, and nine LAC meetings were held during this time. The Spiny Lobster FMP was adopted by the FGC in April 2016.

Lessons learned during the LAC stakeholder engagement process will be helpful guidance to inform future FMP development stakeholder engagement processes, as the 2018 Marine Life Management Act (MLMA) Master Plan is implemented, and CDFW embarks on FMP development for fisheries on the MLMA Master Plan *Priority Fisheries List*.

Methodology

The Lessons presented in this report were informed by a survey (see Appendix 1) of LAC members, whose responses to 38 questions about their LAC experience were analyzed and compiled into 9 “Lessons Learned.” Questions in the survey were developed based on concepts from the LAC Charter Guiding Principles,¹ from the “Hopes, Concerns, and Vision” exercise summary² at the first LAC meeting, from the draft 2018 MLMA Master Plan,³ and from the California State Fisheries Stakeholder Engagement User Manual.⁴

All 18 members of the LAC were contacted and invited to participate in the survey, including four commercial fishing members, four recreational fishing members, three marine science members, two environmental NGO members, two federal agency members, and three non-consumptive recreational members. Due to health concerns and busy schedules, two of the 18 LAC members were unable to participate.

Each of the 16 survey participants were asked the same survey questions, and their responses were transcribed and assigned a random identification number. These transcripts were uploaded into Dedoose,⁵ a qualitative data analysis software tool, and each response was coded and tagged by question and response.

Often, participants would expand their responses beyond a simple “yes” or “no” answer; these responses were captured as excerpts, which were tagged in association with the simple “yes” or “no” code. If a participant answered with a noncommittal response, somewhere in between “yes” or “no,” this response was assigned to an “other” category. Similarly, if participants declined to answer, their response was coded as “other.” “Other” results were analyzed separately from “yes” and “no” responses.

The analysis of participant responses included an assessment comparing the number of affirmative versus dissenting responses to a given question, in addition to considerations of emergent themes from response excerpts. Patterns in the response data are discussed in a written analysis following each Lesson Learned.

Results and Analysis

Table 1 provides a summary of Lessons Learned from the LAC process. Following this summary, each Lesson is examined individually through a presentation of the response data that support the Lesson, emergent themes from participant response excerpts, and expanded thoughts meant to inform future FMP stakeholder engagement efforts. A presentation of response data from all survey questions is included in Appendix 2.

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

Summary
Lessons Learned from the Lobster Advisory Committee Process

- *The Advisory Committee model is an effective strategy for enabling understanding amongst stakeholders with different views.*
- *The Advisory Committee model allowed a majority of stakeholders to feel that their voices were heard and that at least some of their input was incorporated into the final FMP.*
- *Consensus based decision-making is a worthy goal, though in practice it kept group recommendations with majority support from being shared with the Fish and Game Commission.*
- *LAC facilitation efforts were effective at: including diverse stakeholders in the process; sharing information at meetings and between meetings; and maintaining an environment of respect at LAC meetings.*
- *Future FMP facilitation efforts could be improved by: clearly defining the scope of the input CDFW is seeking from stakeholders at the beginning of the process; and streamlining stakeholder involvement in FMP development.*
- *CDFW Biologist/Scientist staff participation and involvement is valuable to FMP process outcomes.*
- *CDFW Warden involvement in FMP development is valuable and appreciated by stakeholders.*
- *Stakeholder confidence in the FMP would increase if CDFW collected more Essential Fishery Information (EFI) to ensure that harvest strategies reflect current lobster populations and ocean conditions.*
- *Expedient FMP development is key to achieving process outcomes with high stakeholder approval.*

Table 1. Summary of Lessons Learned from the Lobster Advisory Committee Process

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

Lesson 1: *The Advisory Committee model is an effective strategy for enabling understanding amongst stakeholders with different views.*

Supporting Results

Nearly all participants (15/16) said that the LAC process allowed them to understand other stakeholders' views that were different from their own views (Q1c). The single dissenter said that they already knew all stakeholder views before the Advisory Committee process began.



Q1c: Did the Lobster Advisory Committee process allow you to understand the views of stakeholders that were different from your own?

Emergent Themes and Expanded Thoughts

In a subsequent question, “Did you feel there was a cultivated environment of respect between LAC members?” several participants specifically emphasized that this cultivation of respect happened because LAC members better understood fellow members’ views due to the Advisory Committee process.

Common understanding is the basis for successful relationship building and collaborative management efforts. The Advisory Committee model helped to foster the relationship building process, suggesting that this model will be useful in future FMP development efforts. This finding is in alignment with one of the key stakeholder engagement principles from the California State Fisheries Stakeholder Engagement User Manual (CSFSEUM), *Build Relationships*. “Relationships and agency visibility contribute to public acceptance and allow managers to more quickly and nimbly respond to pressing stakeholder concerns—creating social resilience around management decision-making.”⁴

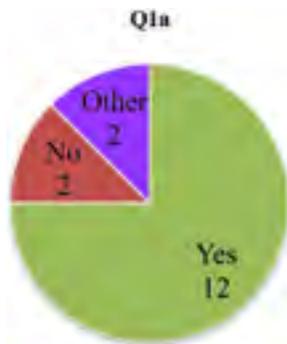
Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

Lesson 2: *The Advisory Committee model allowed the majority of stakeholders to feel that their voices were heard and that at least some of their input was incorporated into the FMP.*

Supporting Results

The majority of participants (13/16) said that they had adequate opportunities to make their voices heard and represent the concerns/viewpoints of their constituents (Q1b).

The majority of participants (12/16) said they felt that at least some of their input was incorporated into the final Spiny Lobster FMP (Q1a).



Q1a: Do you feel that your input was incorporated into the final Spiny Lobster FMP?



Q1b: Did you have adequate opportunities to make your voice heard/ represent the concerns and viewpoints of your constituents?

Emergent Themes and Expanded Thoughts

When asked more specifically, “Do you feel that stakeholders had equal opportunities to express their views?” (Q2h), fewer participants responded affirmatively (11/16). Dissenters cited concerns that the loudest person in the room often got the most speaking time, and that moderators could have been more persistent in ensuring equal speaking time for all stakeholders.

Providing opportunities for stakeholder input is critical for buy-in to management decisions, and the Department and facilitators made an admirable effort toward this goal.

As is discussed in Lesson 5, clearly defining the scope of input the Department is seeking from stakeholders at the beginning of engagement processes will help to create focus around desired stakeholder input; this focus will likely result in greater stakeholder approval of engagement processes.

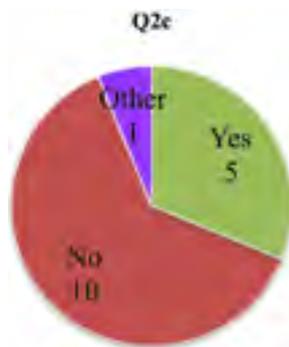
Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

Lesson 3: Consensus based decision-making is a worthy goal, though in practice it kept group recommendations with majority support from being shared with the Fish and Game Commission.

Supporting Results

Less than one third of participants (5/16) answered yes when asked, “Did you find the consensus decision-making process to be helpful in building support for the FMP amongst stakeholders with different views?” (Q2c).

More than half of participants (10/16) answered yes when asked, “Did you have concerns that items where consensus was not reached were not included in the final FMP?” (Q2d).



Q2c: Did you find the consensus decision-making process to be helpful in building support for the FMP amongst stakeholders with different views?



Q2d: Did you have concerns that items where consensus was not reached were not included in the final FMP?

Emergent Themes and Expanded Thoughts

The 10 participants who responded “no” when asked if they thought the consensus decision-making process was helpful (Q2c) cited several reasons for their concerns, including:

- “The consensus requirement kept us from reaching creative solutions to management challenges.”
- “A majority of stakeholders agreed on a recommendation, but due to one sector’s veto power, the FGC didn’t see the recommendation with majority support.”
- “Agreements and compromises are useful, but requiring 100% agreement on recommendations is not useful.”
- “Emotion and selfish interests by some stakeholders caused management efforts to be centered around individuals, rather than focused on the resource.”

Of the 10 participants who answered “yes” when asked if they had concerns that items where consensus was not reached weren’t included in the final FMP, 7 cited concerns specifically about the recreational spiny lobster fishery (Q2d). These included concerns that there was no change in the annual bag limit for the recreational fishery, as well as concerns that there was no reduction in the use of conical hoop nets.

The theme about frustration with consensus decision-making also emerged when participants were asked about the FGC. When asked about FGC consideration of LAC recommendations, 5 participants spoke about consensus concerns. One participant summed it up well, “Do you feel that the Fish and Game Commission considered LAC recommendations for the FMP?” (Q3d). “The ones they saw!”

In order for the FGC to have a complete understanding of the management issues they are making decisions about, it would be beneficial for the Commission to see both the consensus recommendations and the group recommendations with majority/high majority support.

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

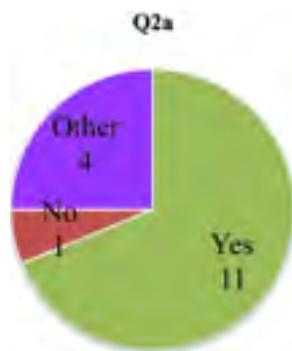
Lesson 4: LAC facilitation efforts were effective at: including diverse stakeholders in the process; sharing information at meetings and between meetings; and maintaining an environment of respect at LAC meetings.

Supporting Results

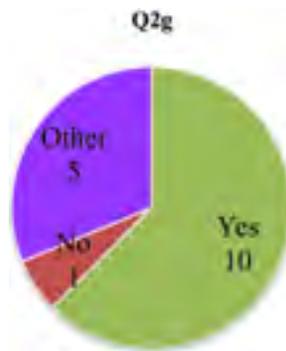
When asked about LAC facilitation efforts, 11/16 participants said they felt that substantial effort was made to include stakeholders with diverse viewpoints (Q2a).

When asked if there was open communication and effective information sharing at meetings and between meetings, 10/16 participants responded “yes” (Q2g).

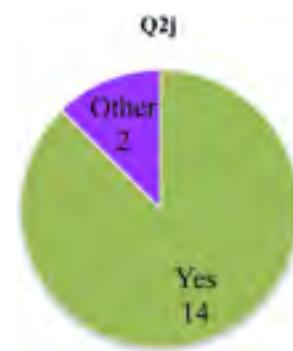
When asked if there was a cultivated environment of respect between LAC members, 14/16 participants responded “yes” (Q2j).



Q2a: Do you feel that substantial effort was made to include stakeholders with diverse viewpoints in the FMP development process?



Q2g: In your experience, was there open communication and effective information sharing at meetings, and between meetings?



Q2j: Do you feel that there was a cultivated environment of respect between LAC members?

Emergent Themes and Expanded Thoughts

Generally, participants spoke positively about facilitation efforts regarding the inclusion of diverse stakeholders, and though some noted an absence of tribal representatives, this did not present major concerns to participants. Participants also generally spoke positively about the information sharing at meetings and between meetings, though some mentioned knowledge of information sharing “behind the scenes,” which was not shared with all stakeholders.

The Advisory Committee model helped to ensure that a diverse representation of stakeholders was included in the LAC process, suggesting that this model will be useful in future FMP development efforts. This finding is in alignment with one of the key stakeholder engagement principles from the CSFSEUM, *Pursue Inclusivity*. “Ensuring an inclusive and public process is critical for safeguarding equitable decision-making and receiving a diversity of stakeholder voices.”²⁴

Several participants mentioned that their experience in the LAC process was “much better” than the Marine Life Protection Act (MLPA) process, regarding stakeholders acting respectfully. Several participants also highlighted that they felt strained relationships from the MLPA process started to mend during the LAC process.

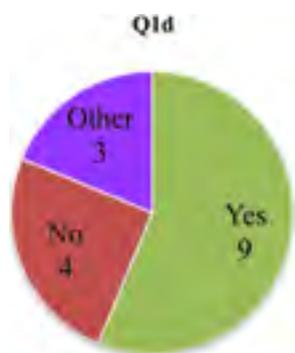
Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

Lesson 5: Future FMP facilitation efforts could be improved by: clearly defining the scope of the input CDFW is seeking from stakeholders at the beginning of the process; and streamlining stakeholder involvement in FMP development efforts.

Supporting Results

More than half of participants (9/16) responded “yes” when asked if participating in the LAC process was a good use of their time; however, 3 of these 9 participants qualified their “yes” response by stating that the process could have been more efficient (Q1d).

All of the participant responses grouped in the “other” category (3/16) cited a desire for more efficiency in the LAC process when asked if the LAC was a good use of their time. Dissenters (4/16) cited concerns about long background discussions that were never used to inform the FMP, and said that discussions could have been more targeted and structured more efficiently.



Q1d: Was participating in the LAC a good use of your time?

Emergent Themes and Expanded Thoughts

When asked the open-ended question, “What recommendations do you have to improve stakeholder processes for future FMP development?” (Q1e), 4/16 participants stated that one of the major needed improvements was clarification of the specific input desired from the LAC. These participants shared a desire for CDFW to clarify and define the scope of the feedback the Department was seeking, in order to avoid long peripheral conversations that were not ultimately put to use. These participants stated that lack of focus created an unnecessarily long stakeholder engagement process.

Clear expectations and guidance from CDFW—with input from stakeholders—will improve efficiency of both the Department’s time and stakeholders’ time. *Set Clear Goals* is one of the top five stakeholder engagement principles from the CSFSEUM. “Clear goals for stakeholder engagement, particularly when established in collaboration with stakeholders, improves clarity around decision-making expectations and opportunities for public participation.”⁴

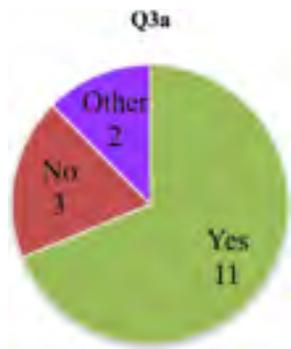
Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

Lesson 6: CDFW Biologist/Scientist staff participation and involvement is valuable to FMP process outcomes.

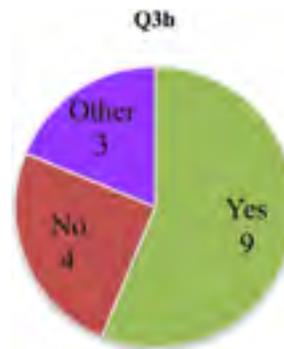
Supporting Results

When asked if CDFW Biologist/Scientist staff were readily available to answer questions from the LAC, 11/16 participants responded “yes” (Q3a).

Fewer participants (9/16) responded “yes” when asked if CDFW Biologist staff were appropriately involved in the FMP development process (Q3b).



Q3a: Do you feel that CDFW Biologist/Scientist staff were readily available to answer questions from the LAC?



Q3b: Do you feel that CDFW Biologist/Scientist staff were appropriately involved in the FMP development process?

Emergent Themes and Expanded Thoughts

Of the 5 participants who responded “no” or “other” when asked about Biologist/Scientist staff availability to answer questions (Q3a), 3 participants cited concerns about the high turnover of CDFW Biologist staff during the stakeholder engagement process, as did 2 of the participants who responded “yes” to the same question.

Of the 9 participants who responded “yes” when asked if CDFW Biologist staff were appropriately involved in the FMP development process (Q3b), 3 participants also mentioned concerns about CDFW Biologist staff turnover. Several participants also raised related concerns about the lack of transparency surrounding the Department’s abandonment of their own internally developed population model.

Overall, participants valued the participation and involvement of CDFW Biologist staff. Participants desired consistency in CDFW Biologist/Scientist staff for the duration of the process. Participants also desired transparency from the Department regarding decisions about the use of models developed by CDFW Biologist staff versus scientific consultants.

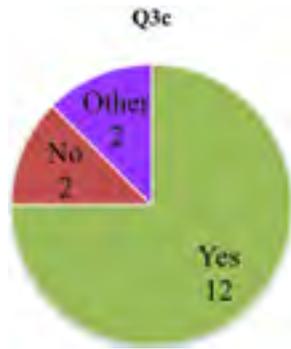
In order to avoid high staff turnover during FMP development and stakeholder engagement processes, in the future the Department and facilitators should focus on expedient FMP development. This concept is discussed further in Lesson 9.

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

Lesson 7: CDFW Warden involvement in FMP development is valuable and appreciated by stakeholders.

Supporting Results

When asked if CDFW Wardens were readily available to answer questions from the LAC, and were appropriately involved in the FMP development process, 12/16 participants responded “yes” (Q3c).



Q3c: Do you feel that CDFW Wardens were readily available to answer questions from the LAC, and that CDFW Wardens were appropriately involved in the FMP development process?

Emergent Themes and Expanded Thoughts

Several participants shared that CDFW Wardens were not initially involved in the FMP development process, and that the LAC requested their involvement during the process. Participants also highlighted that it was helpful to have field-level Wardens (as opposed to Wardens higher up the chain of command) involved in the process, due to their current firsthand experience and understanding of enforcement challenges in the field. Several participants cited concerns about staff turnover of participating Wardens during the LAC process.

Engaging CDFW Wardens early in the process will likely be beneficial in future FMP development efforts for the unique perspective and knowledge Wardens bring to discussions with stakeholders.

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

Lesson 8: Stakeholder confidence in the FMP would increase if CDFW collected more Essential Fishery Information (EFI) to ensure that harvest strategies reflect current lobster populations and ocean conditions.

Supporting Results

When asked about their confidence that the FMP is based upon the best available science, more respondents said “Neutral” (5 participants) than any other confidence level (Q4i).

When asked about their confidence that the FMP will ensure that harvest strategies reflect current lobster populations and current ocean conditions, the majority of responses were split between “Neutral” (5 participants) and “Somewhat Confident” (5 participants) (Q4k).

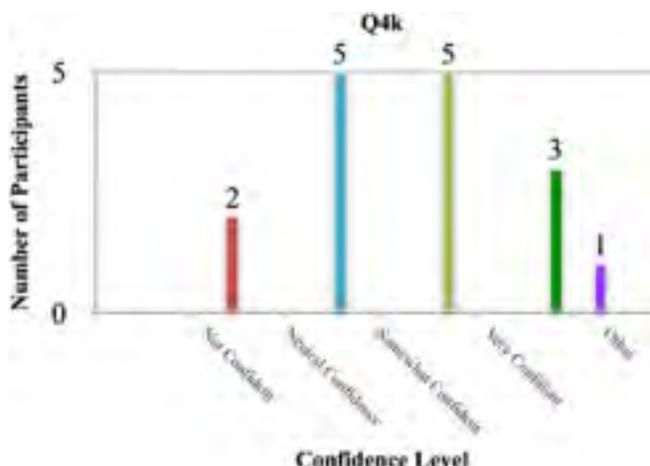
When asked about their confidence that the FMP will allow CDFW to effectively respond to future changes to the fishery or resources, the majority of responses were either “Somewhat Confident” (5 participants) or “Neutral” (4 participants) (Q4l).

When asked, “Do you feel that FMP implementation will ensure the sustainability of the lobster population and its ecosystem?” only 3/16 participants said “yes” (Q4b).

When asked, “Do you feel that implementation of the FMP will allow EFI to be collected?” the majority (10/16) of participants said “no” or “other” (Q4f).

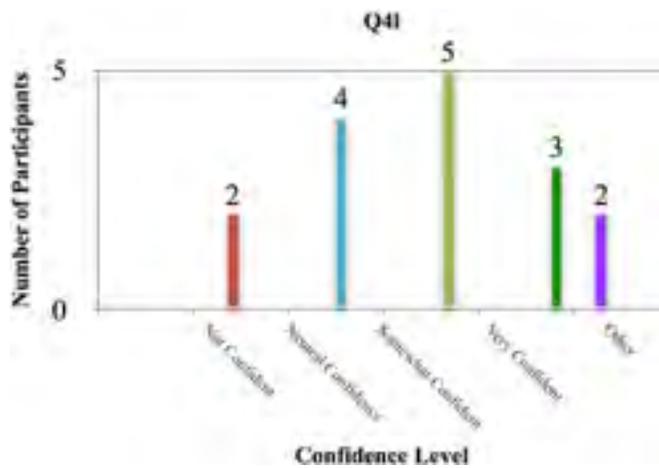


Q4i: How confident are you that the FMP is based upon the best available science?

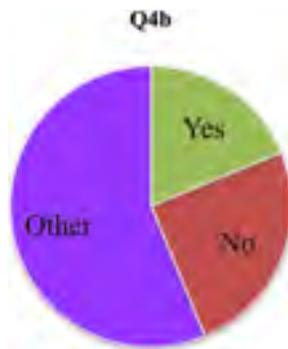


Q4k: How confident are you that the FMP will ensure that harvest strategies reflect current lobster populations and current ocean conditions?

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process



Q4i: How confident are you that the FMP will allow CDFW to effectively respond to future changes to the fishery or resources?



Q4b: Do you feel that implementation of the FMP will ensure the sustainability of the lobster population and its ecosystem?



Q4f: Do you feel that implementation of the FMP will allow essential fishery information to be collected?

Emergent Themes and Expanded Thoughts

Participants' rating of their confidence in the FMP achieving stated goals should ideally be "Very Confident" or "Somewhat Confident," since these are the stakeholders who are most knowledgeable about FMP specifics. Responses to questions Q4b, Q4f, Q4i, Q4k, Q4l all show room for improvement of the FMP in a common area—the need for more information about real time lobster population status and Essential Fishery Information.

CDFW's goal for the FMP states that sustainable management of the lobster fishery will be responsive to environmental and socioeconomic changes. In order to be responsive to changes, the Department must know when the changes are occurring, thus good information gathering—and accessibility to real time lobster population data—is at the heart of this goal.

Essential Fishery Information data collection should be prioritized moving forward. Survey participants clearly expressed a desire for better data collection about the current status of the spiny lobster fishery. This data will be critical in informing future conversations about balance in resource allocation between the recreational and commercial fisheries.

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

Lesson 9: Expedient FMP development is key to achieving process outcomes with high stakeholder approval.

Supporting Results

As discussed previously, just over half of participants (9/16) responded “yes” when asked if participating in the LAC process was a good use of their time, and 3 of these 9 participants qualified their “yes” response by stating that the process could have been more efficient (Q1d).



Q1d: Was participating in the LAC a good use of your time?

Emergent Themes and Expanded Thoughts

One theme emerged frequently from participant responses to a wide variety of survey questions—frustration with the lengthy stakeholder engagement and FMP development processes. Participants cited frustration that the process took nearly four years from the first meeting of the LAC (June 2012) until FGC adoption of the Spiny Lobster FMP (April 2016). Several participants also mentioned the one year lag period in between LAC meetings and FMP adoption, citing concerns that external political forces were at play, and that confidence in consensus recommendations had eroded during this gap year.

Several participants also shared that promises by the Department and FGC to revisit key issues were left unfulfilled after adoption of the Spiny Lobster FMP, and that they are still expecting to revisit these key issues.

In order to avoid erosion of confidence in consensus recommendations before an FMP is adopted, and to allay concerns about mid-process turnovers of Department staff and FGC Commissioners, developing future FMPs in an expedient manner will benefit process outcomes.

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

References

1. Guiding Principles. Lobster Advisory Committee Charter. (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=55156&inline>). Approved August 1, 2012.
2. Lobster Advisory Committee “Hopes, Concerns, and Vision” Exercise Summary. (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=48392&inline>). Conducted June 20, 2012.
3. 2018 Master Plan for Fisheries: A Guide for Implementation of the Marine Life Management Act. (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=159222&inline>). Adopted June 2018.
4. Center for Ocean Solutions, Kearns & West Consultants. California State Fisheries Stakeholder Engagement User Manual Working Draft. September 2017.
5. Dedoose Software. (<https://www.dedoose.com/>). Accessed May-July 2018.

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

APPENDIX 1: Lobster Advisory Committee Stakeholder Engagement Survey

Lobster Advisory Committee Stakeholder Engagement Survey

1) LOBSTER ADVISORY COMMITTEE MEMBER EXPERIENCE

- a) Do you feel that your input was incorporated into the final Spiny Lobster FMP?
- b) Did you have adequate opportunities to make your voice heard/ represent the concerns and viewpoints of your constituents?
- c) Did the Lobster Advisory Committee (LAC) process allow you to understand the views of stakeholders that were different than your own?
- d) Was participating in the LAC a good use of your time?
- e) What recommendations do you have to improve stakeholder processes for future FMP development?

2) LAC/FMP FACILITATION PROCESS

- a) Do you feel that substantial effort was made to include stakeholders with diverse viewpoints in the FMP development process?
- b) Do you feel that substantial effort was made to include younger and older generations in the planning process?
- c) Did you find the consensus decision-making process to be helpful in building support for the FMP amongst stakeholders with different views?
- d) Did you have concerns that items where consensus was not reached were not included in the final FMP?
- e) Were LAC meeting objectives clearly defined and was progress towards those objectives assessed throughout the process?
- f) Do you feel that the LAC and this FMP process will be a good model for future FMP processes?
- g) In your experience, was there open communication and effective information sharing at meetings, and between meetings?
- h) Do you feel that stakeholders had equal opportunities to express their views, and the views of their constituents?
- i) Do you feel that stakeholders' views were incorporated into the final FMP in a fair and balanced manner?
- j) Do you feel that there was a cultivated environment of respect between LAC members?

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

3) CDFW/COMMISSION INVOLVEMENT

- a) Do you feel that CDFW scientist/biologist staff were readily available to answer questions from the LAC?
- b) Do you feel that CDFW Biologist/Scientist staff were appropriately involved in the FMP development process?
- c) Do you feel that CDFW Wardens were readily available to answer questions from the LAC, and that CDFW Wardens were appropriately involved in the FMP development process?
- d) Do you feel that the Fish and Game Commission considered LAC recommendations for the FMP?

4) WAS THE STATED GOAL FOR THE FMP MET?

CDFW goal statement for the Spiny Lobster FMP:

“The goal of the FMP is to formalize a management strategy for spiny lobster that will be responsive to environmental and socioeconomic changes and establish the basis for informed decision-making to achieve a sustainable fishery considering the entire ecosystem.”

- a) In your opinion, was this goal met?
- b) Do you feel that implementation of the FMP will ensure the sustainability of the lobster population and its ecosystem?
- c) Do you feel that implementation of the FMP will promote an economically viable commercial fishery?
- d) Do you feel that implementation of the FMP will enhance recreational opportunities for both consumptive and non-consumptive uses?
- e) Do you feel that implementation of the FMP will have an affect of minimizing bycatch?
- f) Do you feel that implementation of the FMP will allow essential fishery information to be collected?
- g) Do you feel that this goal was met due to the involvement of the Lobster Advisory Committee? In your opinion, would it have been different if the LAC was not established?
- h) How confident are you that the implementation of the FMP will result in the management of the Lobster fishery that strikes the right balance between economic interests and environmental interests?
(Not Confident - Neutral - Somewhat Confident - Very Confident)
- i) How confident are you that the FMP is based upon the best available science?
(Not Confident - Neutral - Somewhat Confident - Very Confident)
- j) How confident are you that the FMP considers the entire ecosystem?
(Not Confident - Neutral - Somewhat Confident - Very Confident)
- k) How confident are you that the FMP will ensure that harvest strategies reflect current lobster populations and current ocean conditions?
(Not Confident - Neutral - Somewhat Confident - Very Confident)

Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process

l) How confident are you that the FMP will allow CDFW to effectively respond to future changes to the fishery or resources?

(Not Confident - Neutral - Somewhat Confident - Very Confident)

m) Was the science behind the FMP clearly explained to you, including (a) reference points for the harvest control rule and (b) stock assessment methods?

5) FMP IMPLEMENTATION

a) Did you participate in the 2017-2018 season for the lobster fishery?

b) Were you provided a clear explanation of the regulation changes to the spiny lobster fishery? Where did you observe/receive this explanation of the regulation changes?

c) Did you observe a change in the amount of enforcement activity focused on the lobster fishery?
(less enforcement - equal enforcement - more enforcement)

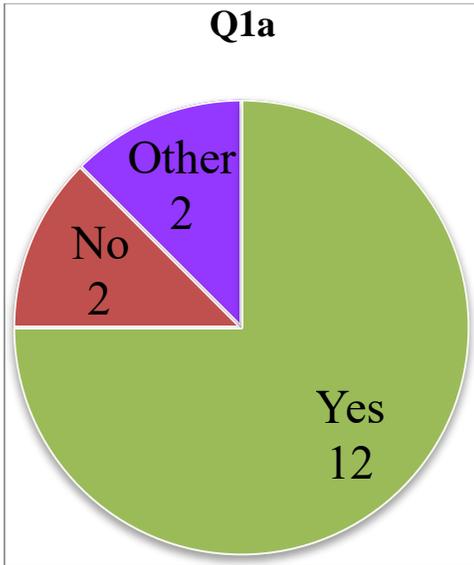
d) Will you participate in the 2018-2019 lobster season?

e) Did you have to make significant financial investments to continue participating in the lobster fishery, due to regulation changes? If so, please explain/summarize (if comfortable).

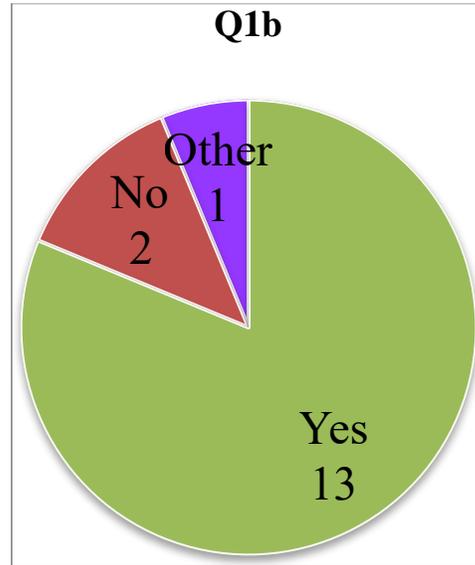
f) If you are a recreational diver:

Did your participation in opening day fishing change from last year, due to the change in season start time? (ex: In past years did you begin fishing at 12:01am, and change that behavior in 2017 to begin fishing at 6:00am?) Did you experience a change in safety for recreational divers with the opening day time change?

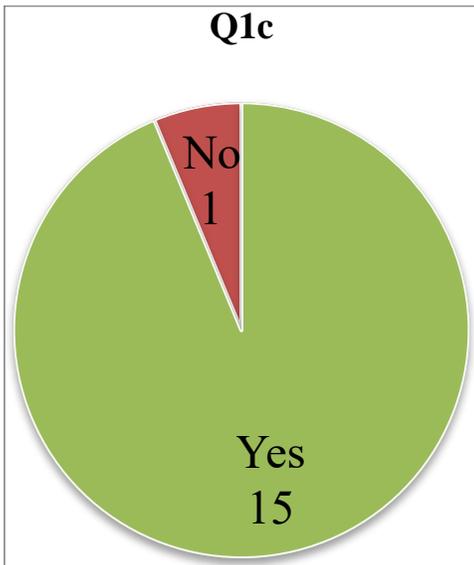
APPENDIX 2: Lobster Advisory Committee Stakeholder Engagement Survey Responses



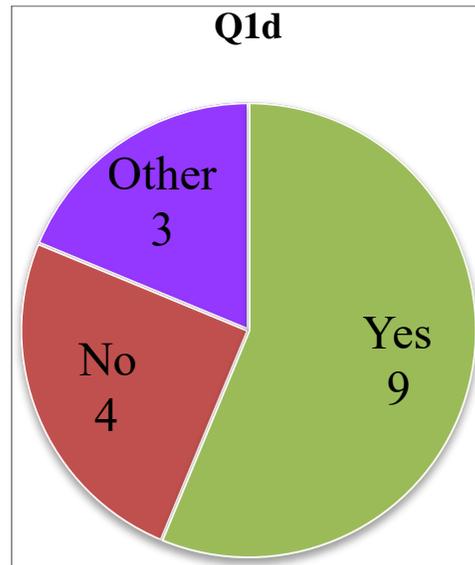
Q1a: Do you feel that your input was incorporated into the final Spiny Lobster FMP?



Q1b: Did you have adequate opportunities to make your voice heard/ represent the concerns and viewpoints of your constituents?

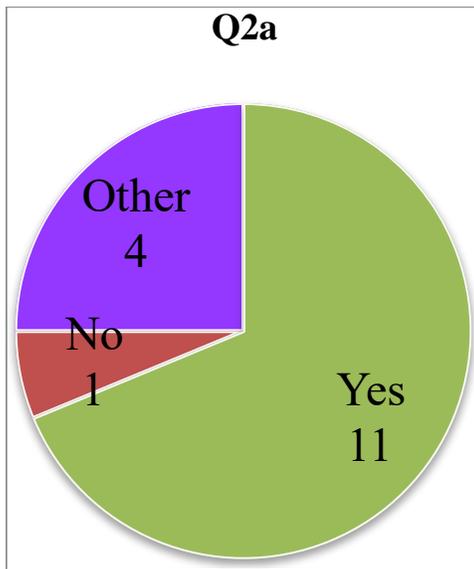


Q1c: Did the Lobster Advisory Committee (LAC) process allow you to understand the views of stakeholders that were different than your own?

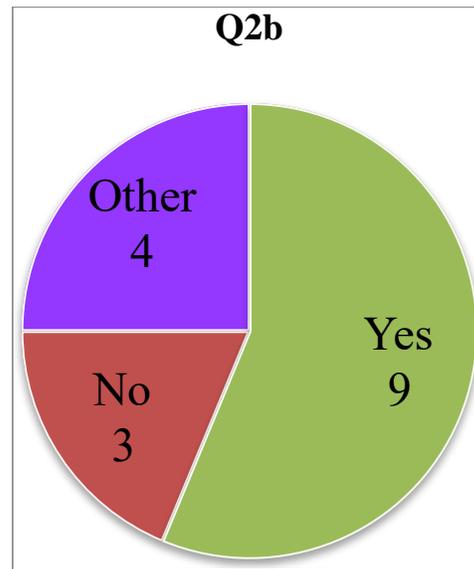


Q1d: Was participating in the LAC a good use of your time?

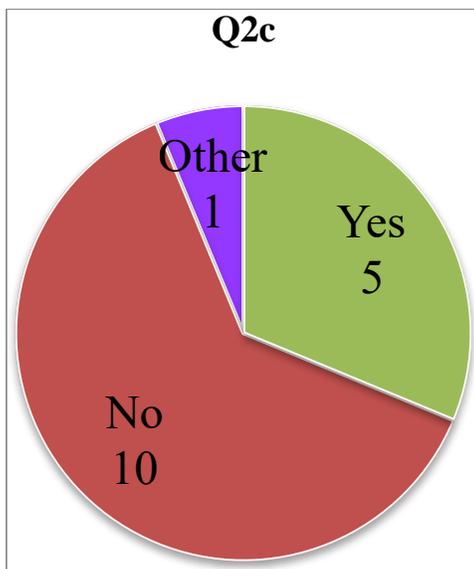
Stakeholder Engagement in Fishery Management Plan Development:
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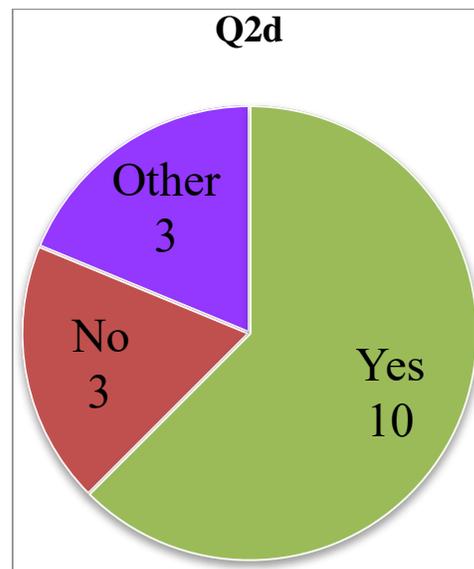
Q2a: Do you feel that substantial effort was made to include stakeholders with diverse viewpoints in the FMP development process?



Q2b: Do you feel that substantial effort was made to include younger and older generations in the planning process?

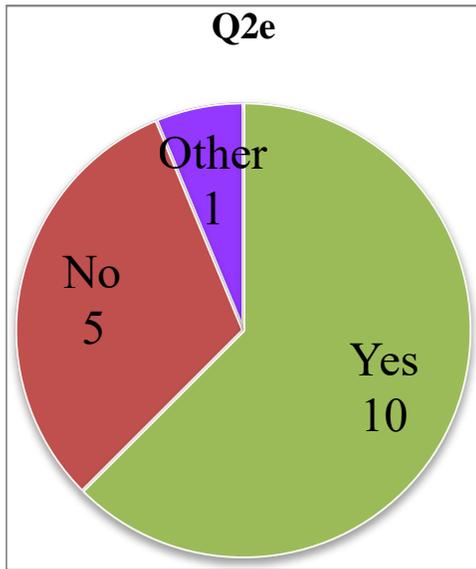


Q2c: Did you find the consensus decision-making process to be helpful in building support for the FMP amongst stakeholders with different views?

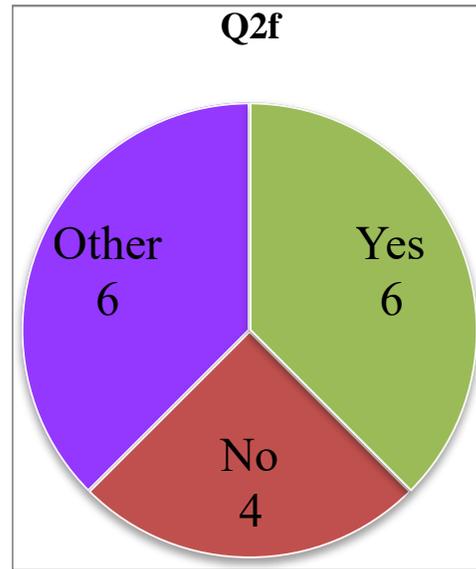


Q2d: Did you have concerns that items where consensus was not reached were not included in the final FMP?

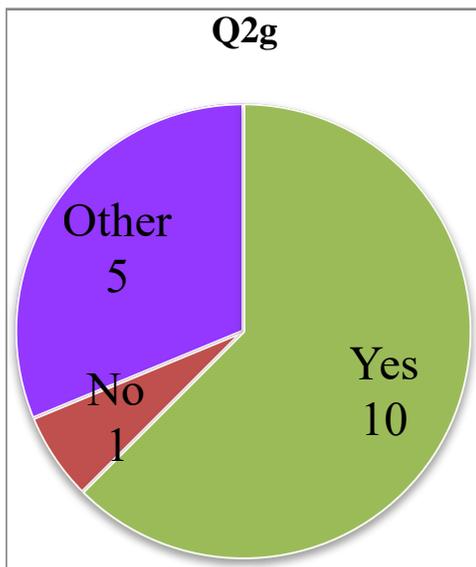
Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process



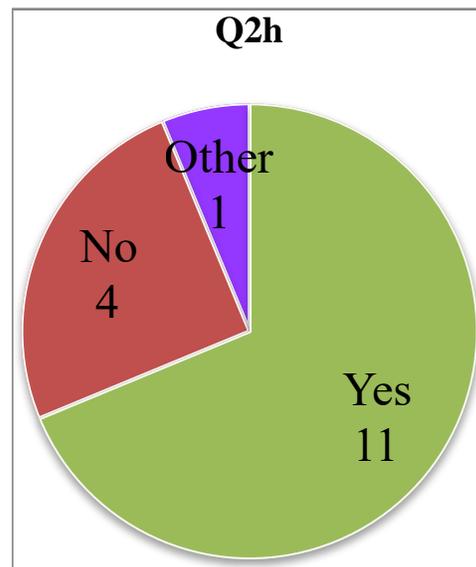
Q2e: Were LAC meeting objectives clearly defined and was progress towards those objectives assessed throughout the process?



Q2f: Do you feel that the LAC and this FMP process will be a good model for future FMP processes?

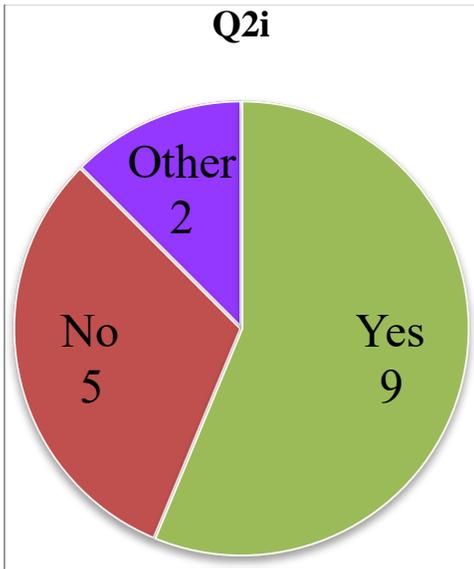


Q2g: In your experience, was there open communication and effective information sharing at meetings, and between meetings?

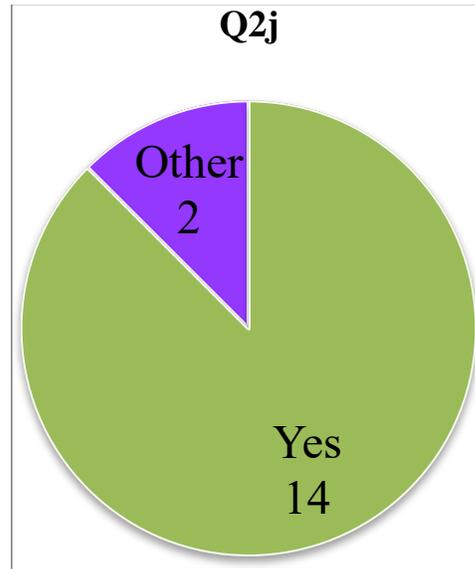


Q2h: Do you feel that stakeholders had equal opportunities to express their views, and the views of their constituents?

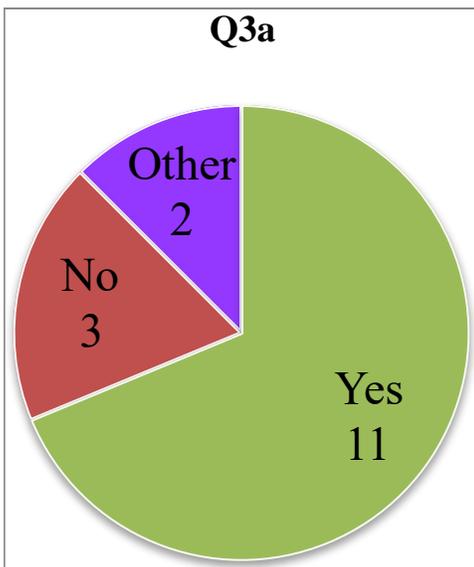
Stakeholder Engagement in Fishery Management Plan Development:
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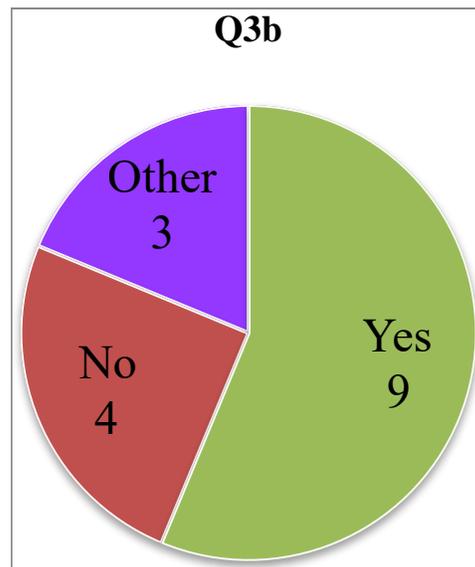
Q2i: Do you feel that stakeholders' views were incorporated into the final FMP in a fair and balanced manner?



Q2j: Do you feel that there was a cultivated environment of respect between LAC members?

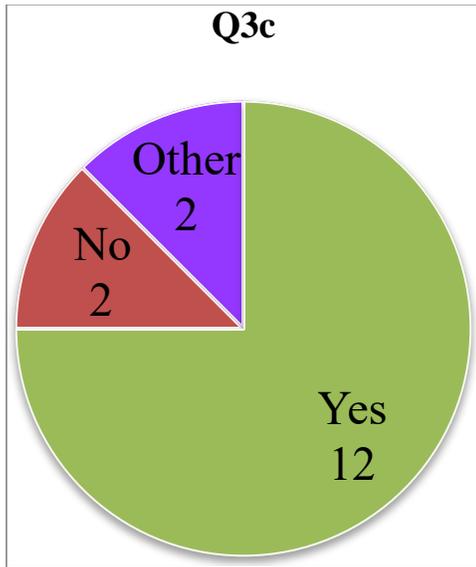


Q3a: Do you feel that CDFW scientist/biologist staff were readily available to answer questions from the LAC?

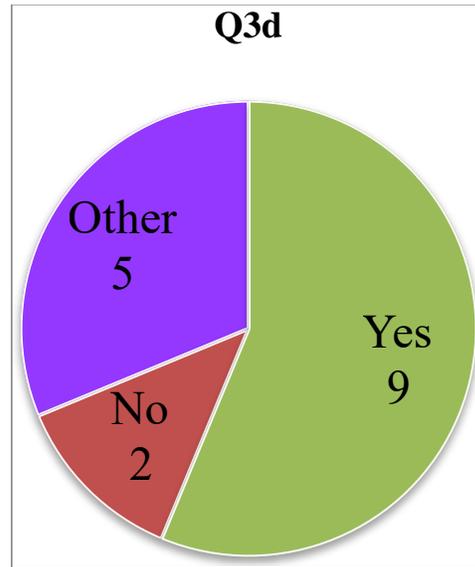


Q3b: Do you feel that CDFW Biologist/Scientist staff were appropriately involved in the FMP development process?

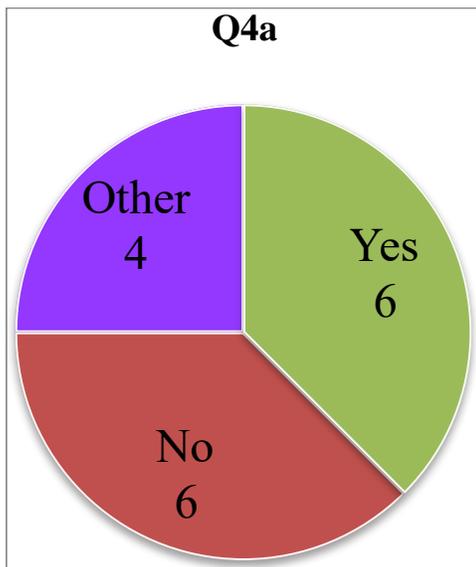
Stakeholder Engagement in Fishery Management Plan Development:
Lessons Learned from the Lobster Advisory Committee Process



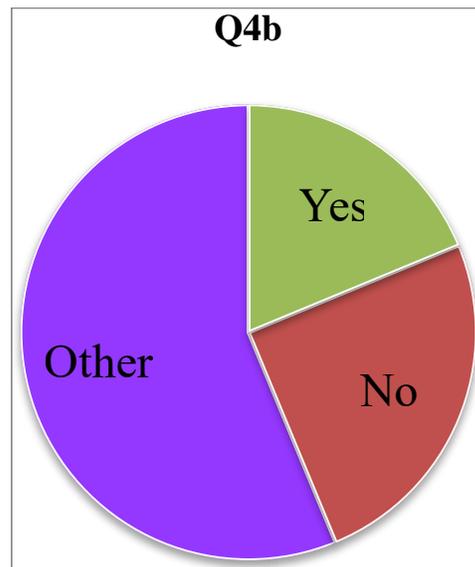
Q3c: Do you feel that CDFW Wardens were readily available to answer questions from the LAC, and that CDFW Wardens were appropriately involved in the FMP development process?



Q3d: Do you feel that the Fish and Game Commission considered LAC recommendations for the FMP?

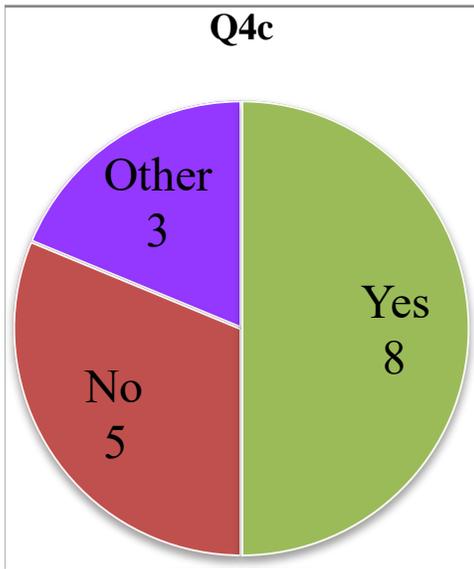


Q4a: In your opinion, was [the stated FMP] goal met?

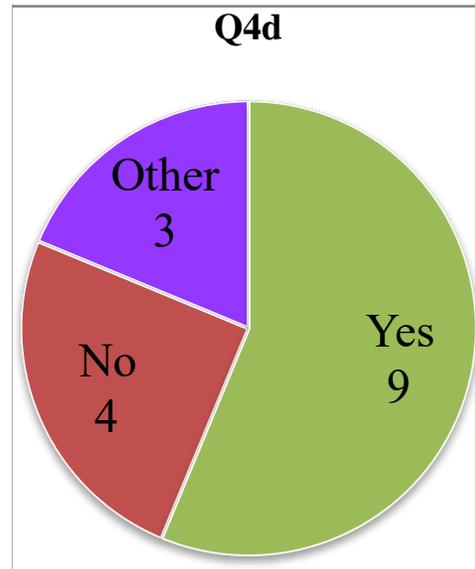


Q4b: Do you feel that implementation of the FMP will ensure the sustainability of the lobster population and its ecosystem?

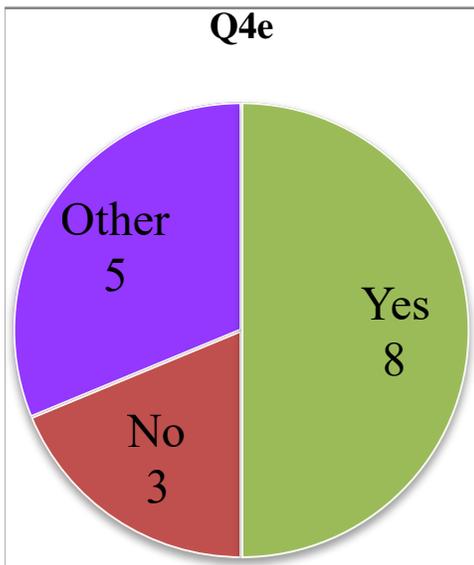
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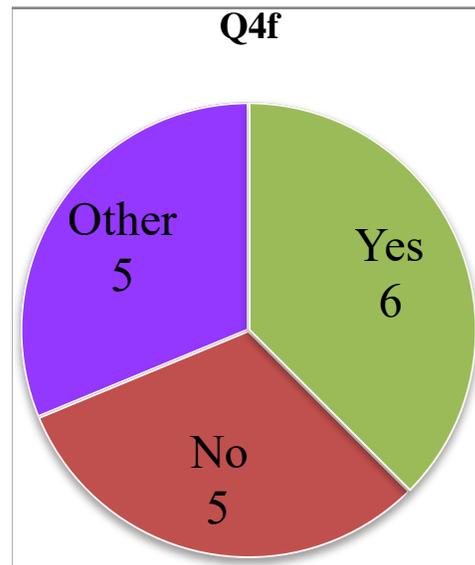
Q4c: Do you feel that implementation of the FMP will promote an economically viable commercial fishery?



Q4d: Do you feel that implementation of the FMP will enhance recreational opportunities for both consumptive and non-consumptive users?

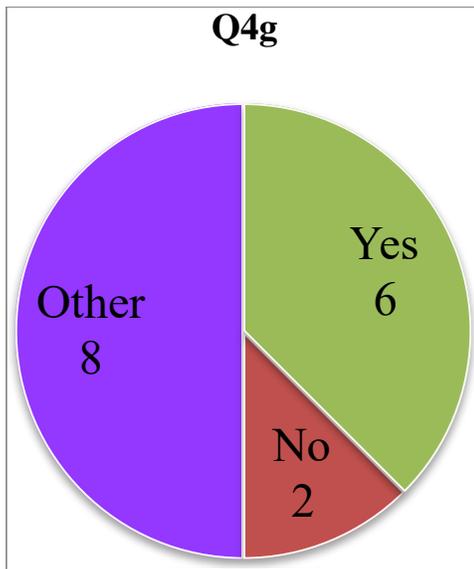


Q4e: Do you feel that implementation of the FMP will have an affect of minimizing bycatch?

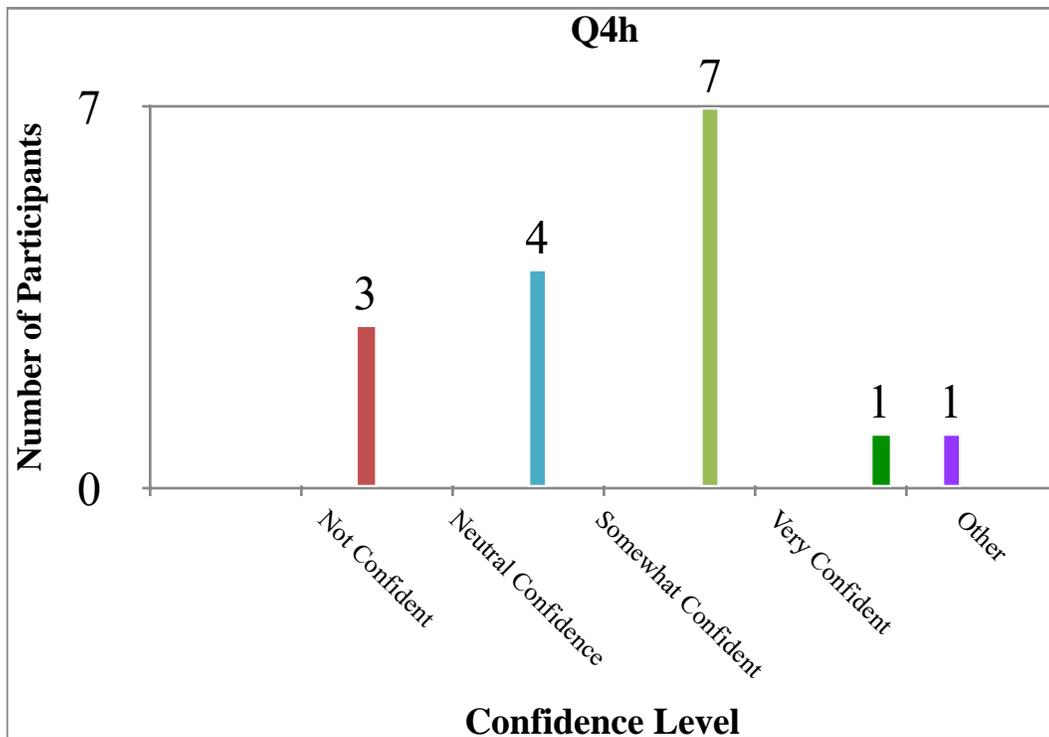


Q4f: Do you feel that implementation of the FMP will allow essential fishery information to be collected?

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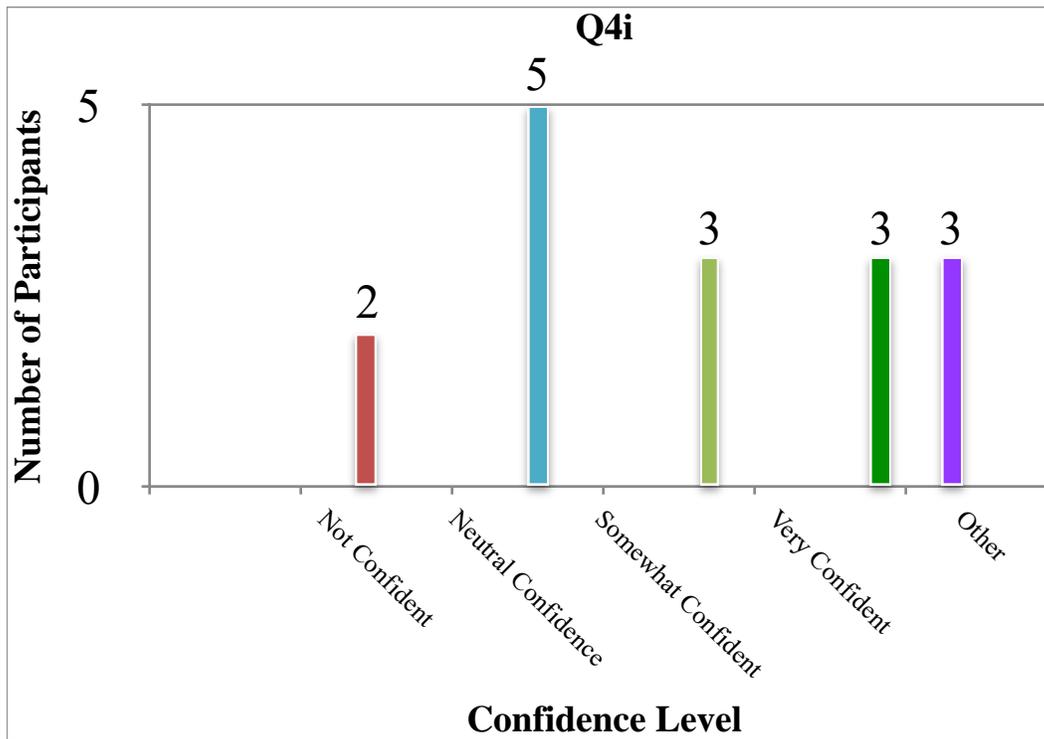


Q4g: Do you feel that this goal was met due to the involvement of the Lobster Advisory Committee? In your opinion, would it have been different if the LAC was not established?

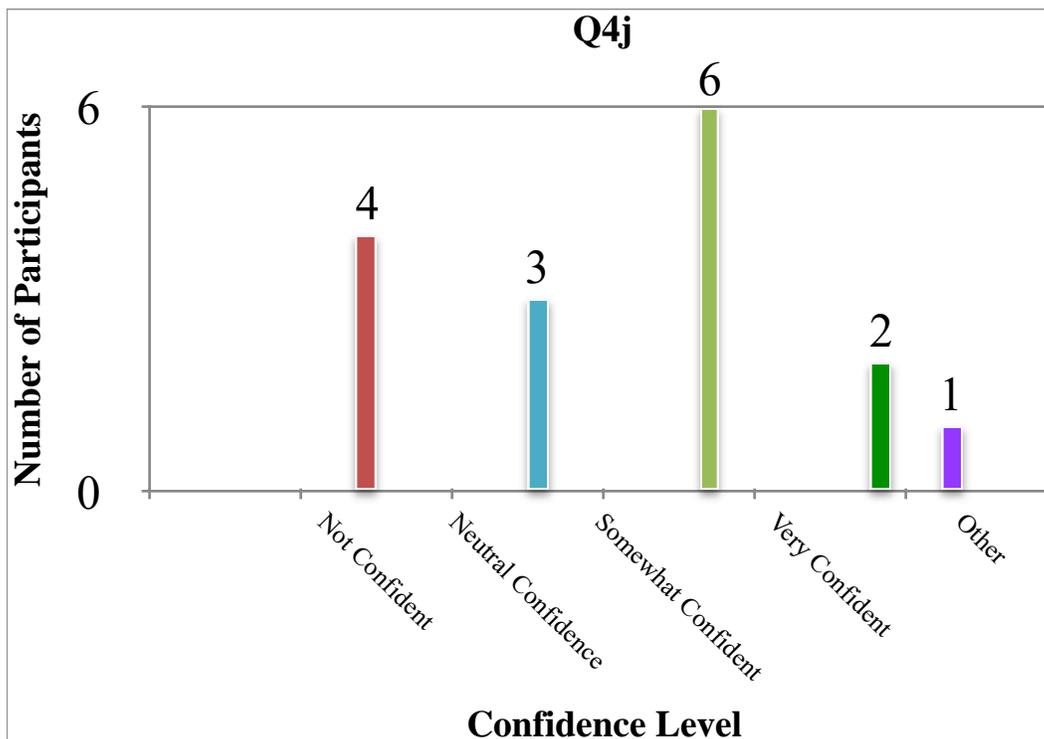


Q4h: How confident are you that the implementation of the FMP will result in the management of the Lobster fishery that strikes the right balance between economic interests and environmental interests?

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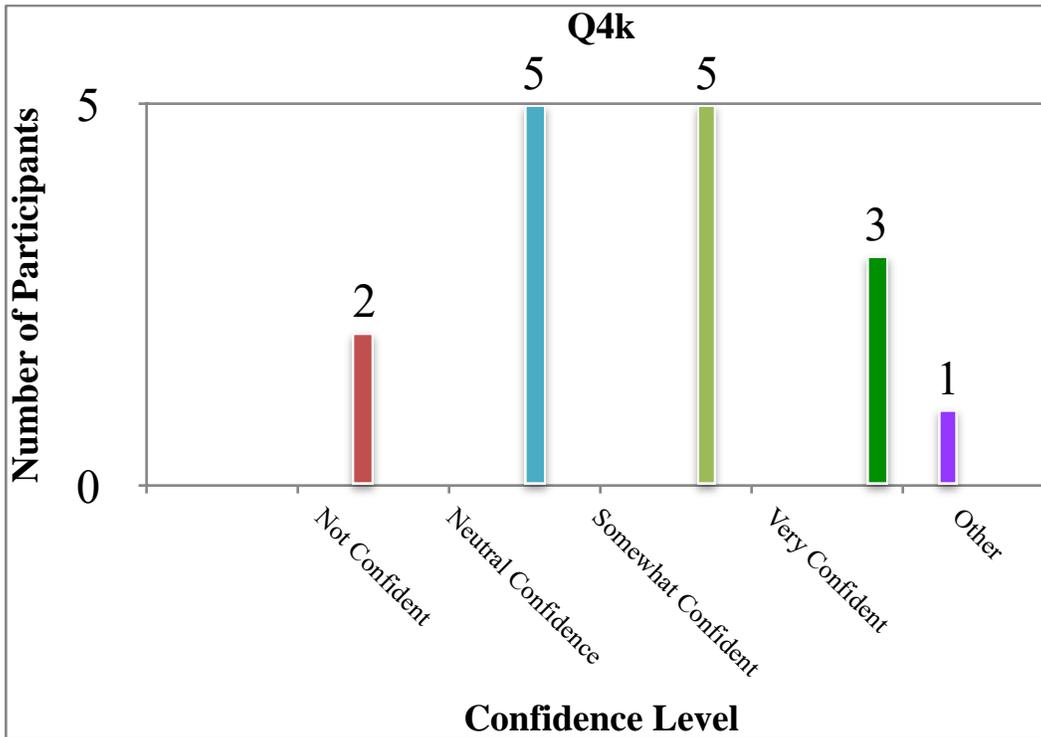


Q4i: How confident are you that the FMP is based upon the best available science?

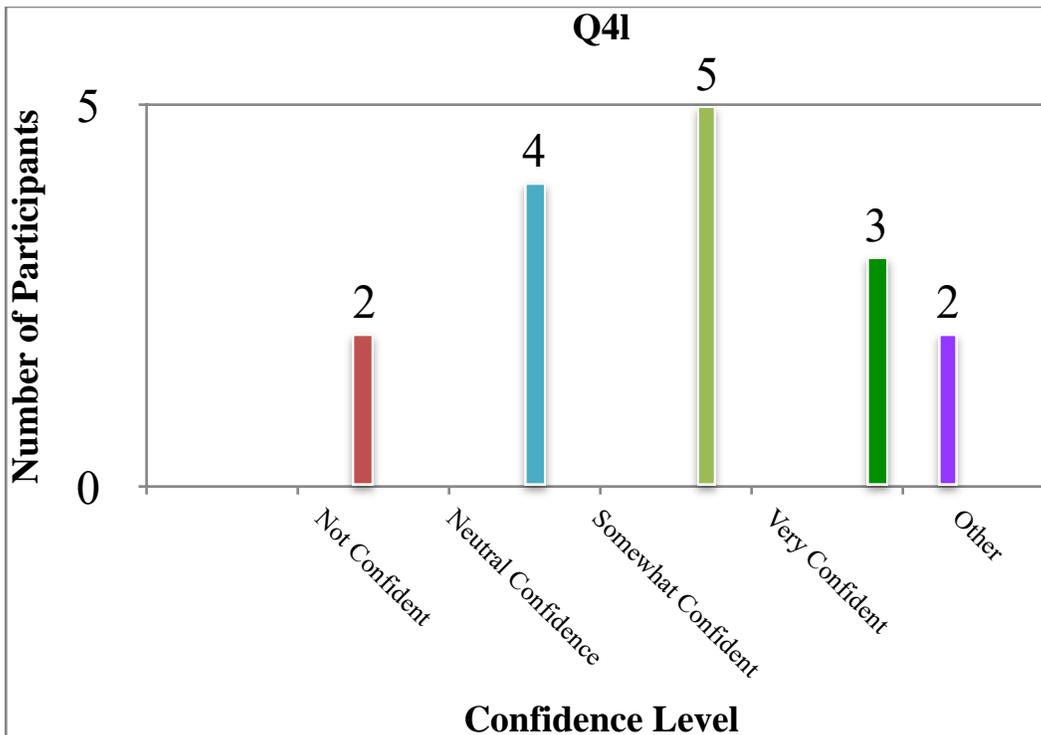


Q4j: How confident are you that the FMP considers the entire ecosystem?

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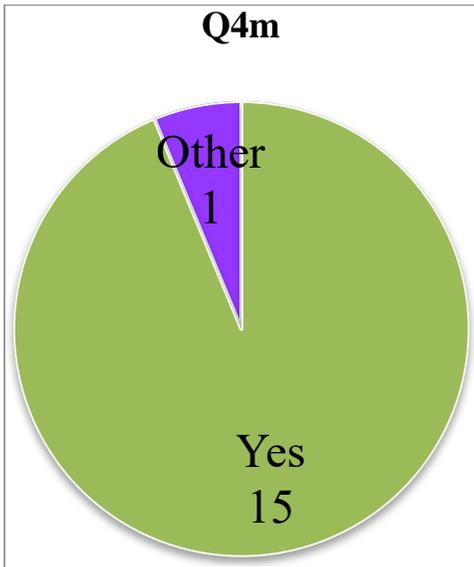


Q4k: How confident are you that the FMP will ensure that harvest strategies reflect current lobster populations and current ocean conditions?

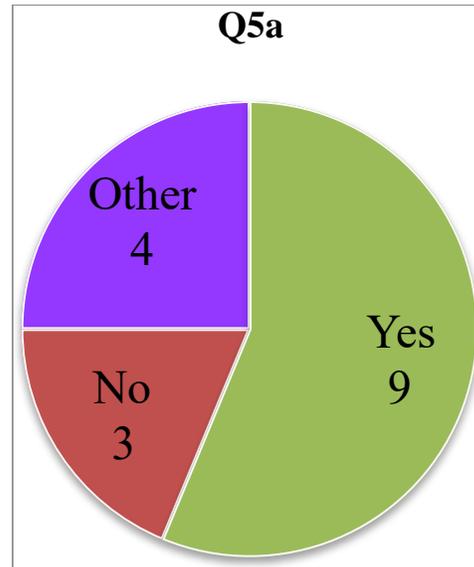


Q4l: How confident are you that the FMP will allow CDFW to effectively respond to future changes to the fishery or resources?

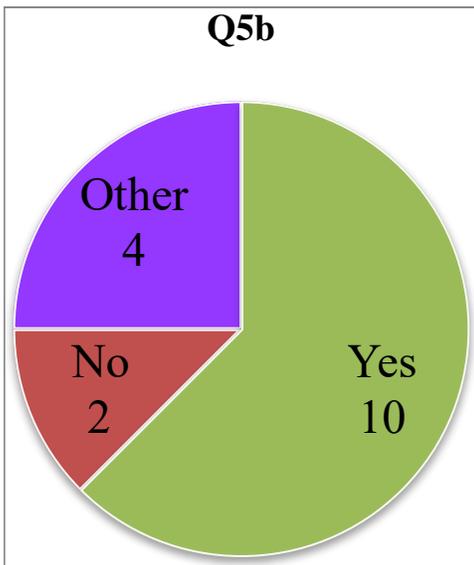
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Q4m: Was the science behind the FMP clearly explained to you, including (a) reference points for the harvest control rule and (b) stock assessment methods?

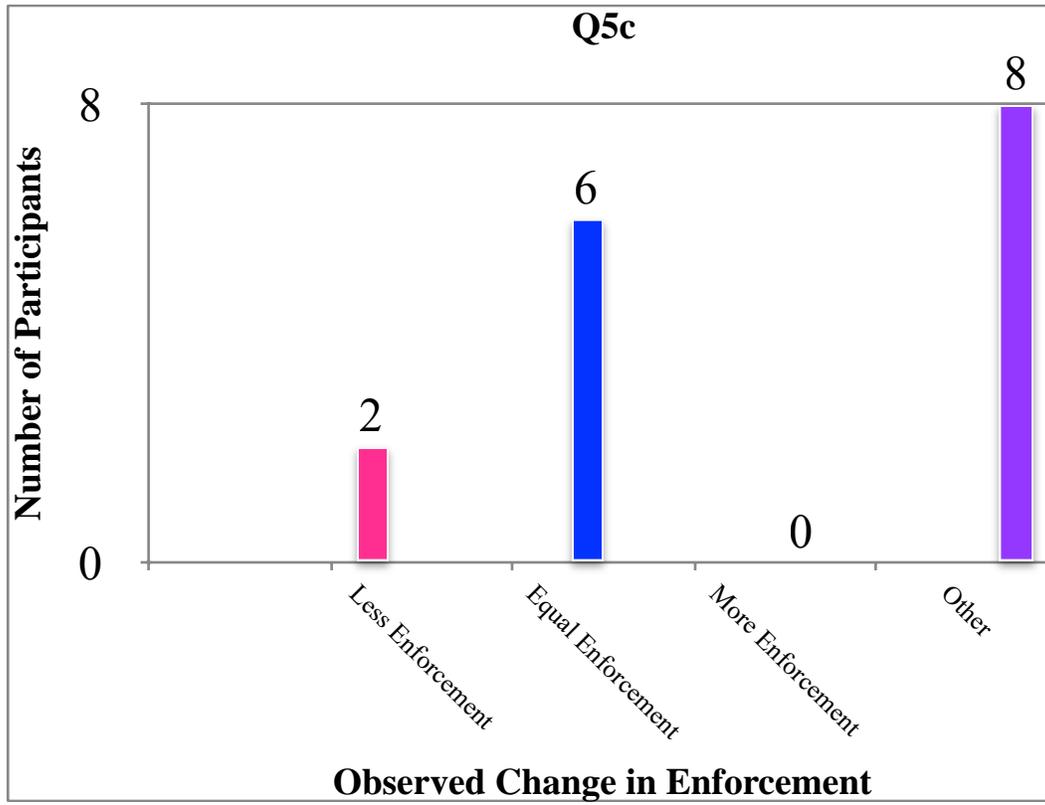


Q5a: Did you participate in the 2017-2018 season for the lobster fishery?

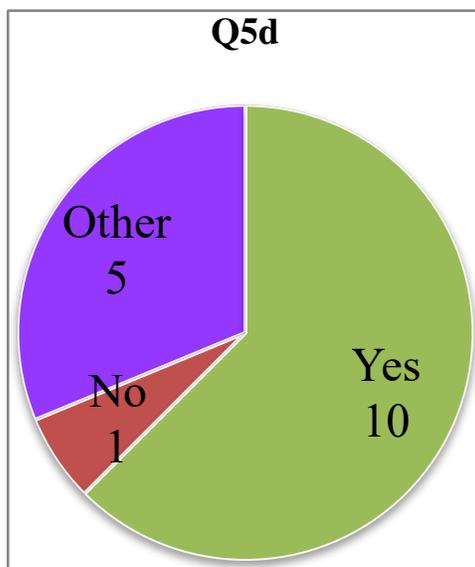


Q5b: Were you provided a clear explanation of the regulation changes to the spiny lobster fishery?

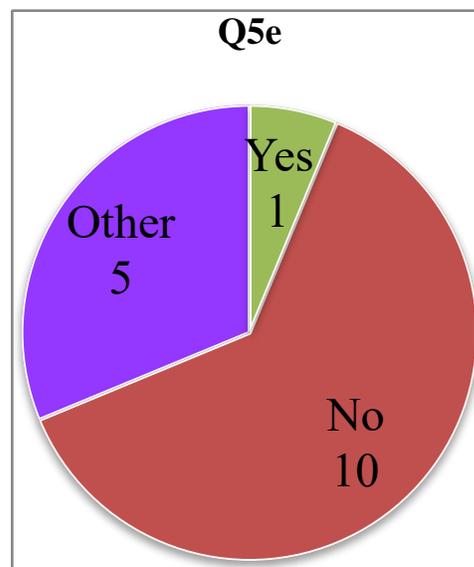
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Q5c: Did you observe a change in the amount of enforcement activity focused on the lobster fishery?

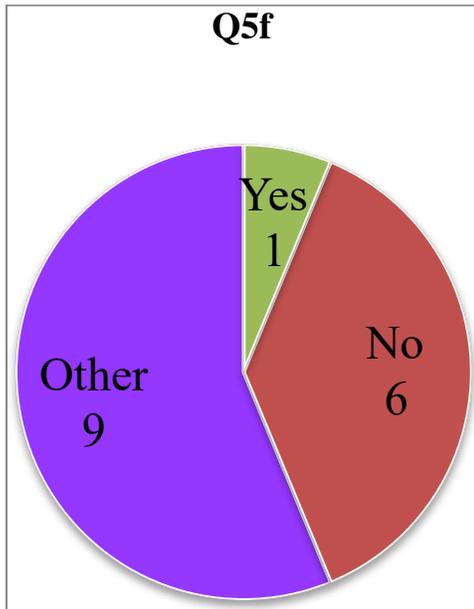


Q5d: Will you participate in the 2018-2019 lobster season?



Q5e: Did you have to make significant financial investments to continue participating in the lobster fishery, due to regulation changes?

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**Q5f: If you are a recreational diver:
Did your participation in opening day fishing change from last year, due to the change in season start time?
(ex: In past years did you begin fishing at 12:01am, and change that behavior in 2017 to begin fishing at 6:00am?)**

**Marine Resources Committee (MRC) Work Plan
Scheduled Topics and Timeline for
Items Referred to MRC from California Fish and Game Commission
Updated November 5, 2018**

Topic	Category	2018	2019		
		NOV	MAR	JUL	NOV
		Sacramento	Pacific Grove	San Clemente	Sacramento
Planning Documents					
MLMA Master Plan for Fisheries - Implementation Updates	Master Plan	X	X	X	X
Aquaculture Programmatic Environmental Impact Report (PEIR)	Programmatic Plan	X	X		
Regulations					
Sport Fishing	Annual Rulemaking		X		
Aquaculture Lease Best Management Practices (BMP) Plan Requirements	DFW-FGC Project/ Rulemaking	X/R			
Kelp & Algae Commercial Harvest	DFW Project/ Rulemaking		X		
Emerging/Developing Management Issues					
Aquaculture State Water Bottom Leases: Existing and future lease considerations	Lease Management Review				
Special Projects					
California's Coastal Fishing Communities	MRC project	X	X		
Informational / External Topics of Interest					
Marine Debris and Plastic Pollution (updates upon request)	Informational				
BOEM Offshore Wind Energy Project (updates upon request)	Informational				
Lobster Advisory Committee stakeholder lessons learned report - presentation by Heal the Bay	Informational	X			

KEY: X Discussion scheduled X/R Recommendation developed and moved to FGC

California Fish and Game Commission – Perpetual Timetable for Anticipated Regulatory Actions

(dates shown reflect the date intended for the subject regulatory action)

Updated: 10/18/18

For FGC Staff Use				REGULATORY CHANGE CATEGORY	ACTION DATE, TYPE AND LOCATION	2018			2019														
						NOV	DEC		JAN	FEB	FEB	MAR	APR	MAY	MAY	JUN	JUN	JUL	AUG	SEP	OCT	OCT	
						14	12	13	10	5	6	7	19	17	18	16	16	11	12	13	11	7	8
QUARTERLY EFFECTIVE	DFW RU ANALYST	FGC ANALYST	LEAD			MRC SACRAMENTO	FGC OCEANSIDE	WRC RIVERSIDE	TC SACRAMENTO	FGC SACRAMENTO	MRC MONTEREY MARINA	FGC LOS ANGELES	TELECONFERENCE	WRC SACRAMENTO	TC REDDING	FGC REDDING	MRC SAN CLEMENTE	FGC SACRAMENTO	WRC SANTA ROSA	TC SAN DIEGO	FGC SAN DIEGO		
File Notice w/OAL by Notice Published						10/16/18	10/26/18			12/11/18	12/21/18	02/19/19	03/01/19			04/16/19	04/26/19		06/11/19	06/21/19		08/15/19	08/23/19
Title 14 Section(s)																							
*	OA	SF	FB	Commercial Use and Possession of Rattlesnakes - Resubmittal	42, 43, 651, 703			E 1/1															
*		SF	FGC	Tribal Take in Marine Protected Areas	632			E 1/1															
*		SF	FGC	Rockport Rocks Special Closure	632(b)(17)			E 1/1															
	MR	JS	WLB	Sage Grouse Preferential Points and Draw	716			E 1/1															
*	OA	JS	MR	Incidental Take Allowances for Crabs, other than Genus <i>Cancer</i> , in Trap Fisheries	125.1(c)(3), 126, 126.1			E 1/1															
*	MR	ST	HCB	Coast Yellow Leptosiphon and Lassics Lupine	670.2						E 4/1												
	OA	ST	MR	Groundfish	27.30, 27.35, 27.40, 27.45, 27.50, 28.27, 28.55, 52.10, 150.16		A		E 1/1														
	MS	ST	MR	Recreational Take of Red Abalone	29.15		A				E 4/1												
*	MR	ST	MR	Commercial Logbooks	107, 174 and 176		D/A				E 4/1												
	OA	JS	FB	Sport Fishing (Annual)	1.53, 1.74, 5.00		A	V			E 3/1			R									
	MR	DT	MR	Recreational Purple Sea Urchin (Emergency)	29.11		EE 11/7																
	MR	DT	MR	Recreational Purple Sea Urchin (Emergency) (1st 90-day extension)	29.11					EE 2/5													
	MR	DT	MR	Recreational Purple Sea Urchin (Regular Rulemaking)	29.06		D				A			E 5/1									
*	OA	SF/CC	MR	Sheephead Fillet	27.65(b)		D			A							E 7/1						
	MR	JS	WLB	Mammal Hunting (Annual), if needed	362, 364, 364.1			N		D		A		V			E 7/1		R				
	MR	JS	LED	Archery Equipment and Crossbow	354(f)			N		D		A		V			E 7/1						
	MR	JS	WLB	Waterfowl (Annual)	502, 509			N		D		A		V			E 7/1		R				
	MR	JS	LED	Deer/Elk Tag Validation	708.6, 708.11			N		D		A					E 7/1						
	OA	SF/CC	FB	Klamath-Trinity Salmon Sport Fishing (Annual)	7.50(b)(91.1)			N		D			A	V			E 7/1		R				
	OA	SF/CC	FB	Central Valley Salmon Sport Fishing (Annual)	7.50(b)(5), (68), (156.5)			N		D			A	V			E 7/1		R				
	MR	JS/CC	WLB	Upland (Resident) Game Bird (Annual)	300					N		D				A				E 9/1			
*	MR	ST	MR	Recreational and Commercial Pacific Herring (Fishery Management Plan implementation)	27.60, 28.60, 28.62, 163, 163.1, 163.5, 164											D			A				

RULEMAKING SCHEDULE TO BE DETERMINED

*			MR	Kelp and Algae Harvest Management	165, 165.5, 704						V											
*				Possess Game / Process Into Food	TBD																	
*			OGC	American Zoological Association / Zoo and Aquarium Association	671.1																	
				Night Hunting in Gray Wolf Range	474																	
				Shellfish Aquaculture Best Management Practices	TBD		R															
*			ST	Fisher	670.5																	
*			ST	Humboldt Marten	670.5																	
*			ST	Northern Spotted Owl	670.5																	
*			ST	Tricolored Blackbird	670.5																	
*				Ban of Neonicotinoid Pesticides on Department Lands	TBD																	
*			MR	Commercial Pink Shrimp Trawl	120, 120.1, 120.2																	
*			MR	Ridgeback Prawn Incidental Take Allowance	120(e)																	

EM = Emergency, EE = Emergency Expires, E = Anticipated Effective Date (RED "X" = expedited OAL review), N = Notice Hearing, D = Discussion Hearing, A = Adoption Hearing, V = Vetting, R = Committee Recommendation, WRC = Wildlife Resources Committee, MRC = Marine Resources Committee, TC = Tribal Committee