

California Fish and Game Commission

Marine Resources Committee

Meeting Binder

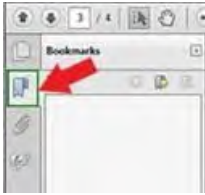


March 13, 2025

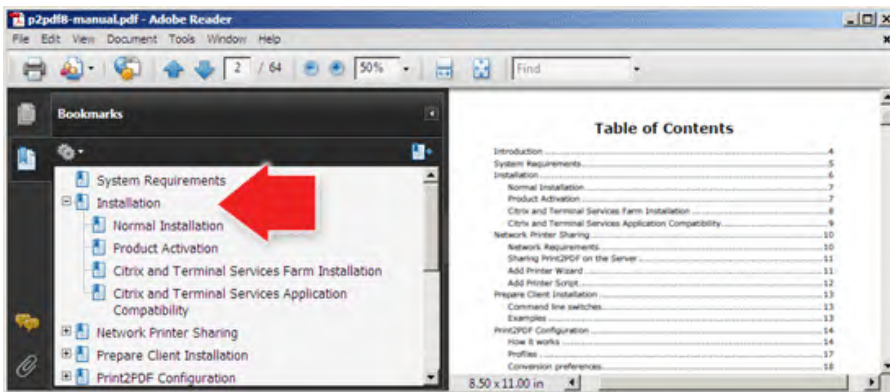
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
EASY GUIDE TO USING THE BINDER

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



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



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

Overview of California Fish and Game Commission Committee Meeting

- Welcome to this meeting of the Marine Resources Committee. The committee is comprised of up to two commissioners who co-chair each meeting; members are assigned by the Commission annually.
- 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 the Bagley-Keene Open Meeting Act. However, it is important to note that the committee cannot take action independent of the full Commission; instead, the committee makes recommendations to the Commission at regularly scheduled meetings.
- These proceedings are being recorded and will be posted to the Commission website or YouTube page for reference and archival purposes.
- Items may be heard in any order pursuant to the determination of the committee chair or co-chairs.
- As a general rule, requests for regulation changes need to be directed to the Commission and submitted on petition form, FGC 1, titled “Petition to the California Fish and Game Commission for Regulation Change.” However, at the committee’s discretion, it 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 an opportunity for everyone to contribute to the discussion about agenda items. If you wish to contribute to an agenda item, please follow these guidelines:
 1. Raise your hand and wait to be recognized by the chair or a co-chair.
 2. Please share your name and affiliation (if any).
 3. Time is limited; please be concise to give others time to speak.
 4. If several speakers have the same concerns or ideas to express, please appoint a group spokesperson.
 5. Generally, participants in person are called on first, followed by participants joining by zoom or phone.
 6. As a topic discussion evolves, we encourage participants to continue contributing to the dialogue.
 7. If speaking during the general public comment agenda item, 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 discusses that item).
- Please note the nearest emergency exit for use in the unlikely event of an emergency.
- For those joining us in the meeting room, restrooms are located _____.

Introductions for California Fish and Game Commission Marine Resources Committee Meeting

California Fish and Game Commissioners

Eric Sklar MRC Co-chair (Saint Helena)
Samantha Murray MRC Co-chair (La Jolla)

Commission Staff

Melissa Miller-Henson Executive Director
Susan Ashcraft Marine Advisor
Kelsey Leaird Staff Services Analyst
Kimi Rogers Environmental Scientist
Caroline Newell Sea Grant State Fellow
David Haug (zoom) Regulatory Analyst

California Department of Fish and Wildlife

Eric Kord Assistant Chief, Marine Enforcement Division
Craig Shuman Regional Manager, Marine Region
Randy Lovell State Aquaculture Coordinator
Joanna Grebel Environmental Program Manager, Invertebrate Program, Marine Region
Claire Waggoner Environmental Program Manager, Marine Habitat Conservation Program, Marine Region
Danny Lengning Captain, Law Enforcement Division

Invited Guests

Staci Lewis Marine Protected Areas Network Program Manager, California Ocean Protection Council

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

Will McClintock, and Abby Meyer, from National Center for Ecological Analysis and Synthesis at University of California, Santa Barbara

Commissioners

Erika Zavaleta, President
Santa Cruz

Samantha Murray, Vice President
La Jolla

Jacque Hostler-Carmesin, Member
McKinleyville

Eric Sklar, Member
Saint Helena

Darius W. Anderson, Member
Kenwood

STATE OF CALIFORNIA
Gavin Newsom, Governor

Fish and Game Commission



*Wildlife Heritage and Conservation
Since 1870*

Executive Director

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www.fgc.ca.gov

Marine Resources Committee

Committee Co-chairs: Commissioner Sklar and Commissioner Murray

Meeting Agenda

March 13, 2025; 9:00 a.m.

In Person

**Natural Resources Headquarters Building
715 P Street, Second Floor
Sacramento, CA 95814**

and

Zoom and Phone

To participate in the meeting remotely, you may join the webinar directly at <https://wildlife-ca.gov.zoom.us/j/86247899121>. For complete instructions on how to join via Zoom or telephone, [click here](#) or visit www.fgc.ca.gov/meetings/2025.

- Notes:**
- (1) See important meeting deadlines and procedures, including written public comment deadlines, starting on page 6.
 - (2) Except as indicated, the California Department of Fish Wildlife is identified as Department.
 - (3) 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**

Discussion and Action Items

- 2. Commercial coonstripe shrimp fishery**
Receive input and discuss potential regulation changes for a regular rulemaking following the Commission's adoption of emergency regulations in February 2025.

3. Marine aquaculture and state water bottom leases

(A) ***Application for new aquaculture lease***

Presentation and initial public vetting of Santa Barbara Sea Ranch, Inc. application for a state water bottom lease for aquaculture purposes offshore Santa Barbara County, consistent with the Commission's enhanced leasing process.

(B) ***Status of existing leases***

Receive Department and Commission staff update on existing leases and pending requests under review.

4. Red abalone recovery

(A) ***Risk tolerance for reopening any harvest***

Discuss risk tolerance when considering limited harvest opportunities for red abalone in the context of statewide recovery planning

(B) ***Recreational fishery closure***

Discuss extension of the recreational red abalone fishery closure beyond the current sunset date of April 1, 2026, and potential committee recommendation

Updates and Administrative Items

5. Staff and agency updates

This item provides updates from staff and other agencies, including progress on work plan topics as requested by the Commission. To promote meeting efficiency, the Committee prefers written updates. Public discussion may occur at the Committee's discretion if time allows.

(A) ***Department***

I. Law Enforcement Division: Marine protected area (MPA) network enforcement statistics report for 2024

II. Marine Region

a. MPA regulation change petitions – Proposed process/timeline for evaluating and developing recommendations for MPA petitions in bin 2

(B) ***California Ocean Protection Council***

I. General updates

II. Demonstration of the open-sourced *SeaSketch California* mapping platform, updated to support public review of petitions proposing changes to the California MPA network

(C) ***Commission staff***

I. Commission Coastal Fishing Communities Policy implementation

6. Future agenda items

Review work plan agenda topics and timeline, and identify any potential new agenda topics for Commission consideration.

General Public Comment

7. General public comment for items not on the agenda

Receive public comment regarding topics within the Commission's authority that are not included on the agenda.

Note: 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].

Adjourn

California Fish and Game Commission 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. All Commission meetings will include a webinar/teleconference option for attendance and every effort will be made to ensure that committee meetings include the same.

Meeting Date	Commission Meeting	Committee Meeting
April 15, 2025		Tribal California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814
April 16-17, 2025	Sacramento area	
May 14, 2025	Teleconference Trinidad, Sonoma, Sacramento, Santa Cruz, and La Jolla	
May 15, 2025		Wildlife Resources California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814
June 18-19, 2025	Sacramento area	
July 17, 2025		Marine Resources Sacramento area
August 12, 2025		Tribal Sacramento area
August 13-14, 2025	Sacramento area	
September 11, 2025		Wildlife Resources California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814
October 8-9, 2025	Sacramento area	
November 6, 2025		Marine Resources Sacramento area
December 9, 2025		Tribal Sacramento area
December 10-11, 2025	Sacramento area	

Other Meetings of Interest

Association of Fish and Wildlife Agencies

- September 21-24, 2025 – Tucson, AZ

Pacific Fishery Management Council

- April 9-15, 2025 – San Jose, CA
- June 12-18, 2025 – Rohnert Park, CA
- September 18-24, 2025 – Spokane, WA
- November 13-19, 2025 – Costa Mesa, CA

Pacific Flyway Council

- September 2025 – Date and location TBD

Wildlife Conservation Board

- May 22, 2025 – Sacramento, CA
- August 28, 2025 – Sacramento, CA
- November 20, 2025 – Sacramento, CA

Western Association of Fish and Wildlife Agencies

- June 2-6, 2025 – Provo, UT
- December 10-12, 2025 – Henderson, NV

Important Commission Meeting Procedures Information

Welcome to a Meeting of the California Fish and Game Commission's Marine Resources Committee

The Committee is composed of and chaired by up to two Commissioners; these assignments are made by the Commission each year. The goal of the Committee is to allow greater time to investigate topics before the Commission than would otherwise be possible. Committee meetings are less formal in nature and provide additional access to commissioners. The Committee does not take action independent of the Commission; instead, the Committee makes recommendations to the full Commission at regularly scheduled Commission meetings.

The Commission's goal is preserving our outdoor heritage and conserving 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 as possible.

Persons with Disabilities

Persons with disabilities needing reasonable accommodation to participate in public meetings or other Commission activities are invited to contact the Department's Civil Rights Office (CRO) at civilrights@wildlife.ca.gov. Accommodation requests for facility and/or meeting accessibility and requests for American Sign Language interpreters should be submitted at least two weeks prior to the event. Requests for real-time captioners should be submitted at least four weeks prior to the event. These timeframes are to help ensure that the requested accommodation is met. For those joining by Zoom, you may be able to enable closed-captioning via the Zoom platform. If a request for an accommodation has been submitted but is no longer needed, please contact the CRO immediately.

Stay Informed

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

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, 715 P Street, 16th floor, 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 February 28, 2025**. Written comments received at the Commission office by this deadline will be made available to commissioners prior to the meeting.

The **Supplemental Comment Deadline** for this meeting is **noon on March 10, 2025**. Comments received by this deadline will be made available to commissioners at the meeting.

After these deadlines, written information may be delivered in person to the meeting; please bring **six** copies and provide them to staff during the relevant agenda item.

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

Regulation Changes

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 regulation change, please provide your comments during Commission business meetings, via email, or by delivering to the Commission office.

As a general rule, requests for regulatory change must be redirected to the full Commission and submitted on the required petition form, [FGC 1, Petition to the California Fish and Game Commission for Regulation Change](#). 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 contribute to the dialogue. If you wish to speak on an agenda item, please follow these guidelines:

- You will be given instructions during the meeting for how to be recognized by the Committee co-chair(s) to speak.
- If you have written information to share, please provide **six** copies to staff before you begin speaking.
- Once recognized, please begin by giving your name and affiliation (if any) and the number of people you represent.
- Time is limited; please keep your contributions concise so that everyone has an opportunity to speak.
- We encourage you to avoid repeating previous commentary. You may wish to appoint a spokesperson, or simply state you agree with a perspective already shared.
- If speaking during general public comment for items not on the agenda, the subject matter you present should not be related to any item on the current agenda (public discussion on agenda items will be heard at the time the Committee discusses that item). As a general rule, public comment 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 **Supplemental Comment Deadline** and approved by the Commission executive director before the meeting.

- Electronic presentations must be provided by email to fgc@fgc.ca.gov. If the presentation file is too large to send via email, contact staff to identify an alternative method for submitting the file.
- All electronic formats must be Windows PC compatible.
- If presenting at the in-person meeting location, we encourage you to bring a print copy of your presentation in case of technical difficulties.

Committee Staff Summary for March 13, 2025 MRC

2. Commercial Coonstripe Shrimp Fishery Management**Today's Item****Information** **Action**

Receive input and discuss potential long-term regulatory changes for a regular rulemaking following the Commission's adoption of emergency regulations in February 2025.

Summary of Previous/Future Actions

- | | |
|---|----------------------------|
| • Department notified Marine Resources Committee (MRC) of coonstripe shrimp fishery concern | November 6-7, 2024; MRC |
| • Commission approved emergency regulation to amend Section 180.15; referred topic to MRC | February 12-13, 2025 |
| • Today's update and discussion | March 13, 2025; MRC |
| • Discussion and potential MRC recommendation | July 17, 2025; MRC |
| • Notice hearing | TBD |

Background

The commercial fishery for coonstripe shrimp (*Pandalus danae*) is a small, open-access trap fishery that has recently experienced increased participation. Prior to February 2025, there were no limits on the amount of gear or lines deployed. However, after two humpback whale entanglements in 2024 were attributed to coonstripe shrimp trap gear, the Commission took emergency action at its February meeting to establish limits.

The Department initially brought this topic to the attention of MRC at its November 2024 meeting. The Department highlighted concerns related to the recent whale entanglements and outlined plans to hold two public meetings with the fleet to gather input for developing both near-term and longer-term regulations. To ensure implementation before the next fishery season began (May 1, 2025), near-term regulations would require emergency action. Based upon fleet input, the Department proposed and the Commission adopted emergency regulations in February. The Commission also referred the commercial coonstripe shrimp topic to MRC to explore potential management measures for a future standard rulemaking. For further background, refer to exhibits 1-3.

The adopted emergency amendments to commercial coonstripe shrimp regulations (in Section 180.15, as detailed in exhibits 2 and 3) included:

- Established a management boundary at the Sonoma/Mendocino county border, northward to the California Oregon border and southward to the United States/Mexico border.
- Established northern fishery limits of 180 vertical lines, 15 traps per string, and a maximum depth of 30 fathoms (180 feet).
- Established southern fishery limits of 60 vertical lines, 40 traps per string, and no maximum depth limit.
- Defined the terms "groundline" and "vertical line."

Committee Staff Summary for March 13, 2025 MRC

- Clarified how and when to contact Department law enforcement regarding compliance with regulations.
- Repealed the existing control date of November 1, 2001 and established a new control date of February 13, 2025.

The emergency regulations will be effective before the commercial fishing season opens on May 1, and will serve as a temporary solution to immediately curb potential increases in gear and participation until long-term management measures can be developed.

Today, the Department will provide a verbal update on its ongoing efforts to collaboratively explore long-term management options with the fleet, building upon the emergency measures for the commercial coonstripe fishery. The Department will bring to the July MRC meeting options for discussion and potential MRC recommendation.

Significant Public Comments (N/A)

Recommendation (N/A)

Exhibits

1. [Staff summary from February 12-13, 2025 Commission meeting, Agenda Item 18 \(for background purposes only\)](#)
2. [Emergency statement and informative digest, dated January 6, 2025 \(for background purposes only\)](#)
3. [Department's February 2025 presentation regarding the recommended emergency regulation \(for background purposes only\)](#)

Committee Direction/Recommendation (N/A)

Committee Staff Summary for March 13, 2025 MRC

3A. Application for New Aquaculture Lease**Today's Item****Information** ☒**Action** ☐

Presentation and initial public vetting of Santa Barbara Sea Ranch, Inc. (SBSR) application for a state water bottom lease for aquaculture purposes offshore Santa Barbara County, consistent with the Commission's enhanced leasing process.

Summary of Previous/Future Actions

- Received SBSR's application for a state water bottom lease for aquaculture purposes June 2018
- Determined the application was in the public's interest August 2018
- SBSR developed and submitted iterations of a draft initial study to staff, and staff distributed to agencies for review December 2019 – April 2021
- Marine Resources Committee (MRC) developed and Commission approved a new public interest determination criteria and evaluation framework and an enhanced leasing process April 2022-August 2023
- **Today's presentation and initial public vetting of SBSR's proposed aquaculture project** **March 13, 2025; MRC**
- Presentation to the Tribal Committee (TC) and public vetting of SBSR's proposed aquaculture project April 15, 2025; TC
- Initiate California Environmental Quality Act (CEQA) environmental review process, including public scoping and tribal notification To be determined

Background

The Commission has the authority to lease state water bottoms for aquaculture in marine waters of the State, under terms agreed upon between the Commission and the lessee (California Fish and Game Code sections 15400 and 15405). Prior to lease approval, the Commission must determine that the lease is in the public interest (Fish and Game Code subdivision 15400(a)).

SBSR Application and Timeline Overview

At its June 2018 meeting, the Commission received an application from David Willitt of SBSR to lease 176 acres of state water bottom in the Santa Barbara Channel. The proposed lease area is located approximately five miles west of Santa Barbara Harbor, and within one mile of shore (Exhibit 1). The potential site would be used to cultivate bivalves. The Commission referred the application to the Department for review and recommendation, beginning with an evaluation of the public interest.

It is important to note that this application preceded the Commission's decision to pause lease application processing to develop enhanced public interest criteria and procedures.

Committee Staff Summary for March 13, 2025 MRC

Public Interest Determination and Review

At its August 2018 meeting, the Commission received a Department evaluation and recommendation for a public interest finding for the SBSR lease application. Based on the Department's evaluation and public input, the Commission found that the proposed lease area was available and in the public interest (Exhibit 1). Public input included letters stating that the location would avoid conflicts with commercial fishing grounds for lobster trap and trawl fisheries (Exhibit 2).

Following the public interest finding, staff initiated public notice, outreach, and the preliminary steps of environmental review under CEQA. To date, in addition to the public interest finding, several steps were taken:

- December 2019: Commission staff received a draft initial study from SBSR, including habitat and water quality surveys, and sent the document to three state agencies for an informal initial review; feedback from the review was shared with SBSR.
- March 2021: Commission staff received a revised draft initial study, which was distributed to trustee and responsible agencies for review in April 2021.
- Summer 2021: Based upon comments from trustee and responsible agencies — also shared with SBSR — the Commission executive director notified SBSR that an environmental impact report (EIR) under CEQA is necessary.

Following the executive director's guidance, SBSR shared with staff that it intended to seek funding and a consultant to support the EIR process. In August 2024, SBSR notified staff and the Department that it had secured a consultant and wished to resume the environmental review and leasing process; staff confirmed the need for an EIR. Staff sent a letter to SBSR on March 7 formally confirming the necessity of an EIR and providing guidance for developing a draft notice of preparation to resume the CEQA process.

Integration into Enhanced Leasing Process

In August 2023, the Commission approved an [enhanced leasing process for new state water bottom lease applications](#). The Commission directed staff to integrate existing lease applications — including the SBSR application — into the enhanced leasing process. The process includes interagency coordination meeting(s) (the first one held in December 2024 for SBSR), initial vetting at MRC and TC meetings, and continuing MRC and TC discussions as the application review and CEQA process develop.

While the enhanced leasing process shifts the public interest determination to a later stage, the change does not apply to the SBSR application, which already has a public interest finding. As such, for this application there is no staff evaluation for "requirements" criteria; however, the SBSR application had to meet legal requirements to receive the public interest determination in 2018. The one exception from the "requirements" criteria is conferring with the Native American Heritage Commission regarding cultural resources; staff is currently undertaking this step. The public interest criteria document and considerations contained within it can still be a resource for public input at MRC meetings, pre-CEQA scoping hearing(s), and later to the Commission as it considers a decision.

Committee Staff Summary for March 13, 2025 MRC

Initial Public Vetting and Next Steps

Today, staff will provide an overview of the SBSR lease application, its integration into the Commission's enhanced leasing process, and upcoming process and evaluation steps (Exhibit 3). Following staff's overview, SBSR will present its proposed project (Exhibit 4). Today offers MRC an opportunity to re-engage with the SBSR application, invite initial public input, and provide feedback to help guide SBSR's environmental review.

Discussions today and during the April TC meeting will assist SBSR in embarking on the CEQA environmental review process, which will include staff and Department review, review by other state and federal agencies, and ongoing public engagement (including additional MRC and TC discussions) before the Commission is scheduled to consider the lease request and supporting evaluation and input. While staff cannot provide a specific timeline for future action, the public will be notified well in advance of the Commission considering whether to approve the lease.

Significant Public Comments

A Santa Barbara aquaculture operator expresses concern about the proposed lease application and recommends that the proposed lease area footprint be reduced in size, operations be moved further away from the commenter's own operations, and any approval be for a shorter duration. The aquaculture operator is concerned that the lease as proposed would inhibit expansion and development of their own lease area, referring to a pending lease amendment request submitted to the Commission several years ago to expand the lease area. They express concern about current Department mechanisms to review applications and the cost of permitting causing more intense farming practices to facilitate a reasonable return on investment, leading to potential environmental harm (Exhibit 5).

Recommendation (N/A)**Exhibits**

1. [Staff summary and associated meeting materials from August 22-23, 2018 Commission meeting, Agenda Item 10, regarding a public interest determination \(for background purposes only\)](#)
2. [SBSR's revised project description, received December 5, 2024](#)
3. [Staff presentation](#)
4. [SBSR's presentation](#)
5. [Letter from Bernard Friedman, Founder, Santa Barbara Mariculture, received February 28, 2025](#)

Committee Direction/Recommendation (N/A)

Committee Staff Summary for March 13, 2025

3B. Marine Aquaculture: Status of Existing Leases**Today's Item**Information Action

Receive Department and Commission staff update on existing state water bottom leases and pending requests under review.

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

The Commission is the lessor of 17 active state water bottom leases issued for the purpose of marine shellfish and seaweed aquaculture. Leased areas are located in Tomales Bay, Morro Bay, and off the Santa Barbara County coast. Close coordination and problem-solving is required between staff and the Department, the latter supporting administration of leases and associated natural resource management where leased areas are located. In recent years, the Department and/or staff have provided an annual update on leases and pending leaseholder requests currently under review.

Pending Lease Actions

Staff and the Department meet bi-weekly to review and advance pending lease action requests. Currently, there are 15 lease action requests: one to transfer lease assignment; four to expand, reconcile, and/or modify lease boundaries; six to authorize the culturing of additional species; one to add/reinstate previously-authorized culture methods; and three applications for new leases, one of which is on hold. The reviews require multiple successive steps and, while some delays have ensued for various reasons, staff continues to diligently pursue completing administrative actions that do not require Commission approval, and to provide recommendations for those that require Commission action. Compliance with the California Environmental Quality Act (CEQA) for each individual request, for which the lessee or applicant bears significant responsibility, continues to be one of the principle drivers of timeline and workload.

In addition to advancing the 15 requests, staff is actively engaged in administrative oversight and leaseholder communications, where appropriate, to ensure leaseholders are in compliance with individual leases. Collaborating Commission and Department staffs continue to forge improved internal communications, coordination, and processes.

Implementing the Enhanced Leasing Process

Following the Commission's approval in August 2023 of the enhanced lease application process, and the public interest criteria and determination framework, Commission and Department staffs have actively collaborated to translate these tools into actionable steps. Efforts have focused on strengthening interagency coordination through the new guidelines by fostering improved collaboration and communication among state and federal agencies of jurisdiction and with applicants.

Committee Staff Summary for March 13, 2025

Two Lease Applications

Throughout 2024 and early 2025, Commission and Department staffs progressed two state water bottom lease applications, from San Andreas Shellfish Company and Santa Barbara Sea Ranch, Inc. While both applications were received prior to development of the enhanced lease application process, they are being integrated into the process as appropriate and have included multiple staff-led steps, such as:

- Coordinating and facilitating interagency meetings with regional state and federal agency representatives;
- proactively meeting with applicants to develop and review next steps in the process;
- supporting the initial vetting of applications at Marine Resources Committee and Tribal Committee meetings (additional committee discussions will occur throughout the application process);
- reviewing public input; and
- initiating environmental review under CEQA and additional reviews necessary for a public interest evaluation.

Commission Grants Lease Assignment Request

In February 2025, the Commission approved Cove Mussel Co., LLC's request to assign the lease for State Water Bottom M-430-06, in Tomales Bay, to Starbird Mariculture Incorporated for the remaining two years of the lease. The approval included amended lease terms to address marine debris concerns related to aquaculture operations, review by agency partners, and review by Starbird Mariculture Incorporated. The lease amendment formalizing the assignment will be executed after the required financial surety agreement is in place (currently under development).

Today's Update

Today, the committee will receive a Department presentation covering state water bottom leases, pending lease actions, and implementing the enhanced leasing process (Exhibit 1). Looking ahead, staff and the Department will continue to advance pending lease actions and consider ways to improve efficiency in advancing pending and new requests, including through enhanced interagency coordination.

Significant Public Comments (N/A)

Recommendation (N/A)

Exhibits

1. [Department presentation](#)

Committee Direction/Recommendation (N/A)

Committee Staff Summary for March 13, 2025

4. Red Abalone Recovery

Today's Item	Information <input type="checkbox"/>	Action <input checked="" type="checkbox"/>
(A) Discuss risk tolerance for considering limited harvest opportunities for red abalone in the context of statewide recovery planning; and		
(B) Discuss an extension of the recreational red abalone fishery closure beyond the current sunset date of April 1, 2026, and a potential Marine Resources Committee (MRC) recommendation.		

Summary of Previous/Future Actions

(A) Risk tolerance for reopening limited harvest		
• Closed the commercial abalone fishery in southern California		1997
• Adopted <i>Abalone Recovery and Management Plan</i> (ARMP);		December 2005
• Collaborative process for considering potential San Miguel Island red abalone fishery, per Commission direction		2006-2009
• Denied petition 2021-001 to open commercial red abalone fishery at San Miguel Island		October 14, 2021
• Received petition 2024-02 to reconsider San Miguel Island fishery or approve a test fishery via experimental fishing permit		April 17-18, 2024
• Denied Petition 2024-02; referred discussion to MRC about harvest risk tolerance prior to potential experimental fishing permit applications for harvest		June 19-20, 2024
• Risk tolerance agenda item postponed		November 6-7, 2024; MRC
• Today: Discuss risk tolerance for reopening limited harvest		March 13, 2025; MRC
(B) Recreational red abalone fishery closure		
• Adopted one-year recreational fishery closure (effective 2018 season)		December 7, 2017
• Extended closure for two years		December 12, 2018
• Extended closure for five years		December 9, 2020
• Today: Discuss fishery closure extension and potential MRC recommendation		March 13, 2025; MRC
• Fishery automatically reopens without new regulatory action		April 1, 2026

Committee Staff Summary for March 13, 2025

Background

California's abalone populations have experienced significant declines, leading to the closure of commercial fisheries and, more recently, the recreational fishery. Factors have included environmental conditions, disease, and fishing pressure. Despite these closures, a strong passion for these fisheries, a desire to actively monitor and aid abalone recovery, and the aspiration to reinstate harvests, even at small scales, has persisted since the commercial closure in 1997 and the recreational closure in 2018.

Commercial Abalone Fishery

The commercial abalone fishery was closed by the state in 1997, followed by adoption of "Abalone Recovery and Management Plan" (ARMP) in 2005 to guide recovery and management efforts statewide.

Since adoption of the ARMP, a localized population of red abalone at San Miguel Island has been an area of interest for a potential limited commercial fishery. From 2006-2009, a concerted collaborative evaluation process culminated in a Commission decision not to approve a fishery due to concerns over the health and abundance of the San Miguel Island population, and uncertainty over its ability to sustain harvest.

In 2021, the Commission received and subsequently denied a regulation change petition to reopen a red abalone fishery at San Miguel Island; the petitioner submitted supporting video documentation. In 2024, petition 2024-02 was submitted, requesting to open a San Miguel Island red abalone fishery for both recreational and conditioned commercial take; the petition proposed achieving this either through regulations or via an experimental fishing permit (EFP) with required data collection. In June 2024, the Commission denied the regulatory portion of petition 2024-02; however, in response to the EFP option, the Commission directed MRC to initiate a broader discussion on risk tolerance concerning any abalone harvest, including through EFPs, in the context of the overarching statewide abalone recovery efforts.

Recreational Red Abalone Fishery

The recreational red abalone fishery in northern California, once a thriving and beloved resource, was closed by the Commission in late 2017; this action was taken in response to Department findings of a dramatic, large-scale decline of red abalone populations attributed to a confluence of factors leading to severe starvation. The fishery closure has been extended a total of eight years following the original closure due to ongoing poor conditions (see Exhibit 1 for detailed background). The current recreational fishery closure is set to expire on April 1, 2026, meaning that, if no further action is taken, the fishery will automatically reopen under the previous harvest regulations in place prior to the limited-term closure

Today's Discussion

Today's discussion will focus on two aspects of red abalone recovery and fishery considerations: (A) Risk tolerance for limited harvest opportunities, and (B) considering the potential extension of the recreational fishery closure.

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(A) *Risk tolerance for limited harvest opportunities for red abalone in the context of statewide recovery planning*

The Department will provide context for discussion by presenting information on the commercial abalone fishery catch history, the current status of California abalone species, recreational red abalone fishery and density trends before and after the 2018 closure, San Miguel Island abalone and kelp status trends, and corresponding recommendations and rationale (Exhibit 2).

(B) *Extension of the recreational fishery closure (due to sunset April 1, 2026) and potential committee recommendation.*

The Department will present the history of recreational red abalone fishery closures, an assessment of current red abalone stock abundance based on recent surveys, updates on key environmental factors (bull kelp, purple sea urchin, and *Pycnopodia* sea star populations), and its recommendation (Exhibit 3).

Due to the continuing severe depletion of the red abalone stock and the complex interplay of environmental factors, predicting the timing and extent of stock recovery remains highly uncertain. Therefore, the Department does not recommend establishing a new, predetermined, future sunset date for a continuing closure, regardless of whether the time frame is measured in years or decades. Furthermore, a return to previous harvest regulations (which occurs upon closure sunset) would no longer be sustainable for any future fishery, particularly in its early stages after recovery. Instead, the Department recommends implementing an indefinite moratorium, which best reflects the necessary precaution and focus on stock recovery.

The Department's presentation will provide essential context for the current situation and articulate the rationale behind its recommendation.

For both (A) and (B), staff acknowledges that transitioning to an indefinite moratorium on recreational red abalone fishing, and maintaining the current state of no new harvest, including experimental fisheries, will likely be a significant concern for fishing communities and former fishermen given the historical importance of this fishery and the ongoing economic impacts. The Department's presentation and subsequent discussion will offer valuable opportunities to enhance understanding of the rationale underpinning the Department's recommendation, to hear concerns from stakeholders, particularly former fishermen, and to reinforce and build on the shared commitment to collaborative recovery efforts among fishermen, other stakeholders, the Department, and the Commission.

Significant Public Comments

1. A coalition of five organizations, representing the public interest, marine science, environmental justice, and recreational/subsistence fishing interests, seeks to work with the Department and Commission to ensure the resilience of California's marine species and resources to increasing stressors. They advocate for a precautionary approach to red abalone recovery, urging MRC to prioritize scientific evaluation to ensure any potential harvest will not impede population recovery, acknowledge environmental stressors such as climate change and ocean acidification. and require

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robust evidence of recovery before reopening any harvest to ensure long-term population stability and sustainable future harvests (Exhibit 4).

2. A commercial abalone diver advocate, and petitioner for petition 2024-02, reflects on the historical context of the 2005 ARMP development and adoption meetings, advocating for the Commission to reinstate similar practices of ample speaker time and equitable conduct. They express concerns regarding the lack of current surveys and canceled research cruises, and frustration that their video evidence of healthy abalone populations at San Miguel Island was not duly considered. Implicit in their comments regarding past commitments and present conditions is a desire to see the commercial fishery reopened, along with an assertion that the tools are available to facilitate this change (Exhibit 5).

Recommendation

Commission staff: (A) Support the Department recommendations to focus on species recovery, the KRMP process, and partnerships for abalone monitoring and recovery. (B) Support the Department recommendation to continue the recreational red abalone closure through a rulemaking to commence in August 2025 and, in lieu of identifying a new sunset date, to enact a moratorium for an indefinite period of time.

Department: (A) Focus efforts on species recovery, not harvest opportunities; continue to monitor the KRMP process; and build partnerships for abalone monitoring and recovery. (B) Continue the fishery closure and implement an indefinite moratorium by scheduling a rulemaking for notice in August 2025, discussion in October, and adoption in December.

Exhibits

1. [Staff summary from the August 2018 Commission meeting](#), Agenda Item 12, regarding red abalone (*for background purposes only*)
2. [Department presentation – \(A\) Risk tolerance for harvest](#)
3. [Department presentation – \(B\) Recreational fishery closure extension](#)
4. [Letter from Fish On, WILDCOAST, California Marine Sanctuary Foundation, Heal the Bay, and Environment California](#), received February 28, 2025
5. [Email from Steve Rebuck](#), received December 23, 2024

Committee Direction/Recommendation

Recommend the Commission support the Department to: (1) Prioritize a focus on species recovery, not harvest opportunities; (2) continue to monitor the kelp restoration and management plan development process; and (3) build partnerships for abalone monitoring and recovery.

AND

Recommend the Commission schedule a rulemaking to commence in August 2025 to continue the recreational red abalone fishery closure by implementing an indefinite moratorium and/or _____.

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5. Staff and Agency Updates**Today's Item**Information Action

Receive updates from staff and other agencies, including the California Ocean Protection Council and the Department.

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

This is a standing agenda item for staff and agencies to provide an update on marine-related activities. Members of the public will have an opportunity to share thoughts and questions, although the level of in-meeting discussion will be at the discretion of the MRC co-chairs.

(A) Department**I. Law Enforcement Division (LED)**

LED will present an overview of 2024 marine protected area (MPA) network enforcement statistics (Exhibit 1).

II. Marine Region

Marine Region staff will present the Department's update on MPA Regulation change petitions.

- a. Proposed timeline and process for evaluation and recommendations for MPA petitions in bin 2.

The Department's presentation today (Exhibit 5) will share a draft timeline and process for evaluating the bin 2 MPA petitions between now and November, including the integration of amended petitions and development of recommendations. There are 15 petitions, 7 of which are anticipated to be amended, based on petitioner statements or submissions. To date, staff has received four amended petitions, with a submission deadline of March 14, 2025.

In February 2025 the Commission held an initial discussion regarding potential adaptation of the MRC petition review process, which could involve redirecting some or all petition evaluations and recommendations to a committee-style meeting of the full Commission. However, today's presentation will not speculate on or propose options regarding potential Commission decisions related to process (indicated by "TBD" in the presentation timeline to denote pending future Commission guidance).

In addition, Marine Region staff will provide updates on various topics, including:

- Future management advancements for the set gillnet fishery, focusing on electronic monitoring testing with funding approved by OPC this month (Exhibit 2); and
- a presentation of the Marine Region's "2024 By the Numbers" report (exhibits 3 and 4).

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(B) California Ocean Protection Council (OPC)

OPC staff will provide an update on topics of interest to the Commission, including:

- I. *Demonstration of the updated [SeaSketch California](#) mapping platform for reviewing MPA network petitions*

OPC funded the enhancement of the open-source SeaSketch California geospatial mapping platform; OPC staff will provide an orientation on the updated tool. Dr. Will McClintock, Senior Fellow at the National Center for Ecological Analysis and Synthesis at the University of California Santa Barbara, and director of the lab that develops and implements the platform (www.seasketch.org), will demonstrate its functionality and utility for reviewing MPA petitions spatially, using several data layers. The platform is designed to facilitate public review and evaluation of current petitions proposing MPA network modifications.

(C) Commission Staff

- I. *Commission Coastal Fishing Communities (CFC) Policy – Implementation*

Throughout the last year, the Commission's 2024-25 Sea Grant state fellow, Devon Rossi, led efforts to further explore implementation of the CFC policy by initiating connections with new community voices and fostering collaboration with partners. Devon's final day was February 24. Prior to leaving, she gave a presentation at the seventh National Working Waterfront Network (NWWN) Conference. This national event facilitates connections and showcases initiatives that support working waterfronts, providing an excellent opportunity to introduce the policy and invite other organizations to engage with the Commission or leverage the policy in their own efforts. Her presentation showcased the policy's goals through a user-friendly, GIS-based, and web-based tool ([CFC Project StoryMap](#)) that Devon developed during her fellowship with the Commission. The StoryMap serves as an easy-to-follow, visually-engaging guide, outlining the CFC Policy's development, its three policy strategies, and implementation plans. Staff hopes fishing communities will utilize the tool to enhance their capacity to engage with decision-makers and ensure their voices are heard. Staff is working to publish the StoryMap on the [Commission's updated CFC Project webpage](#) for easy access.

Staff is also actively continuing one-on-one conversations with numerous fishing community members, organizations, and partners to explore CFC policy implementation and opportunities for collaborative support. The Commission's new 2025-2026 California Sea Grant state fellow, Caroline Newell, now assumes the lead on these efforts.

Significant Public Comments

- The petitioner for petition 2023-15MPA advocates for a standardized evaluation process for all MPA petitions using the Marine Life Protection Act (MLPA) Master Plan for MPAs framework. They emphasize the master plan's measurable regional objectives, which

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are structured under the six goals of the MLPA and they cite support from various organizations that have endorsed the master plan's adaptive management process. To demonstrate the practical application of this framework, they analyze their own petition (2023-15MPA, Northern Channel Islands) against each applicable south coast regional objective, asserting that this analysis demonstrates the petition's alignment with master plan goals (Exhibit 6).

- An eight-organization coalition urges an enhanced MPA adaptive management process, focusing on three key recommendations: (1) Clearer processes (outreach expectations, evaluation schedule, and evaluation criteria and weighting); (2) defined Commission/MRC roles (maintaining MRC venue, and set process for selecting which MPA items to send to the Commission versus MRC); and (3) integration of current MPA science into decision-making, including cited studies on environmental justice, benefits of large MPA networks, and ecosystem resilience (Exhibit 7).

Recommendation (N/A)**Exhibits**

1. Department Law Enforcement Division presentation (*to be posted separately*)
2. [OPC staff report for Action Item 9, Consideration and Approval of Disbursement of Funds to Advance Climate-Ready Fisheries Management, March 3, 2025 OPC meeting](#)
3. [Department presentation: 2024 Marine Region By the Numbers](#)
4. [Department report: "2024 Marine Region By the Numbers"](#)
5. [Department presentation: MPA regulation change petitions timeline and process update](#)
6. [Letter from Blake Hermann, petitioner, petition 2023-15MPA, received February 26, 2025](#)
7. [Letter from Heal the Bay, Environmental Action Committee of West Marin, Fish On, California Marine Sanctuary Foundation, Azul, Wildcoast, Orange County Coastkeeper, Natural Resource Defense Council, and Environment California, received February 28, 2025](#)

Committee Direction/Recommendation (N/A)

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Recommendation

Commission staff: Review the list of topics identified for the July 2025 MRC meeting, determine if topics should be revised, or if any additional topics on the work plan should be scheduled for July 2025. Provide direction on any other additions or removals.

Exhibits

1. [MRC work plan, updated February 18, 2025.](#)

Committee Direction/Recommendation

The Marine Resources Committee recommends that the Commission approve changes to the Committee work plan in Exhibit 1 to: _____.

Committee Staff Summary for March 13, 2025 MRC

7. General Public Comment**Today's Item****Information** **Action**

Receive public comment regarding topics that are not included on the agenda.

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

The Marine Resources Committee (MRC) receives two types of correspondence or comment under general public comment: (1) requests for MRC to consider new topics and (2) informational items. As a general rule, requests for a regulation change must be submitted to the Commission on petition form FGC 1, *Petition to the California Fish and Game Commission for Regulation Change*. However, MRC may, at its discretion, request that staff follow up on items of potential interest for possible recommendation to the Commission.

Significant Public Comments

1. A joint letter from the petitioners for petitions 2023-28MPA and 2023-29MPA provide an update on their extensive outreach efforts. Since January 2024, they have conducted over 100 meetings, engaging with tribal members, stakeholders, elected officials, and community members. They plan to continue outreach and submit amended petitions reflecting these discussions (Exhibit 1).
2. A founder of a kelp restoration non-governmental organization and MPA petitioner expresses frustration about the slow progress on their petition intended to support kelp restoration. They announce their intention to proceed with urchin removals to support kelp restoration efforts independently within existing regulations (Exhibit 2).
3. A San Anselmo resident opposes the proposed San Andreas Shellfish aquaculture lease in Tomales Bay, due to environmental concerns, including potential impacts to shorebirds, eelgrass, harbor seals, and coho salmon, and concerns related to introduction of invasive species (Exhibit 3).

Recommendation (N/A)**Exhibits**

1. [Joint letter from Natural Resources Defense Council, Santa Ynez Band of Chumash Indians, and Environmental Defense Center, petitioners, petition 2023-28MPA and petition 2023-29MPA, received February 28, 2025](#)
2. [Email from Keith Rootsart, Founder, Giant Giant Kelp Restoration Project, and petitioner for petition 2023-23MPA-AM1, received February 28, 2025](#)
3. [Email from Nicole Heslip, received February 28, 2025](#)

Committee Direction/Recommendation (N/A)

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19. Commercial Take of Coonstripe Shrimp Emergency

Today's Item

Information

Action

Consider adopting emergency regulations for the commercial take of coonstripe shrimp.

Summary of Previous/Future Actions

- **Today discuss and consider adopting emergency regulations** **February 12-13, 2025**

Background

Commission regulations in Section 180.15 authorize commercial take of coonstripe for any owner of a vessel that has been issued a coonstripe shrimp vessel trap permit for that vessel. Coonstripe shrimp (*Pandalus danae*) may be caught in longline trap gear, where traps are connected to a groundline anchored at each end, also referred to as a "string". Typically, a string contains 10-20 traps, but some can have up to 40 traps. Small shrimp and other bycatch can escape the trap through the mesh, typically 0.5 inches. Trap string lengths vary in different areas of the state to minimize gear conflicts and optimize placement on suitable habitat.

Participants in the coonstripe shrimp fishery also engage in other California commercial fisheries, especially Dungeness crab, salmon and groundfish, which have undergone recent closures or increased limitations. In response, participation in the coonstripe shrimp fishery has begun to increase as opportunities have declined in the other fisheries. More fishermen are anticipated to redirect their fishing effort to enter the coonstripe fishery due to the changes in fishing opportunity.

Increased participation in the coonstripe shrimp trap fishery elevates the risk of marine life entanglement, primarily by increasing the amount of trap gear in the water. More participants mean more vertical lines and a broader spatial distribution of fishing activity during the peak whale migration period, raising the chances of marine animals encountering and becoming entangled in the gear. Animals such as whales can become entangled when they make contact with the lines and become weighed down by the heavy metal traps, leading to injury or death.

Coonstripe fishing gear has been implicated in a total of three humpback whale entanglements: one in 2017 near Crescent City, and two in 2024 near San Francisco. Humpback whales are protected under the federal Endangered Species Act (ESA) and the federal Marine Mammal Protection Act (MMPA). The recent entanglements hinder progress toward California's goal of zero entanglement mortality and are in direct conflict with the federal ESA and MMPA.

Under current regulations, there are no limits to the number of fishery participants or amount of gear that can be deployed. The Department is requesting that the Commission amend Section 180.15 to reduce marine life entanglement risk for the coonstripe shrimp commercial fishery. The requested emergency regulatory action will limit additional gear usage by current fishery participants and allow the Commission to limit future participation in the fishery to reduce marine life entanglement risk; see the emergency statement in Exhibit 2 for a summary

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of the conditions that constitute the emergency. Emergency action is needed to implement the regulations before the start of the next season on May 1, 2025.

The requested regulatory amendments (detailed in exhibits 2 and 3) would:

- Update how and when to contact Department law enforcement regarding compliance with regulations;
- Define the terms “groundline” and “vertical line”;
- Establish a management boundary at the Sonoma/Mendocino county border northward to the California Oregon border, and southward to the United States/Mexico border;
- Impose a limit on the number traps per ground line;
- Impose a limit on the number of vertical lines per vessel;
- Establish a maximum depth limit of 30 fathoms for the northern fishery; and,
- Repeal the existing control date of November 1, 2001 and establish a new control date of February 13, 2025.

Today, the Department will present an overview of the fishery, proposed emergency measures, and potential for a standard rulemaking (Exhibit 5).

Significant Public Comments (N/A)

Recommendation

Commission staff: Adopt the proposed emergency regulation for the commercial take of coonstripe shrimp as recommended by the Department.

Department: Adopt the emergency regulation as proposed in exhibits 2 and 3.

Exhibits

1. Department memo, received January 24, 2025
2. Draft emergency statement and informative digest, dated January 6, 2025
3. Draft proposed regulatory language
4. Draft economic and fiscal impact statement (STD 399)
5. Department presentation

Motion

Moved by _____ and seconded by _____ that the Commission finds, pursuant to Section 399 of the California Fish and Game Code, that adopting the proposed emergency regulation is necessary for the immediate conservation, preservation, or protection of birds, mammals, fish, amphibians, or reptiles, including, but not limited to, their nests or eggs.

The Commission further determines, pursuant to Section 11346.1 of the Government Code, that an emergency situation exists and finds the proposed regulation is necessary to address the emergency.

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Therefore, the Commission adopts the emergency regulation to amend Section 180.15, as discussed today.

**California Fish and Game Commission
Finding of Emergency and
Statement of Proposed Emergency Regulatory Action**

Emergency Action to Amend Section 180.15, Title 14, California Code of Regulations
Re: Commercial Coonstripe Shrimp Fishery

Date of Statement: January 6, 2025

I. Statement of Facts Constituting the Need for Emergency Regulatory Action

Background

Coonstripe shrimp (*Pandalus danae*) support a commercial trap fishery centered in Northern California, from Monterey Bay to the California/Oregon border. The first significant commercial landings were recorded in 1996 in Crescent City. Landings and value have increased slowly over time, with some year-to-year fluctuations. Although the volume of landings is low when compared to other state managed fisheries, the fishery is valuable in part due to the high price per pound (\$10 in 2024) in comparison to many other fisheries. The fishery's popularity is primarily driven by the high market demand for live coonstripe shrimp. A total of 11 vessels landed shrimp in 2023 and 14 vessels landed shrimp in 2024 (Table 1).

Table 1. Coonstripe shrimp landings in California, 2019-2024. Vessels are the number of vessels that landed more than 100 pounds of coonstripe shrimp over the course of the season.

Year	Pounds	Value	Vessels
2019	99,319	\$598,035	7
2020	96,580	\$604,537	7
2021	122,006	\$916,501	6
2022	103,432	\$873,578	7
2023	122,026	\$1,150,179	11
2024	140,729	\$1,428,001	14

The Commission adopted regulations for the fishery in 2002. Participation is unrestricted, but a vessel trap permit is required for each vessel participating in the fishery. The fishery is open from May 1 through October 31 and closed from November 1 to April 30 to protect egg-bearing females. The regulations set a control date of November 1, 2001, for the purpose of establishing a future limited access fishery.

Coonstripe shrimp are caught in longline trap gear. Traps are connected to a groundline anchored at each end, referred to as a "string". Surface buoys attached to one or both ends of the groundline mark the string's location. Typically, a string contains 10-20 traps, but some can have up to 40 traps. Small shrimp and other bycatch can escape the trap through the mesh, typically 0.5-inch square openings. Trap string lengths vary in different areas of the state to minimize gear conflicts and optimize placement on suitable habitat. Near Crescent City, where effort is concentrated in one small area, fishermen use more strings (30 to 90) but each is

shorter (12 to 15 traps). In the San Francisco Bay Area, where more habitat is available, fishermen generally deploy fewer, but longer strings (4 to 30 strings; up to 40 traps per string).

Coonstripe shrimp are primarily landed in the port areas of Crescent City and San Francisco. Crescent City has a fleet of five to seven vessels that account for the majority of annual landings by weight and value. While San Francisco and Monterey Bay area (Moss Landing, and Monterey ports) have fewer landings compared to Crescent City, vessel participation has recently increased. Prior to 2023, one to four vessels typically operated in the San Francisco-Monterey Bay areas; however, this number increased to seven vessels in 2023 and nine in 2024. Participants in the coonstripe shrimp fishery also engage in other California commercial fisheries, especially Dungeness crab, salmon, and groundfish, which have undergone recent closures or increased restrictions. The closure or restriction of those fisheries likely accounts for some of the redirection of effort to participation in the coonstripe shrimp fishery, particularly in the San Francisco area.

Coonstripe fishing gear has been implicated in a total of three whale entanglements: one in 2017 near Crescent City, and two in 2024 near San Francisco. As opportunities decline in other fisheries (i.e., salmon, groundfish), more fishermen are likely to enter the coonstripe fishery. Increased participation in the coonstripe shrimp fishery elevates the risk of marine life entanglement primarily by increasing the amount of gear in the water. More participants mean more vertical lines and a broader spatial distribution of fishing activity during the peak whale migration period, raising the chances of marine animals encountering and becoming entangled in the gear. Animals such as whales can become entangled when they make contact with the lines and become weighed down by the heavy metal traps, leading to injury or death.

II. Existence of an Emergency and Need for Immediate Action

The Commission considers the following factors in determining that an emergency exists:

Magnitude of Potential Harm:

The California Department of Fish and Wildlife (Department) recommends the adoption of these proposed regulations through emergency action to avoid serious harm to the public peace and general welfare. The current regulations for the coonstripe shrimp fishery allow unlimited growth in terms of participants and deployed gear. This poses significant risk of marine life entanglement, as most of this fishery growth is likely to occur in the San Francisco Bay Area, where whales are often observed in the same area where the coonstripe shrimp fishery occurs.

Continued entanglements could lead to additional restrictions on the fishery through inclusion in a federal take reduction plan, litigation, or other actions. The proposed regulations would limit the potential for future entanglements and allow the state to continue to manage the fishery—allowing more flexibility to balance the needs of fishermen and the marine environment.

Existence of a Crisis Situation and Immediacy of Need:

The basis for this emergency action is two confirmed entanglements of whales in coonstripe fishery gear in 2024, and the need to minimize entanglement risk, expected as a result of future increases in the number of participants, prior to the start of the 2025 season. Entanglements result in harm to the entangled animal, broader marine ecosystem, and pose risks to entanglement responders. These recent entanglements hinder progress towards California's goal of zero entanglement mortality and are in direct conflict with the federal Endangered Species Act and Marine Mammal Protection Act. Given the occurrence of the two entanglements late in the 2024 season, action through a regular rulemaking would not mitigate marine entanglement risk prior to the opening of the coonstripe shrimp season on May 1, 2025. Therefore, emergency action is needed.

Under current regulations, there are no limits to the number of fishery participants or amount of gear that can be deployed. This regulatory action will limit additional gear usage by current fishery participants and allow the Commission to limit future participation in the fishery to reduce marine life entanglement risk. Emergency action is needed to implement the regulations before the start of the next season on May 1, 2025.

Proposed Emergency Regulations

The proposed regulatory action amends Section 180.15 in the following manner and in accordance with the following rationale:

1. **Amend subsection 180.15(c)(4) – Notification regarding removal of traps prior to November 1:** Changes permittee to “owner or operator” to clarify who needs to contact the Department in the event that weather and sea conditions prevent compliance with trap removal. Additionally, updates how to contact the Department’s Law Enforcement Division by centralizing where and how notifications must be sent.
2. **Add subsection 180.15(c)(5) – Definitions:** Establishes definitions for “groundline” and “vertical lines”. This is necessary to define terms for the purposes of the regulation.
3. **Add subsection 180.15(c)(6) and (c)(7) - Management Boundary:** Establishes a management boundary at the Sonoma/Mendocino county border northward to the California Oregon border, and southward to the U.S./ Mexico border. Establishing this dividing line for coonstripe fishery regulations is necessary to recognize the distinct fishing practices and marine life entanglement risks to the north and south of this line.
4. **Add subsection 180.15(c)(6)(A) and (c)(67)(A) - Traps-per-String Limits.** Establishes limits on the number of traps per ground lines. Limiting the number of authorized vertical lines as noted below may incentivize fishing longer strings of traps. This measure is necessary to address the additional impact of longer, heavier strings of traps, which can increase the severity of injury for entangled marine life, increase gear conflicts, and increase safety risk for department wildlife officers during gear

inspections. The limit is 15 for the Northern fishery and 40 for the Southern fishery, reflecting current fishing practices.

5. **Add subsection 180.15(c)(6)(B) and (c)(7)(B) - Vertical Line Limits:** Imposes limits on the number of vertical lines per vessel, which are lines attaching a trap or string of traps to a surface buoy, a primary source of entanglement risk. The limit is 180 for the Northern fishery and 60 for the Southern fishery. Establishing these limits is necessary to reflect current fishing practices and the higher entanglement risk in the Southern portion of the fishery.
6. **Add subsection 180.15(c)(6)(C) - Depth Limit (Northern Fishery):** Establish a maximum depth limit of 30 fathoms (fm) for the Northern fishery. This restriction to only allow fishing shoreward of 30 fm aims to reduce whale/gear interactions by limiting fishing activity where whale presence is less likely. Establishing a depth restriction for coonstripe shrimp in the northern fishery is necessary give that a 30 fm depth restriction has been effective in reducing whale entanglement risk in the Dungeness crab fishery in this same area during spring and summer months, which partially overlaps with the coonstripe fishery season. A depth restriction in the Southern region would not be effective due to the broad distribution of whales across various depth strata and regular occurrence of whales shoreward of the 30 fm line.
7. **Amend subsection 180.15(d) - New Control Date (February 13, 2025):** Repeal the existing control date of November 1, 2001, and establish a new control date of February 13, 2025 (the date of proposed Commission adoption of this emergency regulation). A new control date is necessary to allow the Department to consider recent participation in the fishery if a restricted access program is established. It also discourages new entrants, mitigating potential increases in coonstripe fishing gear and associated entanglement risk.

III. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following determinations relative to the required statutory categories have been made:

- (a) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.
- (b) Nondiscretionary Costs/Savings to Local Agencies: None.
- (c) Programs Mandated on Local Agencies or School Districts: None.
- (d) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None.
- (e) Effect on Housing Costs: None.

IV. Technical, Theoretical, and/or Empirical Studies, Reports, or Documents Relied Upon

- McVeigh, B. (2010) Coonstripe Shrimp, *Pandalus danae*. In T. Larinto (Ed.) *Status of the Fisheries Report: An Update Through 2008*. California Department of Fish and Game.
- Petition 2020-011 AM1 regarding establishing a limited entry fishery, trap limits, and minimum mesh size.
- National Oceanic Atmospheric Administration (NOAA) Fisheries, Whale Entanglement Response Database, available from West Coast Large Whale Entanglement Response Program | NOAA Fisheries, last updated May 3, 2024.
- Endangered and Threatened Species; Identification of 14 Distinct Population Segments of the Humpback Whale (*Megaptera novaeangliae*) and Revision of Species-Wide Listing, 81 No. 174 F.R. 62260 (September 8, 2016).
<https://www.federalregister.gov/documents/2016/09/08/2016-21276/endangered-and-threatened-species-identification-of-14-distinct-population-segments-of-the-humpback>
- California Department of Fish and Wildlife. (December 2024). Application for an Individual Incidental Take Permit Under the Endangered Species Act of 1973: Incidental Take Permit Application and Draft Conservation Plan for California's Commercial Dungeness Crab Fishery. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=228134&inline>
- California Ocean Protection Council. (November 2019). Strategy for Protecting Whales and Sea Turtles & Ensuring Thriving Fisheries: Reducing the Risk of Entanglement in California Fishing Gear.

V. Authority and Reference

Authority: Sections 713, 1050, and 8591, Fish and Game Code.

Reference: Sections 1050, 8590, 8591, 8595, 9001 and 9015, Fish and Game Code.

VI. Section 399 Finding

The current regulations for the coonstripe shrimp fishery allow potentially unlimited growth in terms of participants and deployed gear. This poses significant risk of marine life entanglement, as most of this fishery growth is likely to occur in the San Francisco Bay Area, where whales are often observed in the same area where the coonstripe shrimp fishery is occurring.

Pursuant to Section 399 of the Fish and Game Code, the Commission finds that adopting this regulation is necessary for the immediate conservation, preservation, or protection of whale populations in California waters, and to limit the increase of marine life entanglement risk in coonstripe shrimp fishery gear.

Informative Digest (Policy Statement Overview)

Existence of an Emergency and Need for Immediate Action

The California Department of Fish and Wildlife (Department) requests the Commission amend Section 180.15, Title 14, California Code of Regulations to address marine life entanglement risk in the coonstripe shrimp fishery. Two confirmed entanglements occurred in coonstripe gear in 2024 near San Francisco; another whale was entangled in coonstripe and sablefish gears in 2017 near Crescent City. The fishery currently operates with minimal regulation; an open access trap permit is required for each vessel and the fishery is closed from November 1 to April 30. In the past two years, the Department has identified a dramatic increase in participant in the San Francisco area. The Department has indicated similar future increases in the number of participants is anticipated.

The proposed regulatory action amends Section 180.15 in the following manner:

1. Updates how and when to notify Law Enforcement.
2. Establishes definitions for “groundline” and “vertical lines”.
3. Establishes the Sonoma/Mendocino County border as a dividing line for coonstripe fishery regulations – “Northern” for north of this line to the Oregon/ California border, and “Southern” for south of this line to the U.S./ Mexico border.
4. Establishes limits on the number of traps per string. The limit is proposed as 15 for the Northern fishery and 40 for the Southern fishery, consistent with current fishing practices.
5. Establishes limits on the number of vertical lines that may be deployed per vessel. The limit is 180 for the Northern fishery and 60 for the Southern fishery, consistent with current fishing practices.
6. Establishes a maximum depth limit of 30 fathoms for the Northern fishery only.
7. Establishes a new control date of February 13, 2025.

Though small in terms of commercial fishery landings in California, the coonstripe fishery provides significant income to its participants and the resource appears to be sustainable based on the stability of landings through time. It is important to Northern California fisherman who have been faced with delays and closures in the Dungeness crab, groundfish, and salmon fisheries.

Under current regulations, there are no limits to the number of fishery participants or the amount of gear that can be deployed, leading to the possibility of an unlimited increase of marine life entanglement risk given the overlap and time and space with historical whale migrations. This proposed regulatory action will limit additional gear usage by current fishery participants and allow the Commission to limit future participation in the fishery to reduce

marine life entanglement risk. Emergency action is needed to implement the regulations before the start of the next season on May 1, 2025.

Benefits of the Regulation to the State’s Environment:

The Fish and Game Commission (Commission) anticipates benefits to the State’s environment by sustainably managing California’s ocean resources by limiting the potential increase of marine life entanglement risk in the coonstripe shrimp fishery. The environmental risk arising from the proposed rule is not regarded as significant, as the rule manages the resource more conservatively than existing regulations.

Consistency and Compatibility with Existing Regulations:

The Legislature may delegate to the Commission such powers relating to the protection and propagation of fish and game as the Legislature sees fit. The Legislature delegated regulation of the take of shrimp for commercial purposes to the Commission. The Commission conducted an evaluation of existing regulations, and this regulation is neither inconsistent nor incompatible with existing state regulations.



Commercial Coonstripe Shrimp Emergency

13 February 2025

Presented to:

**California Fish and Game
Commission**

Presented by:

Ian Kelmartin

**Environmental Scientist
Marine Region**



Overview

- Background & Current Regulations
- Emergency Condition
- Proposed Regulations
- Outreach
- Timeline & Next Steps



Photo: WDFW



Fishery Background

- First significant landings in 1996
- Longline trap gear
- Most effort in Crescent City and San Francisco/ Monterey Bay Area
- Historically less than 10 vessels; growth recently





Current Regulations

- Open access; trap permit required
- Open season May 1-October 31
- Control date of November 1, 2001
- No limits on gear



Photo: CDFW



Emergency Condition

Whale entanglements

- Two in 2024
- One in 2017 (concurrent with sablefish)



Photo: CDFW



Immediacy of Need

- Currently no limits on gear or participation
- Increase in number of vertical lines increases entanglement risk
- Entanglements in coonstripe gear could impact Dungeness crab fishery
- Regulation changes need to be in place by 2025 season



Outreach

- Fleet meetings
 - San Francisco: November 5, 2024
 - Crescent City: November 13, 2024
- Discussed fishing practices and received feedback on proposed changes
- Tribal notifications



Proposed Emergency Regulations

Goal: Limit potential increase in entanglement risk

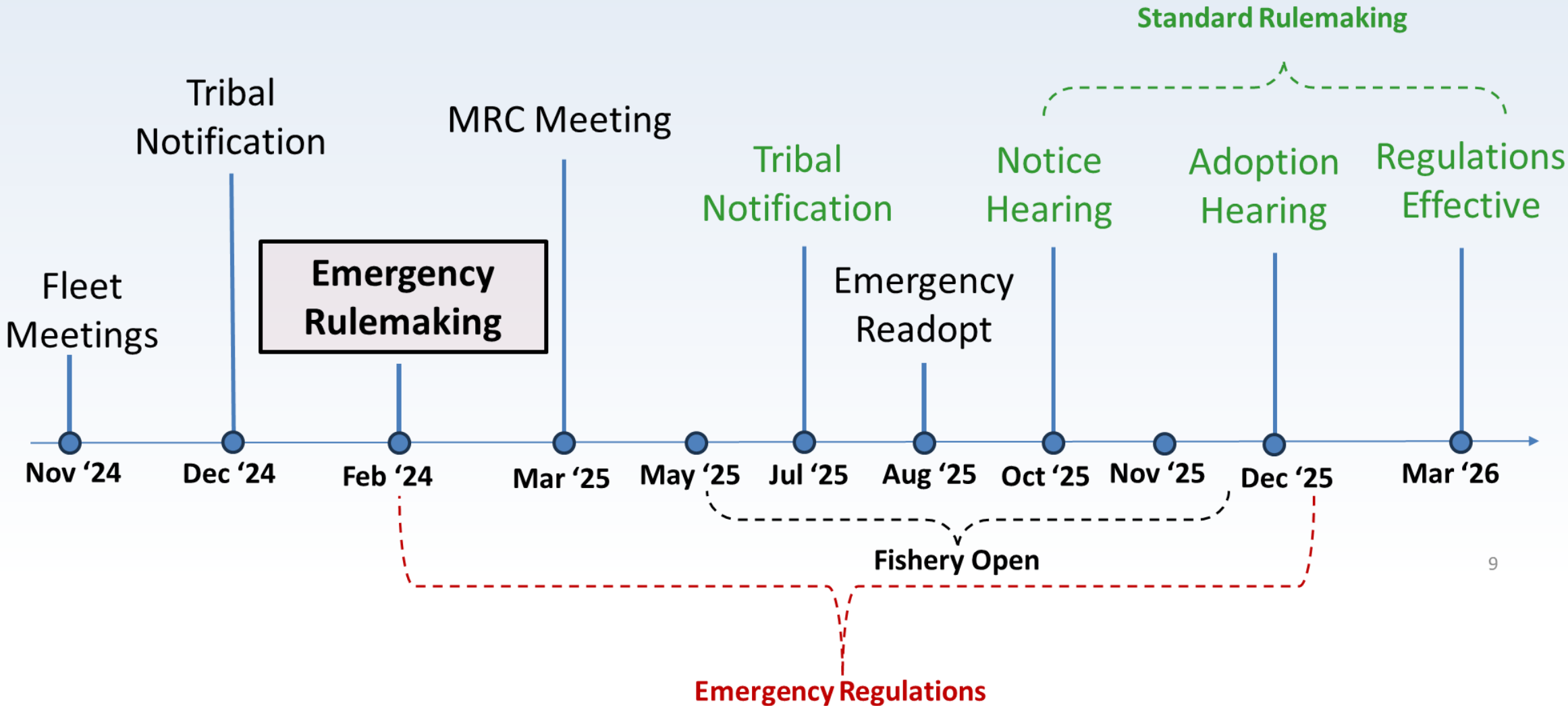
- Divide fishery at Sonoma/Mendocino County border

Restriction Type	Northern Fishery	Southern Fishery
Vertical Lines	180	60
Traps per String	15	40
Maximum Depth	30 fathoms (180 feet)	None

- Establish new control date of February 13, 2024



Timeline



Thank You



AskMarine@Wildlife.ca.gov

STAFF SUMMARY FOR AUGUST 22-23, 2018*For background purposes only***10. SANTA BARBARA SEA RANCH - NEW STATE WATER BOTTOM LEASE****Today's Item**Information Action

Determine whether a new state water bottom lease applied for by Santa Barbara Sea Ranch, Inc. would be in the public interest and provide direction to staff.

Summary of Previous/Future Actions

- Receive new lease application Jun 20-21, 2018; Sacramento
- **Today's potential public interest finding** **Aug 22-23, 2018; Fortuna**
- Consider approving lease To be determined

Background

FGC has the authority to lease state water bottoms to any person for aquaculture if FGC determines that such a lease is in the public interest (Section 15400, Fish and Game Code). Requirements for new lease applications and their consideration by FGC are specified in Section 15403 et seq. of the Fish and Game Code.

At its Jun 2018 meeting, FGC received an application from David Willitt of Santa Barbara Sea Ranch, Inc. to lease a new area covering 176 acres of state water bottom of the Santa Barbara Channel; the proposed lease area is located approximately five miles west of Santa Barbara Harbor within one mile of shore (Exhibit 1). The potential site would be used to grow Mediterranean mussels.

Fish and Game Code sections 15400(a) and 15404 require that, prior to considering a new lease application, FGC must find that the lease area applied for is available (i.e., not otherwise leased or encumbered for other uses), and that the lease would be in the public interest. To help inform FGC's finding, DFW has consulted with the California State Lands Commission regarding availability of the area and has provided a review of the application to inform a public interest determination (Exhibit 2).

Should FGC find that the lease would be in the public interest, staff will publish public notice that FGC is considering the lease as prescribed in Fish and Game Code Section 15404, DFW will initiate tribal outreach and interagency coordination, and environmental review will be conducted by the applicant prior to final FGC consideration of the lease application (Exhibit 2).

Significant Public Comments

Mr. Willett submitted a letter from a commercial trap fisherman from Santa Barbara expressing that the area would not interfere with commercial trap fishing grounds in the area, and that local mussel farming as proposed can benefit the fishing community (Exhibit 3).

The Southern California Trawler's Association did not identify any concerns with the proposed farm location and in the future would like to work with the applicant on implementation (Exhibit 4).

STAFF SUMMARY FOR AUGUST 22-23, 2018*For background purposes only***Recommendation**

FGC staff: Find the lease is available and would be in the public interest, and direct staff to advance the lease application for public notice, outreach and environmental review, as recommended by DFW.

DFW: Find that the area of the proposed new state water bottom lease for shellfish aquaculture is available and that the lease would be in the public interest, and direct staff to proceed with the next steps in public notice, tribal outreach, interagency coordination, and environmental review (Exhibit 2).

Exhibits

1. Santa Barbara Sea Ranch application for new lease and request for lease renewal, dated Jun 5, 2018
2. DFW memo and map of proposed lease area, received Aug 9, 2018
3. Letter from Steven Escobar, transmitted by David Willett via email, received Aug 8, 2018
4. Email from Mike McCorkle, received Aug 8, 2018

Motion/Direction

Moved by _____ and seconded by _____ that the Commission finds the state water bottom lease area applied for by Santa Barbara Sea Ranch, Inc. for purposes of shellfish aquaculture is available for lease, and that the lease would be in the public interest. Further, the Commission directs staff to initiate public notice pursuant to Section 15404 of the Fish and Game Code, and schedule for consideration the lease application following tribal outreach and interagency review, and environmental review conducted by the applicant.

Santa Barbara Sea Ranch, Inc.

RECEIVED
CALIFORNIA
FISH AND GAME
COMMISSION

2018 JUN -5 PM 1:30

| dwillett@santabarbarasearanch.com

May 31, 2018

Valerie Termini
Executive Director
California Fish and Game Commission
1416 Ninth Street, Suite 1320, Sacramento, CA 95814

Dear Valerie Termini:

Please find enclosed two copies Santa Barbara Sea Ranch's application for lease of State water bottoms and a check for the \$500 application fee.

Thank you for your consideration of our application! I look forward to hearing from you.

Sincerely,



David T. Willett

President & CEO

Santa Barbara Sea Ranch, Inc.

FORM A

**State of California Fish and Game Commission Application for Lease of
State Water Bottoms for Aquaculture**

Applicant Name: Santa Barbara Sea Ranch, Inc. **Phone:** (805) 450-9672

Address: 1829 Loma Street, Santa Barbara, CA 93103

Aquaculture Registration Number: TBD **Exp. Date:** TBD

(Note: Aquaculture registration application will be made when appropriate)

Species of plant or animals to be cultured:

Mytilus galloprovincialis (Mediterranean mussels)

Application is hereby made to the Fish and Game Commission of the State of California for a lease of State water bottoms in the area described in the attached exhibit entitled "Exhibit A - Legal Description," and as shown on the map attached hereto as "Exhibit B." Each exhibit bears the name of this applicant. Such lease will be for the purpose of aquaculture involving the species designated above. In support of this application, the applicant hereby submits the following explanation of the type of operation and cultural practices to be employed:

- A. Purpose of operation – research and development or production
- B. Plan of development and proposed production schedule – 5 year plan
- C. Type of cultural method(s) to be employed: bottom, longline, buoyed habitats, etc.
- D. Department of Health Services growing water classification: approved, conditionally approved, prohibited, restricted or unclassified

(Please see additional sheets for detailed explanation)

Date: _____

Santa Barbara Sea Ranch, Inc.

By: _____

David T. Willett – President & CEO

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1. BACKGROUND

A. APPLICANT

Santa Barbara Sea Ranch, Inc. (SANTA BARBARA SEA RANCH), a California corporation, was formed in May 2018 for the express purpose of creating a Santa Barbara based mussel farming operation that provides a locally cultivated, sustainably raised food source that creates economic opportunities for the community and serves to advance state and national goals and objectives for increased domestic aquaculture and secure food supply.

SANTA BARBARA SEA RANCH founder, David Willett, has held senior operations and engineering leadership positions with companies in the wave, tidal, and wind renewable energy sectors. He holds a BS – Electrical Engineering from UCSB, an MS – Electrical Engineering from the University of Wisconsin, and an MBA from Pepperdine University. His experience establishing and leading a wind turbine manufacturing operation with a global supply chain, as well as his ocean engineering experience in tidal and wave energy systems development, gives him the right tools and qualifications to help ensure the success of SANTA BARBARA SEA RANCH’s efforts to become a model aquaculture farming operation.

SANTA BARBARA SEA RANCH is working to create a Board of Advisors to help guide the company to successful establishment and commercial operation. Currently, Dr. Michael Chambers, Aquaculture Specialist and Research Scientist at the University of New Hampshire (UNH), is on the SANTA BARBARA SEA RANCH Board of Advisors. Dr. Chambers provides the company with guidance related to best management practices, operations, cultural practices, and technical design. SANTA BARBARA SEA RANCH will work cooperatively with UNH, the University of California – Santa Barbara Bren School of Environmental Science and Management, regulatory agencies, and others to advance scientific knowledge and state-of-the-art aquaculture practices through research and innovation.

B. PROJECT SUMMARY

SANTA BARBARA SEA RANCH will establish a commercial offshore bivalve aquaculture operation based from Santa Barbara Harbor. The project will consist of 176 acres in state waters of the Santa Barbara Channel over a sandy bottom area located approximately five miles west of Santa Barbara Harbor and within one mile of the shore. The site will be used for growing of the Mediterranean mussel (*Mytilus galloprovincialis*) via submerged longlines. The mussels will be grown and harvested by SANTA BARBARA SEA RANCH and landed at Santa Barbara Harbor.

Initial plantings of juvenile seed mussels, commonly referred to as spat, will be purchased from onshore hatcheries certified by the California Department of Fish and Wildlife (CDFW). If approved by the appropriate regulatory agencies, including CDFW and the California Coastal Commission, subsequent plantings may include wild collected spat.

Growing mussels adhere to special ropes that promote mussel attachment and growth. These ropes will be suspended by submerged longlines and buoys that are anchored to the sandy ocean bottom. When harvested, the mussels will be hauled onboard the harvesting vessel

where they will be separated from the growing ropes, declumped, cleaned, graded, and bagged for transportation to Santa Barbara Harbor for offloading, sale, and distribution.

2. OPERATION AND CULTURAL PRACTICES TO BE EMPLOYED

A. PURPOSE OF OPERATION

SANTA BARBARA SEA RANCH's purpose of operation is to grow, harvest, and sell Mediterranean mussels (*Mytilus galloprovincialis*) and, by doing so, to provide a locally cultivated, sustainably raised food source that creates economic opportunities for the community and serves to advance state and national goals and objectives for increased domestic aquaculture and secure food supply.

B. PLAN OF DEVELOPMENT AND PROPOSED PRODUCTION SCHEDULE

i. SITE SELECTION AND LOCATION

The proposed site (please see Exhibit A and Exhibit B) is approximately 176 acres, is in state waters, is not in the Halibut Trawl Grounds, is in a Kelp Administrative Bed Boundary with proper zoning for a bottom lease, and does not conflict with aquaculture activity on state leased parcels.

The proposed site is near to state water bottom lease #M-653-02, issued by the California Fish and Game Commission (FGC) and held by the Santa Barbara Mariculture Company (SBMC). SBMC has been successfully farming Mediterranean mussels in this lease location for more than 10 years. Due to its proximity to lease #M-653-02, SANTA BARBARA SEA RANCH believes that the permitting process should be more streamlined, and that growing conditions should be virtually identical. It is anticipated that cooperation between SBMC and SANTA BARBARA SEA RANCH will lead to improved operational efficiencies, improved best management practices, and economies of scale with regard to logistics and supplies, which will benefit both companies and the industry as a whole. There will also be minimal impact to vessel traffic since the proposed site is in line with the SBMC lease, parallel to the shoreline, and inside of the Halibut Trawl Grounds.

Environmental conditions, including depth, wave, current, temperature, and nutrients have all been proven to be satisfactory for successful mussel cultivation. Duck predation has been a problem in the area and will be addressed with new methods recently developed and tested by UNH.

SBMC has requested a modification to its lease location. SANTA BARBARA SEA RANCH's proposed location does not conflict with SBMC's existing, or proposed, locations. SBMC's proposed location is indicated by points SBMC 1, SBMC 2, SBMC 3, and SBMC a' in the map below (**Figure 1**). SBMC's existing lease is shown as the large kelp-shaded rectangle. SANTA BARBARA SEA RANCH's proposed site is indicated by points SR-NW, SR-SW, SR-NE, and SR-SE.

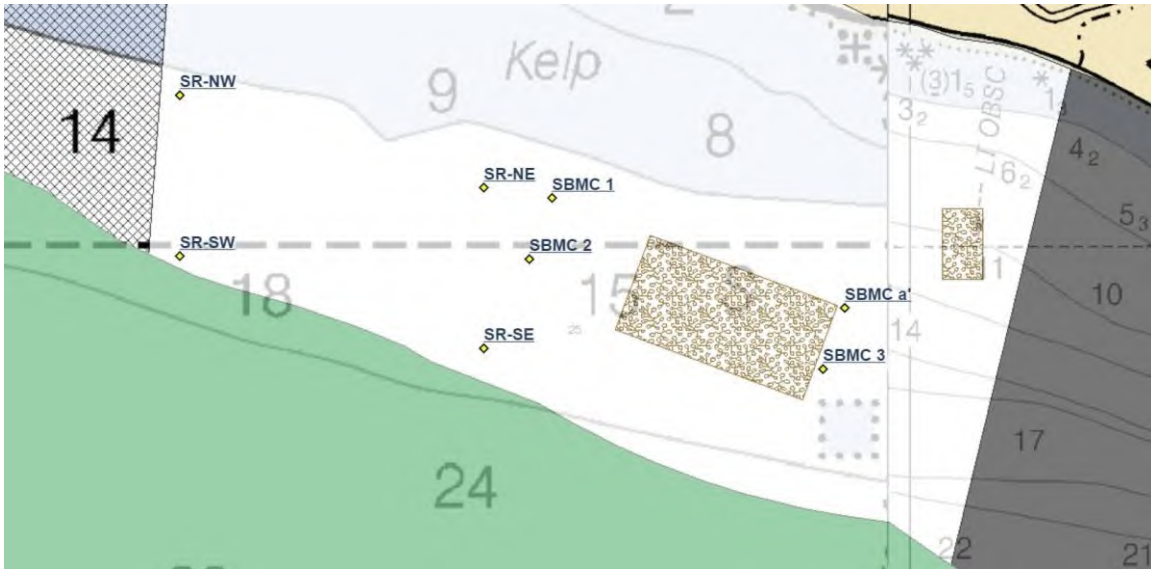


Figure 1: Map Showing the SANTA BARBARA SEA RANCH Proposed Site and the Santa Barbara Mariculture Company's Existing and Proposed Sites

SANTA BARBARA SEA RANCH has surveyed the proposed site for depth and bottom conditions. Sonar was used to take depth measurements at each corner of the site, midway between the corners of the site, and at multiple locations within the site:

Latitude	Longitude	Position	Depth (ft.)
34.40149287	-119.7803543	SR-NW	70
34.39600692	-119.7803543	SR-SW	101
34.39833926	-119.7677058	SR-NE	74
34.3928533	-119.7677058	SR-SE	111

Interior depth measurements in the proposed site were between 70-111 ft., and indicated that the entire site has a smooth sloping bottom.

Bottom conditions were estimated with sonar, and by bouncing a heavy weight on the bottom to feel for impact. All measurements taken indicated a sandy bottom with no growth or structure.

ii. PLAN OF DEVELOPMENT

The proposed site will occupy a 176 acre footprint and hold 100 longlines. Longlines will be arranged in 20 rows of five longlines each, spaced 100 feet apart, and parallel to the shoreline.

We plan to deploy 30 longlines in year one, 35 longlines in year two, and the final 35 longlines in year three. Production per foot of longline will continue to increase gradually after all the longlines are installed, as growout ropes are lengthened, and as production technique is refined.

We will use a modified second-hand fishing vessel for farm operation during the first three years, until cash flow from the farm will support the construction of a dedicated, custom-built vessel. The vessel will require minor modifications to accommodate handling of longlines, and the installation on deck of stripping, declumping, grading, and socking machinery. We plan to construct a new, purpose-built vessel in year three, and begin operating this vessel in year four (around the time the farm is at full scale).

The proposed site will be well marked and monitored. If necessary, warning devices can be installed to warn whales of the site location. Adaptive management and contingency steps will be taken if marine wildlife entanglements are observed or reported at the proposed site.

SANTA BARBARA SEA RANCH will work closely with stakeholders to adopt and adhere to all appropriate best management practices.

iii. PROPOSED PRODUCTION SCHEDULE

SANTA BARBARA SEA RANCH plans ramp-up operations according to the following schedule:

Production Schedule	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
New Lines Installed	30	35	35			
Total Lines Operating	30	65	100	100	100	100
Lines Socked	30	50	50	50	50	50
Lines Harvested		20	40	50	50	50
Tons/line		12	13	14	15	16
Tons Harvested		240	520	700	750	800

C. TYPE OF CULTURAL METHODS TO BE EMPLOYED

Mussels will be grown on ropes suspended vertically from longline harness sets in open water at the proposed site. Each harness set will consist of a 400 foot horizontal longline held in place about 20 feet below the surface by submerged flotation buoys, and anchored to the bottom (see **Figure 2** below). Dimensions in Figure 2 are not to scale and, along with specific component selection, will be adjusted and optimized to site specific conditions through disciplined engineering analysis. About 200 culture ropes will be suspended from each longline to a depth of 15-20 feet above the seafloor.

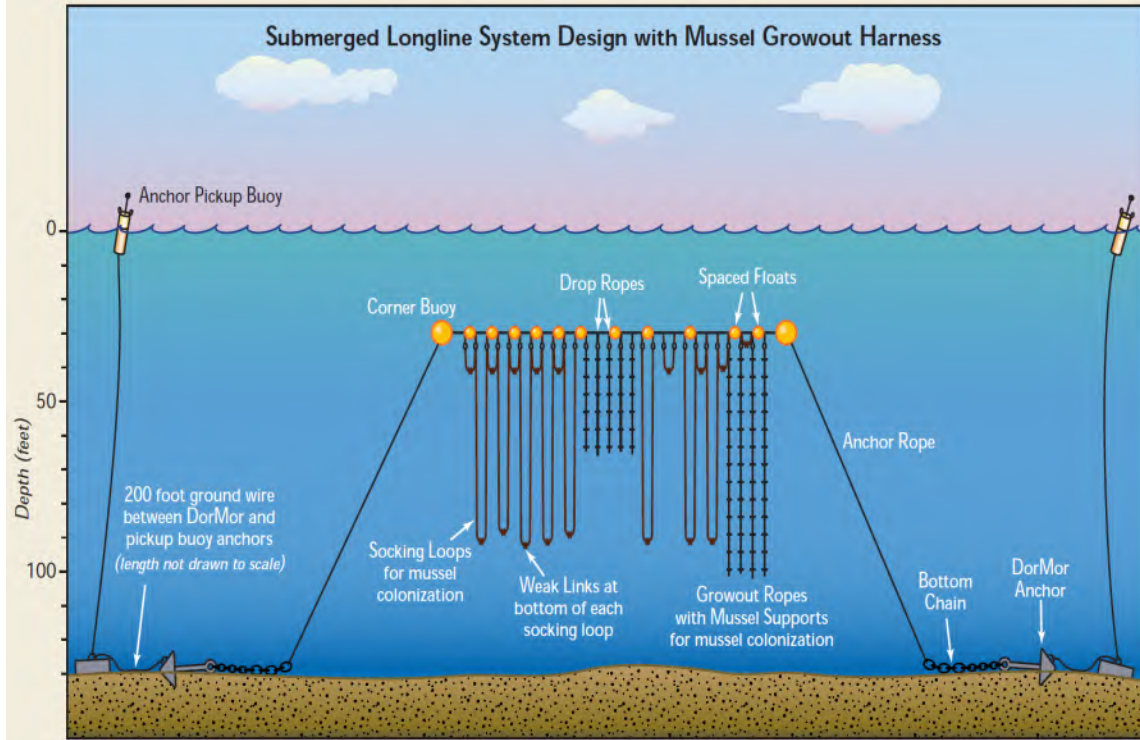


Figure 2 – Drawing of an Open-Ocean Mussel Longline Growout Harness

Longlines are assembled on shore and deployed by a vessel capable of handling the anchors (about 4,500 lbs each). Use of sand screw anchors will also be evaluated in place of gravity and embedment anchor solutions. The expected useful life of the longlines, with partial upgrades and regular maintenance, is 10 years. Deployment operations will require reasonable weather. Once the longlines are in place, production operations go through the following cycle:

- **Mussel spat socking:** Spat, purchased from onshore hatcheries certified by CDFW, are socked in June, July, September, and October. In this operation, juvenile mussels (around 20 mm in size) are graded according to size and “socked” in a biodegradable mesh surrounding the growout rope. This sausage-like “sock” of mussels is then suspended in loops from the longline. The mussels attach to the growout rope and the socking material disintegrates. The entire process is mechanized and performed onboard the vessel to minimize the mussels’ time out of the water.
- **Longline maintenance:** Longlines are maintained over the growout cycle until harvest. This includes the occasional removal of fouling and the addition of floatation as the mussels grow and become heavier. Properly scheduled de-fouling will help mussels grow better, preserve the gear, and save money on boat time.
- **Mussel Harvesting:** Mussel harvest begins 9-12 months after socking. Harvesting is staged so that a constant supply of mussels is harvested each month. The longlines remain in place after harvest for the next deployment of socked spat.

D. CALIFORNIA DEPARTMENT OF PUBLIC HEALTH GROWING WATER CLASSIFICATION

The California Department of Public Health (CDPH) has classified the area of the proposed site as “Conditionally Approved” as a shellfish growing area (please see **Figure 3** below).

California Commercial Shellfish Growing Areas

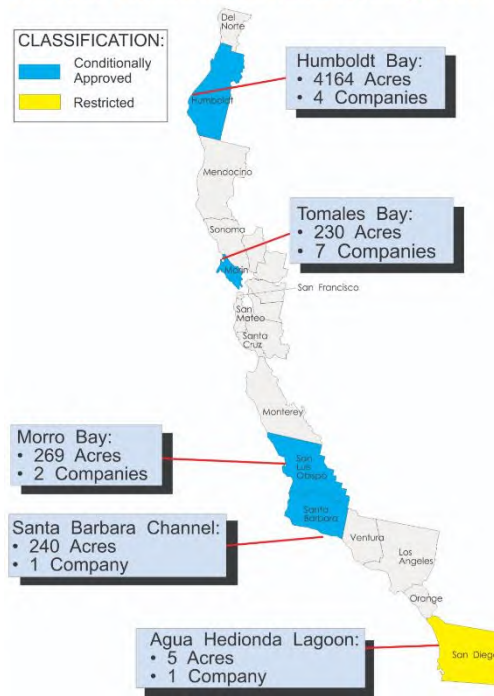


Figure 3 – California Commercial Shellfish Growing Areas

CDPH has also confirmed that the proposed SANTA BARBARA SEA RANCH site is not in a Waste Water Treatment Plant (WWTP) Closure Zone (please see **Figure 4** below).

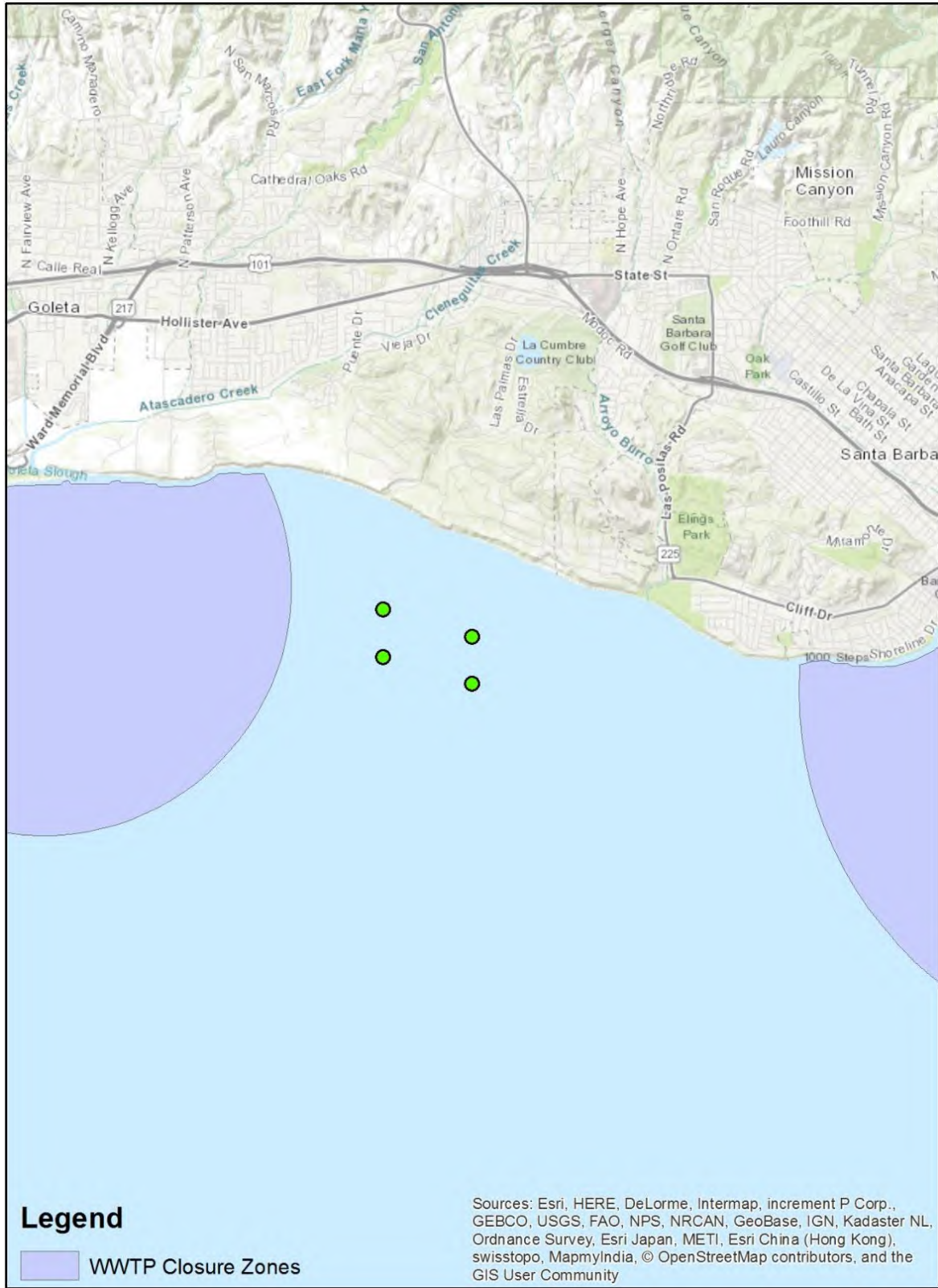


Figure 4 – SANTA BARBARA SEA RANCH Proposed Site Location (green dots) and Local WWTP Closure Zones

EXHIBIT A

Legal description of the proposed water bottom lease for cultivation of Mediterranean mussels (*Mytilus galloprovincialis*) by Santa Barbara Sea Ranch, Inc.

LOCATION

All that area lying offshore of Santa Barbara, California defined by a four-sided polygon formed by lines connecting the following waypoints (shown in decimal degrees):

Latitude	Longitude	Position
34.40149287	-119.7803543	SBSR-NW
34.39600692	-119.7803543	SBSR-SW
34.39833926	-119.7677058	SBSR-NE
34.3928533	-119.7677058	SBSR-SE

Area: 176 acres, more or less.

EXHIBIT B

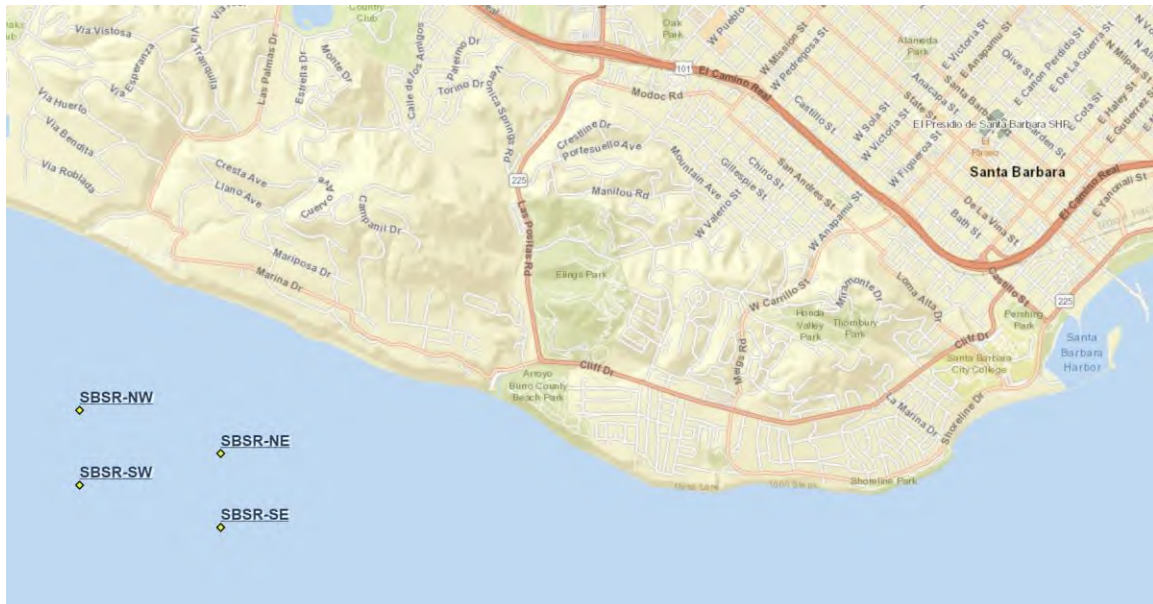
Map of the proposed water bottom lease for cultivation of Mediterranean mussels (*Mytilus galloprovincialis*) by Santa Barbara Sea Ranch, Inc.

MAP OF THE PROPOSED LOCATION

All that area lying offshore of Santa Barbara, California defined by a four-sided polygon formed by lines connecting the following waypoints (shown in decimal degrees):

Latitude	Longitude	Position
34.40149287	-119.7803543	SBSR-NW
34.39600692	-119.7803543	SBSR-SW
34.39833926	-119.7677058	SBSR-NE
34.3928533	-119.7677058	SBSR-SE

The nearest public access point is the Navy Pier in the Santa Barbara Harbor, approximately five miles from the proposed location.



- Area 176 acres, more or less.
- Distance between SBSR-NW and SBSR-SW = 2,000 ft., more or less.
- Distance between SBSR-NE and SBSR-SE = 2,000 ft., more or less.
- Distance between SBSR-NW and SBSR-NE = 4,000 ft., more or less.
- Distance between SBSR-SW and SBSR-SE = 4,000 ft., more or less.

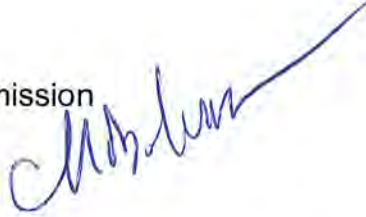
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Memorandum

Date: August 8, 2018

To: Valerie Termini
Executive Director
Fish and Wildlife Commission

From: Charlton H. Bonham
Director



Subject: **Request to consider the new state water bottom lease application received from David Willett, doing business as Santa Barbara Sea Ranch, for a 176-acre parcel in offshore waters near Santa Barbara.**

The Department of Fish and Wildlife (Department) requests that pursuant to Fish and Game Code § 15404, the Fish and Game Commission (Commission) finds that the area of the proposed new state water bottom lease for shellfish aquaculture, received from David Willett, doing business as Santa Barbara Sea Ranch (SBSR), is available, finds that the lease would be in the public interest, and direct staff to proceed with next steps in preparation for consideration of the lease (including the posting of public notices, tribal outreach, environmental review, and interagency coordination).

Background:

The Commission received an application for a new state water bottom lease for shellfish aquaculture at its June 20, 2018 meeting under Public Comment. The applicant proposes to establish a commercial offshore bivalve aquaculture operation based from Santa Barbara Harbor. The proposed project would consist of 176 acres in state waters of the Santa Barbara Channel over a sandy bottom area located approximately five miles west of Santa Barbara Harbor and within one mile of shore near Hope Ranch. The site will be used for growing Mediterranean mussels (*Mytilus galloprovincialis*) and Pacific oysters (*Crassostrea gigas*) using submerged longlines in a similar manner to the adjacent operation of Santa Barbara Mariculture Company (SBMC). Harvested product would be landed at Santa Barbara Harbor.

Public Resources Code declares it in the public interest to expand aquaculture activity¹, as does Fish and Game Code in statutory policy that encourages the development of commercial aquaculture². These policies apply in a broader sense, but the public interest consideration may be further informed by site-specific considerations that may be immediately apparent, such as previous encumbrances of the location by other leases issued or recorded by the State Lands Commission, or prohibitions on sanitary or public health grounds as

¹ The Aquaculture Development Act (Pub. Resources Code, § 826.).

² Fish & G. Code, § 1700.

managed by the Department of Public Health. The public hearing process of the Commission is meant to provide for more in-depth stakeholder input before approving new leases, so support for recommending this 'public interest' determination should take the form of preliminary site-specific considerations.

In compliance with California Code of Regulations, Title 14, section 237(b)(3), an inquiry was made to the State Lands Commission on July 2, 2018 to certify that the area applied for is unencumbered so as not to preclude its use for the proposed culture. On July 18, 2018, certification was received from the State Lands Commission affirming the absence of conflicting leases within the proposed aquaculture area.

The January 2017 Management Plan for Commercial Shellfish Growing Area M-653-02 (Management Plan) published by the California Department of Public Health (CDPH) provides sanitary management oversight of shellfish cultivation and harvesting activities in compliance with the National Shellfish Sanitation Program in this area that includes an existing state water bottom lease (#M-653-02, operated by SBMC) which is adjacent to the new proposed lease location. The existing SBMC lease is *conditionally approved* as a certified growing area from a public health perspective. The final determination of a proposed new lease's growing area certification is made by CDPH and is based on extensive water quality sampling and a positive certification outcome may not be presumed based solely on the status of a neighboring site. However, a preliminary review of the Management Plan indicates a lack of wastewater treatment plant ocean outfalls or prohibited areas that might immediately advise against this location from the public interest consideration currently being requested of the Commission. A proposed site Sanitary Survey and further coordination between the applicant and CDPH toward growing area sampling and certification will be conducted once the applicant has standing with a Commission-approved state water bottom lease, or sooner under the direction of CDPH.

The applicant has initiated outreach to stakeholders with potential conflicting uses in this area, including commercial trawl fishermen, and has received general support so far for the proposed location that has been corroborated by Department staff (pers. comm.). Future Commission hearings and the CEQA environmental review and disclosure processes will provide additional opportunity for stakeholder input regarding this proposed new operation.

Valerie Termini, Executive Director
Fish and Game Commission
August 8, 2018
Page 3 of 3

Recommendations:

The Department recommends that the Commission finds that the area of the proposed new state water bottom lease for shellfish aquaculture, received from David Willett, doing business as Santa Barbara Sea Ranch (SBSR), is available, finds that the lease would be in the public interest, and direct staff to proceed with next steps in preparation for that consideration (including the posting of public notices, tribal outreach, environmental review, and interagency coordination).

For additional information on this matter, please contact Randy Lovell, State Aquaculture Coordinator at (916) 445-2008, or at randy.lovell@wildlife.ca.gov.

Attachment

ec: **Department of Fish and Wildlife**

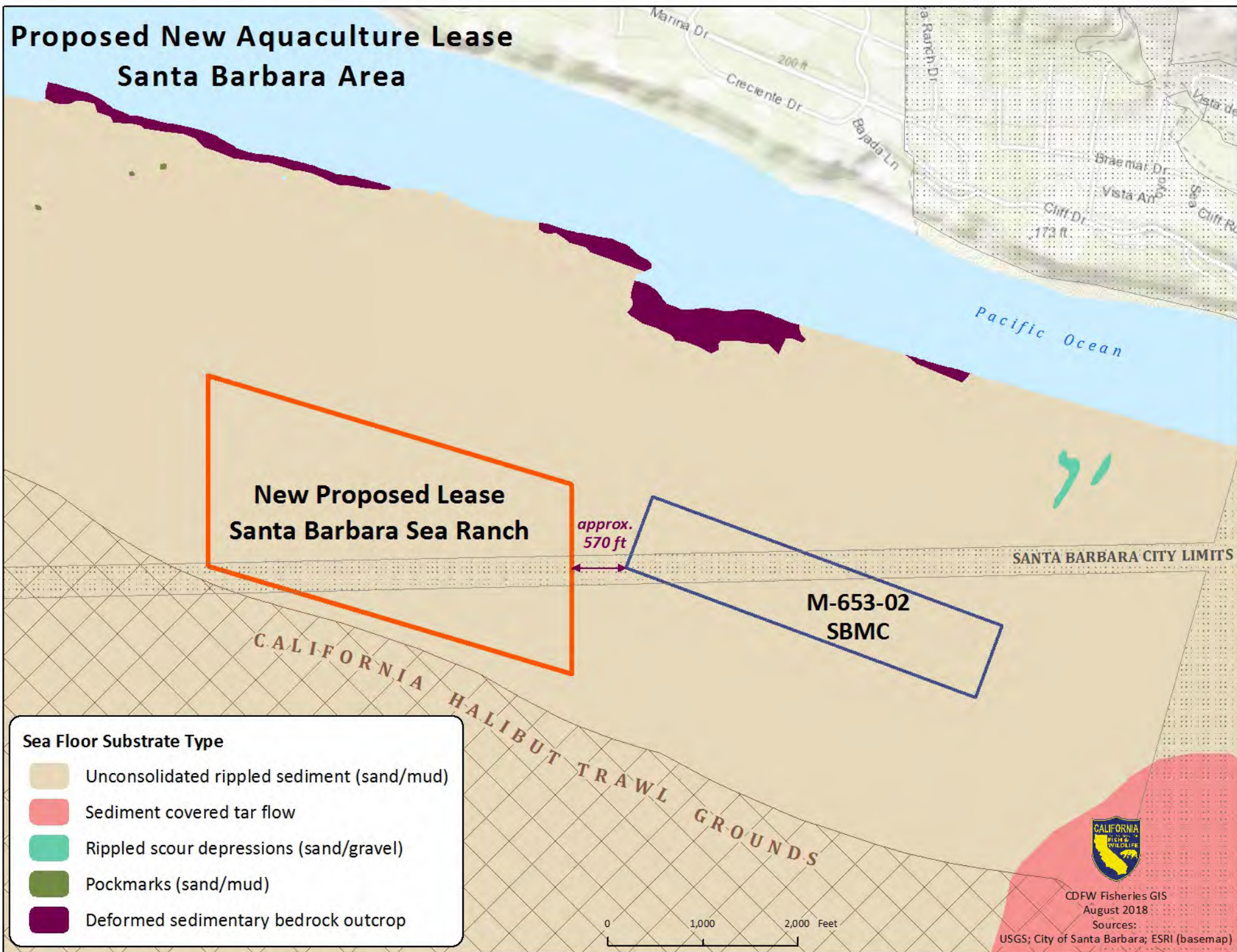
Stafford Lehr, Deputy Director
Wildlife and Fisheries Division
Stafford.Lehr@wildlife.ca.gov

Craig Shuman, D. Env.
Program Manager
Marine Region (Region 7)
Craig.shuman@wildlife.ca.gov

Randy Lovell,
State Aquaculture Coordinator
Randy.lovell@wildlife.ca.gov

Kirsten Ramey
Environmental Program Manager
Marine Region (7)
Kirsten.Ramey@wildlife.ca.gov

Proposed New Aquaculture Lease Santa Barbara Area



Proposed New Aquaculture Lease Santa Barbara Area



0 2,500 5,000 Feet



From: David Willett <dwillett@santabarbarasearanch.com>
Sent: Wednesday, August 8, 2018 11:04 AM
To: FGC
Cc: Ashcraft, Susan@FGC; Lovell, Randy@Wildlife
Subject: Letter of Support for Santa Barbara Sea Ranch Mussel and Oyster Farming
Attachments: Escobar LOS Willett.pdf

Dear Fish and Game Commission,

Please find attached a letter of support for Santa Barbara Sea Ranch's mussel and oyster farming lease application for inclusion in your binder for the August 22nd meeting in Fortuna.

Thank you and kind regards,

David Willett

David T. Willett
President - Santa Barbara Sea Ranch, Inc.

Email: dwillett@santabarbarasearanch.com

Website: www.santabarbarasearanch.com

August 7, 2018

David Willett
Santa Barbara Sea Ranch, Inc.

Santa Barbara, CA 93103

Dear David,

I support your effort to expand Santa Barbara's mussel farming industry for the following reasons. You have selected a location for your farm that minimizes interference with our commercial fisheries. From our conversations and the bio you shared with me, I have confidence at this time that you are capable and have the experience needed to be successful, and you will be a good neighbor to the fishermen.

I have been a commercial fishermen since 1991, working out of the port of Santa Barbara since 2001, and participating in direct marketing of rock crab and other seafood to consumers. The demand for mussels in California and in the U.S. far exceeds the domestic supply. Adding mussel farms to our coast can be a benefit to our fishing community when they are responsibly managed and carefully integrated into our commercial fisheries to minimize conflicts in ocean use.

Sincerely,

A handwritten signature in blue ink, appearing to read "Steve", with a stylized flourish at the end.

Steve Escobar,
Crabby Steve's

From: David Willett <dwillett@santabarbarasearanch.com>
Sent: Wednesday, August 8, 2018 12:35 PM
To: FGC
Cc: Ashcraft, Susan@FGC; Lovell, Randy@Wildlife
Subject: Fwd: From mike

Dear Fish and Game Commission,

Please see below. This email from the president of the Southern California Trawlers Association, Mr. Mike McCorkle, is in support of Santa Barbara Sea Ranch's mussel and oyster farming lease application for inclusion in your binder for the August 22nd meeting in Fortuna.

My email address was misspelled in Mr. McCorkles email to me, so it was forwarded to me from Ms. Kim Selkoe, Ph.D, Executive Director of the Commercial Fishermen of Santa Barbara, Inc.

Thank you and kind regards,

David Willett

David T. Willett
President - Santa Barbara Sea Ranch, Inc.
Phone:
Email: dwillett@santabarbarasearanch.com
Website: www.santabarbarasearanch.com

----- Forwarded message -----
From: **Kim Selkoe** <kim@cfsb.info>
Date: Wed, Aug 8, 2018 at 12:12 PM
Subject: From mike
To:

----- Forwarded Message -----
Subject: mussel farm
Date: Thu, 26 Jul 2018 10:11:55 -0700
From: McCorkle Fishing Enterprises
To:

David, Southern Ca. Trawlers Assn has reviewed your proposal to put in a mussel farm off of Hope Ranch, Santa Barbara, inside the one mile line and have no problem with the proposal at this time. we will be glad to work with you on your implementing your farm in the future. Mike Mccorkle, president SCTA.

Sent from my iPhone



PROJECT DESCRIPTION

SANTA BARBARA SEA RANCH, INC.

OFFSHORE AQUACULTURE PROJECT

December 2024



Lead Agency:

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

Applicant:

Santa Barbara Sea Ranch, Inc.

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1 PROJECT AND AGENCY INFORMATION

1 1.1 PROJECT TITLE

2 Santa Barbara Sea Ranch, Inc. Shellfish Aquaculture Operations on State Water Bottom
3 Lease Offshore Santa Barbara, California

4 1.2 LEAD AGENCY AND PROJECT SPONSOR

<u>Lead Agency</u> California Fish and Game Commission P.O. Box 944209 Sacramento, CA 94244-2090	<u>Contact Person</u> Melissa Miller-Henson, Executive Director California Fish and Game Commission Melissa.Miller-Henson@fgc.ca.gov (916) 653-9684
<u>Applicant</u> Santa Barbara Sea Ranch, Inc.	<u>Contact Person</u> David T. Willett, President & Founder dwillett@SantaBarbaraSeaRanch.com (805) 450-9672

5 1.3 PROJECT SIZE AND LOCATION

6 The Project size is 176 acres. The Project location is offshore from Santa Barbara,
7 California, approximately five miles west of Santa Barbara Harbor and within one mile of
8 the shoreline (Figure 1-1). The Project is in state waters, is not within the halibut trawl
9 grounds, is in a kelp administrative bed boundary with proper zoning for a bottom lease,
10 and it does not conflict with aquaculture activity on state leased parcels.



Figure 1-1: Proposed New Aquaculture Lease Santa Barbara Area

- 1 The parallelogram shape of the site results from attempting to maximize the potential
- 2 utilization of the area, which is bounded on the north by shallow water, on the south by
- 3 the halibut trawling grounds, on the west by a kelp administrative bed boundary (and
- 4 then, about 8,000 feet to the west, the Goleta Waste Water Treatment Plant closure
- 5 zone (Figure 1-2)), and on the east by SBMC's lease (with 190 yards of minimum
- 6 separation between the Proposed lease and the SBMC lease).

1 **Corner locations and depths at the Project site are:**

2	<u>Latitude</u>	<u>Longitude</u>	<u>Depth (ft.)</u>
3	34.40149287	-119.7803543	70
4	34.39600692	-119.7803543	101
5	34.39833926	-119.7677058	74
6	34.3928533	-119.7677058	111

7 Interior depth measurements at the Project site are between 70-111 ft. The entire site
8 has a smooth, sloping bottom.

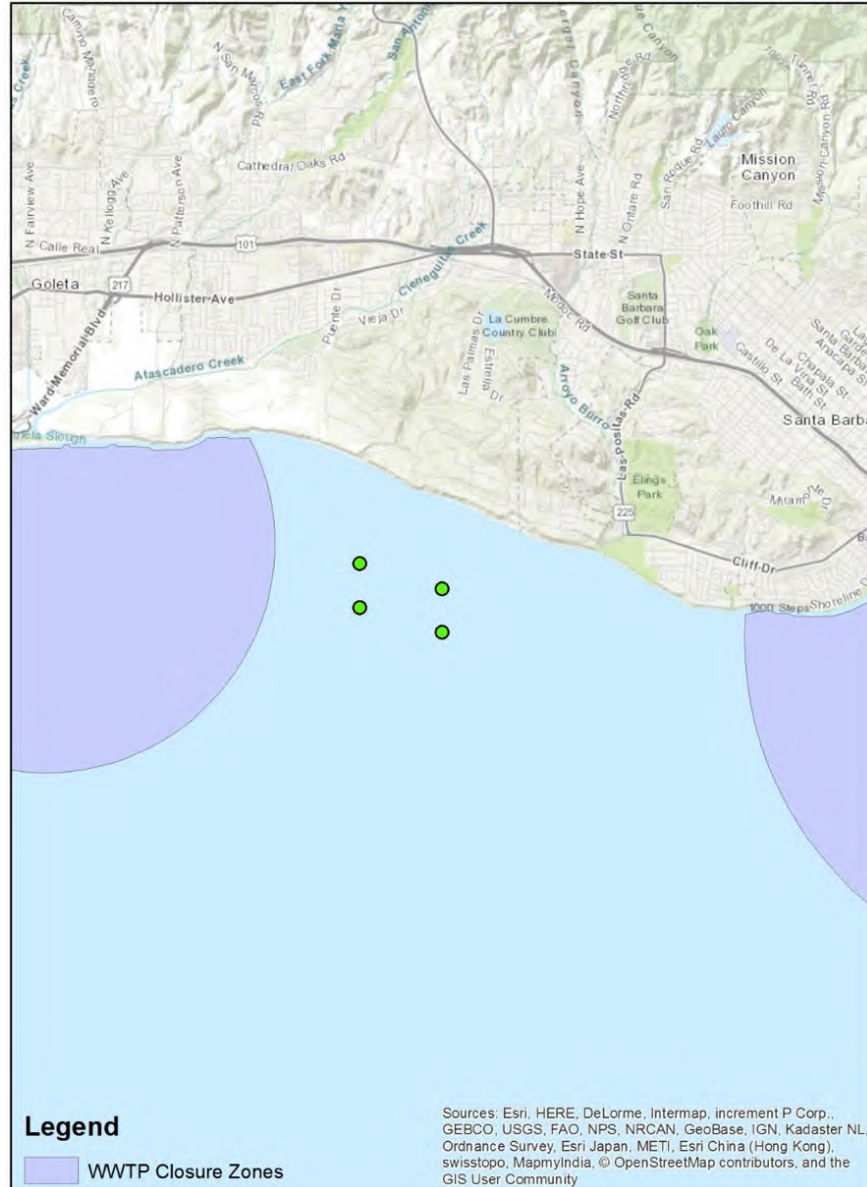


Figure 1-2: Project Location Relative to Wastewater Treatment Plant Closure Zones

1 1.4 PROJECT BACKGROUND

2 Santa Barbara Sea Ranch, Inc. was founded in 2018. SBSR applied for a state water
 3 bottom lease in May 2018 and has been working diligently with trustee, responsible,
 4 and other interested agencies since that time to complete the Initial Study/Mitigated
 5 Negative Declaration draft, to survey the bottom at the proposed lease location, and to

1 perform a bespoke engineering analysis for the longline equipment design that will be
2 employed in the Project.

3 **1.5 APPROVALS AND REGULATORY REQUIREMENTS**

4 **1.5.1 California Fish and Game Commission**

5 State law authorizes the California Fish and Game Commission (Commission) to lease
6 State water bottoms or the water column to any person for aquaculture, i.e., "the
7 cultivation of aquatic plants and animals," if such a lease is in the public interest. State
8 law provides authority to the Commission to adopt regulations governing terms of the
9 leases. Specific State laws and regulations pertaining to aquaculture leases and their
10 administration are found in Chapters 1 through 8 of Division 12 of the Fish and Game
11 Code (commencing with section 15000) and the provisions of Chapter 9 of Division 1 of
12 Title 14, California Code of Regulations (commencing with section 235).

13 **1.5.2 Other Agencies**

14 In addition to FGC, the Project is subject to the review and approval of other local, state,
15 and federal entities with statutory or regulatory jurisdiction over various aspects of the
16 Project (Table 1-1). As part of the Project, all permits required for the Project would be
17 obtained before starting installation activities.

Table 1-1: Anticipated Agencies with Review/Approval over Project Activities

AGENCY	PERMIT TYPES
California Department of Fish and Wildlife	Aquaculture Registration
California Fish and Game Commission	State Water Bottom Lease
California Coastal Commission	Coastal Development Permit
United States Army Corp of Engineers	TBD (at the discretion of USACE)
United States Coast Guard	Private Aid to Navigation Permit, Notice to Mariners (Navigational Risk Assessment may be required)
California Department of Public Health	Shellfish Growing Area Certificate, and Shellfish Handling & Marketing Certificate
State Lands Commission	Confirmation to Fish and Game Commission that lease area is not otherwise encumbered, nor privately owned, so as not to preclude its use for the proposed culture.
Central Coast Regional Water Quality Control Board	
National Oceanographic and Atmospheric Administration	
United States Fish & Wildlife Service	
Local Tribal Authorities	

1 **2.1 PROJECT OBJECTIVE**

2 SBSR's purpose of operation is to grow, harvest, and sell Mediterranean mussels
3 (*Mytilus galloprovincialis*), triploid Pacific Oysters (*Crassostrea gigas/Magallana gigas*),
4 and purple-hinge rock scallops (*Crassadoma gigantea*) and, by doing so, to provide a
5 locally cultivated, sustainably raised food source that creates economic opportunities
6 for the community and serves to advance state and national goals and objectives for
7 increased domestic aquaculture and secure food supply.

8 **2.2 SEA FLOOR SUBSTRATE TYPE**

9 The sea floor substrate type at the Project is entirely unconsolidated rippled sediment
10 (sand/mud) (Figure 2-1).



Figure 2-1: Sea Floor Substrate Type at the Project Site

1 **2.2.1 U.S. Geological Survey: California State Waters Map Series No. 3281 – Offshore**
 2 **of Santa Barbara, California**

3 **2.2.1.1 California Seafloor Mapping Program**

4 In 2007, the California Ocean Protection Council initiated the California Seafloor
 5 Mapping Program (CSMP), designed to create a comprehensive seafloor map of high-
 6 resolution bathymetry, marine benthic habitats, and geology within California’s State
 7 Waters (Johnson, et al., 2013). The program supports a large number of coastal-zone-
 8 and ocean-management issues, including the California Marine Life Protection Act
 9 (MLPA) (California Department of Fish and Game, 2008), which requires information
 10 about the distribution of ecosystems as part of the design and proposal process for the
 11 establishment of Marine Protected Areas. A focus of CSMP is to map California’s State
 12 Waters with consistent methods at a consistent scale.

1 The CSMP approach is to create highly detailed seafloor maps through collection,
2 integration, interpretation, and visualization of swath sonar bathymetric data (the
3 undersea equivalent of satellite remote-sensing data in terrestrial mapping), acoustic
4 backscatter, seafloor video, seafloor photography, high-resolution seismic-reflection
5 profiles, and bottom-sediment sampling data. The map products display seafloor
6 morphology and character, identify potential marine benthic habitats, and illustrate
7 both the surficial seafloor geology and shallow (to about 100 m) subsurface geology. It is
8 emphasized that the more interpretive habitat and geology maps rely on the integration
9 of multiple, new high-resolution datasets and that mapping at small scales would not be
10 possible without such data.

11 The California Seafloor Mapping Program (CSMP) is a collaborative venture between
12 numerous different federal and state agencies, academia, and the private sector. CSMP
13 partners include the California Coastal Conservancy, the California Ocean Protection
14 Council, the California Department of Fish and Game, the California Geological Survey,
15 California State University at Monterey Bay’s Seafloor Mapping Lab, Moss Landing
16 Marine Laboratories Center for Habitat Studies, Fugro Pelagos, Pacific Gas and Electric
17 Company, National Oceanic and Atmospheric Administration (NOAA, including National
18 Ocean Service – Office of Coast Surveys, National Marine Sanctuaries, and National
19 Marine Fisheries Service), U.S. Army Corps of Engineers, the Bureau of Ocean Energy
20 Management, the National Park Service, and the U.S. Geological Survey.

21 **2.2.1.2 Publication Summary**

22 This publication about the Offshore of Santa Barbara map area includes eleven map
23 sheets that contain explanatory text, in addition to a descriptive pamphlet and a data
24 catalog of geographic information system (GIS) files. Sheets 1, 2, and 3 combine data
25 from four different sonar surveys to generate comprehensive high-resolution
26 bathymetry and acoustic-backscatter coverage of the map area. These data reveal a
27 range of physiographic features (highlighted in the perspective views on sheet 4) such as
28 the flat, sediment-covered Santa Barbara shelf interspersed with tectonically controlled

1 bedrock uplifts, coarse-grained deltas and sediment lobes associated with coastal
2 watersheds, and patches of irregular seafloor related to hydrocarbon seeps. To validate
3 the geological and biological interpretations of the sonar data shown on sheets 1, 2, and
4 3, the U.S. Geological Survey towed a camera sled over specific offshore locations,
5 collecting both video and photographic imagery; this “ground-truth” surveying data is
6 summarized on sheet 6. Sheet 5 is a “seafloor character” map, which classifies the
7 seafloor on the basis of depth, slope, rugosity (ruggedness), and backscatter intensity
8 and which is further informed by the ground-truth-survey imagery. Sheet 7 is a map of
9 “potential habitats,” which are delineated on the basis of substrate type,
10 geomorphology, seafloor process, or other attributes that may provide a habitat for a
11 specific species or assemblage of organisms. Sheet 8 compiles representative seismic-
12 reflection profiles from the map area, providing information on the subsurface
13 stratigraphy and structure of the map area. Sheet 9 shows the distribution and thickness
14 of young sediment (deposited over the last about 21,000 years, during the most recent
15 sea-level rise) in both the map area and the larger Santa Barbara Channel region
16 (offshore from Refugio Beach to Hueneme Canyon), interpreted on the basis of the
17 seismic-reflection data. Sheet 10 is a geologic map that merges onshore geologic
18 mapping (compiled from existing maps by the California Geological Survey) and new
19 offshore geologic mapping that is based on the integration of high-resolution
20 bathymetry and backscatter imagery (sheets 1, 2, 3), seafloor-sediment and rock
21 samples (Reid and others, 2006), digital camera and video imagery (sheet 6), and high-
22 resolution seismic-reflection profiles (sheet 8). Sheet 11 uses the ground-truth-survey
23 imagery to develop a statistical model and maps that predict the distribution of benthic
24 macroinvertebrates for both the Offshore of Santa Barbara map area and the Santa
25 Barbara Channel region.

26 **2.2.1.3 USGS Findings at the SBSR Project Location**

27 Figure 2-2 below shows that the seafloor character (sheet 5 of the Offshore of Santa
28 Barbara Map Area) for the Project location consists of only fine-to medium-grained
29 smooth sediment.

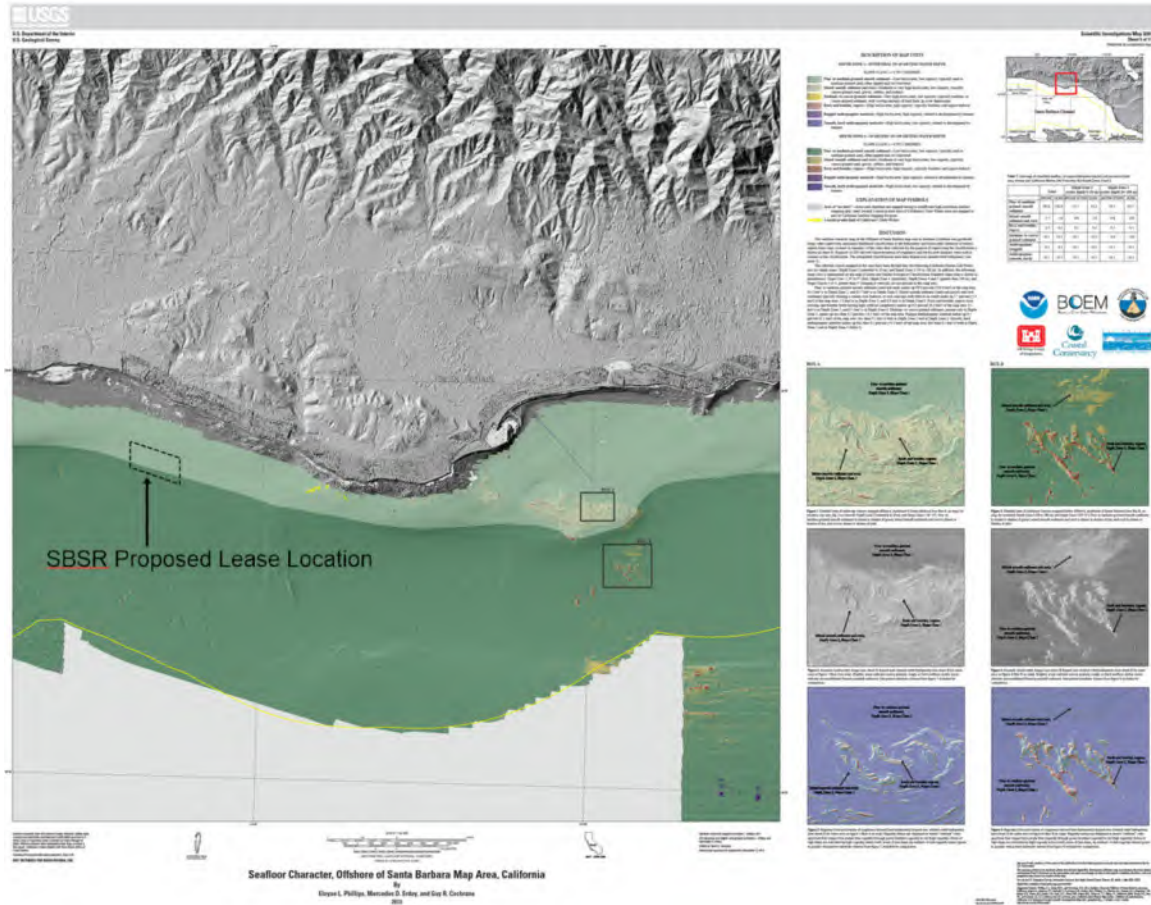








Figure 2-2: Seafloor Character, Offshore of Santa Barbara Map Area, CA (sheet 5)

- 1 For ease of reading, Figure 2-3 below shows, enlarged, the “Description of Map Units”
- 2 section from sheet 5, including some discussion of the findings.

DESCRIPTION OF MAP UNITS






DEPTH ZONE 2—INTERTIDAL TO 30 METERS WATER DEPTH

SLOPE CLASS 1—0 TO 5 DEGREES



-  **Fine- to medium-grained smooth sediment**—Low backscatter, low rugosity; typically mud to medium-grained sand; often rippled and (or) burrowed
-  **Mixed smooth sediment and rock**—Moderate to very high backscatter, low rugosity; typically coarse-grained sand, gravel, cobbles, and bedrock
-  **Medium- to coarse-grained sediment**—Very high backscatter, low rugosity; typically medium- to coarse-grained sediment, with varying amounts of shell hash; in scour depressions
-  **Rock and boulder, rugose**—High backscatter, high rugosity; typically boulders and rugose bedrock
-  **Rugged anthropogenic material**—High backscatter, high rugosity; related to development by humans
-  **Smooth, hard anthropogenic material**—High backscatter, low rugosity; related to development by humans

DEPTH ZONE 3—30 METERS TO 100 METERS WATER DEPTH

SLOPE CLASS 1—0 TO 5 DEGREES

-  **Fine- to medium-grained smooth sediment**—Low backscatter, low rugosity; typically mud to medium-grained sand; often rippled and (or) burrowed
-  **Mixed smooth sediment and rock**—Moderate to very high backscatter, low rugosity; typically coarse-grained sand, gravel, cobbles, and bedrock
-  **Rock and boulder, rugose**—High backscatter, high rugosity; typically boulders and rugose bedrock
-  **Rugged anthropogenic material**—High backscatter, high rugosity; related to development by humans
-  **Smooth, hard anthropogenic material**—High backscatter, low rugosity; related to development by humans

EXPLANATION OF MAP SYMBOLS

-  **Area of “no data”**—Areas near shoreline not mapped owing to insufficient high-resolution seafloor mapping data; areas beyond 3-nautical-mile limit of California’s State Waters were not mapped as part of California Seafloor Mapping Program
-  **3-nautical-mile limit of California’s State Waters**

DISCUSSION

This seafloor-character map of the Offshore of Santa Barbara map area in southern California was produced using video-supervised, maximum-likelihood classification of the bathymetry and backscatter (intensity of return) signals from sonar systems (a summary of the video data collected for the purpose of supervising the classification is shown on sheet 6). Rugosity (a GIS-derived characterization of roughness) and backscatter intensity were used as variants in the classification. The interpreted classifications were then draped over shaded-relief bathymetry (see sheet 2).

The substrate classes mapped in this area have been divided into the following California Marine Life Protection Act depth zones: Depth Zone 2 (intertidal to 30 m), and Depth Zone 3 (30 to 100 m). In addition, the following slope class is represented on this map (Coastal and Marine Ecological Classification Standard slope zone is shown in parentheses): Slope Class 1, 0° to 5° (flat). Depth Zone 1 (intertidal), Depth Zones 4 and 5 (greater than 100 m), and Slope Classes 2 to 4, greater than 5° (sloping to vertical), are not present in this map area.

Fine- to medium-grained smooth sediment (sand and mud) makes up 98.0 percent (110.0 km²) of the map area: 24.3 km² is in Depth Zone 2, and 85.7 km² is in Depth Zone 3. Mixed smooth sediment (sand and gravel) and rock (sediment typically forming a veneer over bedrock, or rock outcrops with little to no relief) make up 1.7 percent (1.9 km²) of the map area: 1.0 km² is in Depth Zone 2, and 0.9 km² is in Depth Zone 3. Rock and boulder, rugose (rock outcrops and boulder fields having high surficial complexity) makes up 0.2 percent (0.2 km²) of the map area: 0.1 km² is in Depth Zone 2, and 0.1 km² is in Depth Zone 3. Medium- to coarse-grained sediment, present only in Depth Zone 2, makes up less than 0.1 percent (<0.1 km²) of the map area. Rugged anthropogenic material makes up 0.1 percent (0.1 km²) of the map area; less than 0.1 km² is both in Depth Zone 2 and in Depth Zone 3. Smooth, hard anthropogenic material makes up less than 0.1 percent (<0.1 km²) of the map area; less than 0.1 km² is both in Depth Zone 2 and in Depth Zone 3 (table 1).

Figure 2-3: Description of Map Units from Sheet 5

- 1 Figure 2-4 below shows the ground-truth studies that were conducted to validate the
- 2 interpretations of the sonar data (sheet 6 of the Offshore of Santa Barbara Map Area).
- 3 To avoid cluttering the figure, the Project location is not overlaid on this figure.

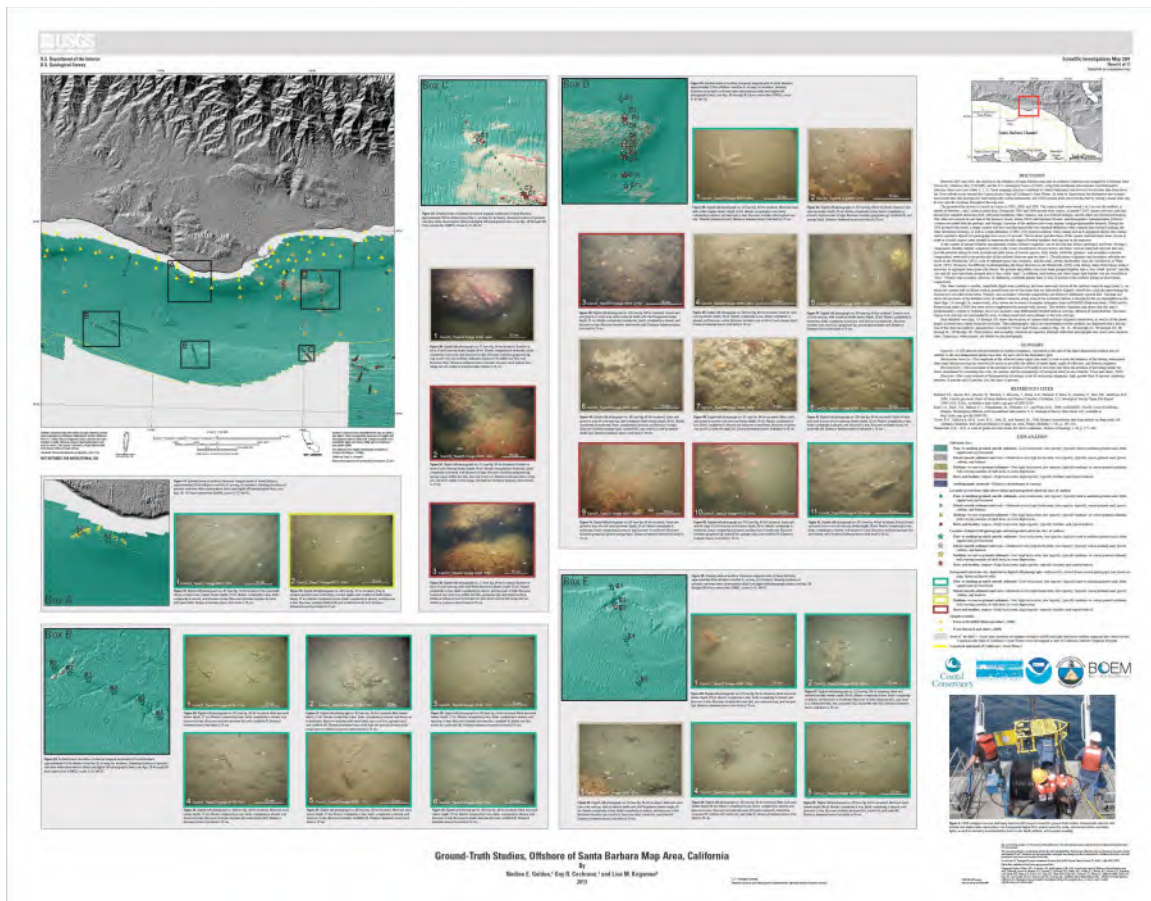


Figure 2-4: Ground-Truth Studies, Offshore of Santa Barbara Map Area, California (sheet 6)

- 4 Figure 2-5 below shows the potential marine benthic habitats (sheet 7 of the Offshore of
- 5 Santa Barbara Map Area). The entire Project area (labeled “Ss(s/m)_r/u” in the sheet)
- 6 consists of “Soft, unconsolidated, rippled sediment (sand and mud).”
- 7 The map on sheet 7 shows “potential” marine benthic habitats in the Offshore of Santa
- 8 Barbara map area, representing a substrate type, geomorphology, seafloor process, or
- 9 any other attribute that may provide a habitat for a specific species or assemblage of
- 10 organisms. This map, which is based largely on seafloor geology, also integrates
- 11 information displayed on several other thematic maps of the Offshore of Santa Barbara

1 map area. High-resolution sonar bathymetry data, converted to depth grids (seafloor
2 DEMs; sheet 1), are essential to development of the potential marine benthic habitat
3 map, as is shaded-relief imagery (sheet 2), which allows visualization of seafloor terrain
4 and provides a foundation for interpretation of submarine landforms.

5 Backscatter maps (sheet 3) also are essential for developing potential benthic habitat
6 maps. High backscatter is further indication of “hard” bottom, consistent with
7 interpretation as rock or coarse sediment. Low backscatter, indicative of a “soft”
8 bottom, generally indicates a fine-sediment environment. Habitat interpretations are
9 also informed by actual seafloor observations from ground-truth surveying (sheet 6), by
10 seafloor-character maps that are based on video-supervised maximum-likelihood
11 classification (sheet 5), and by seafloor-geology maps (sheet 10). The habitat
12 interpretations on sheet 7 are further informed by the usSEABED bottom-sampling
13 compilation of (Reid and others 2006).

14 Broad, generally smooth areas of seafloor that lack sharp and angular edge
15 characteristics are mapped as “sediment;” these areas may be further defined by
16 various sedimentary features (for example, erosional scours and depressions) and (or)
17 depositional features (for example, dunes, mounds, or sand waves). In contrast, many
18 areas of seafloor bedrock exposures are identified by their common sharp edges and
19 high relative relief; these may be contiguous outcrops, isolated parts of outcrop
20 protruding through sediment cover (pinnacles or knobs), or isolated boulders. In many
21 locations, areas within or around a rocky feature appear to be covered by a thin veneer
22 of sediment; these areas are identified on the habitat map as “mixed” induration (that
23 is, containing both rock and sediment). The combination of remotely observed data (for
24 example, high-resolution bathymetry and backscatter, seismic-reflection profiles) and
25 directly observed data (for example, camera transects, sediment samples) translates to
26 higher confidence in the ability to interpret broad areas of the seafloor.

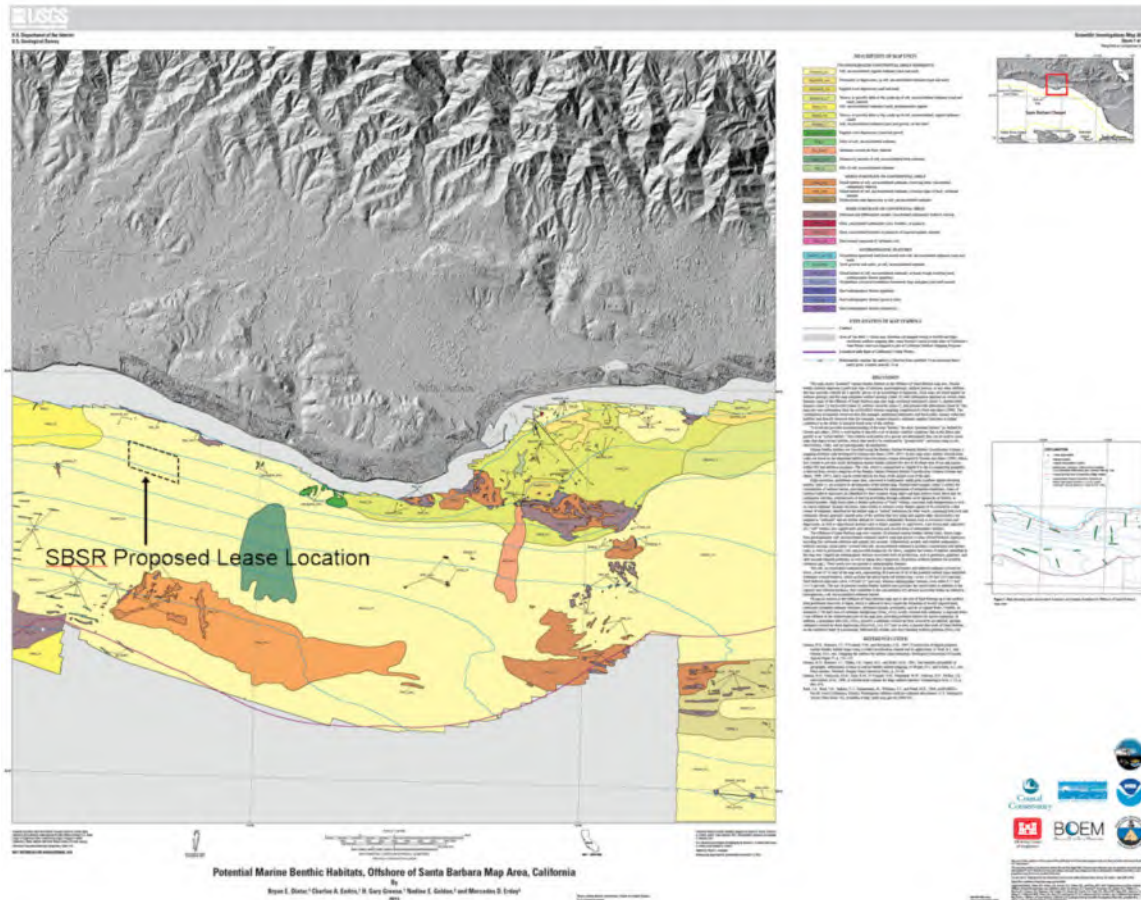


Figure 2-5: Potential Marine Benthic Habitats, Offshore of Santa Barbara Map Area, California (sheet 7)

- 1 Figure 2-6 below shows the description of the map units for sheet 7.

DESCRIPTION OF MAP UNITS

UNCONSOLIDATED CONTINENTAL SHELF SEDIMENTS

Ss(s/m)_r/u	Soft, unconsolidated, rippled sediment (sand and mud)
Ss(s/m)h_e/u	Pockmarks or depressions, in soft, unconsolidated sediment (sand and mud)
Ss(s/m)h_r/u	Rippled scour depression (sand and mud)
Ss(s/m)t_u?	Terrace, or possibly delta or fan, made up of soft, unconsolidated sediment (sand and mud); inferred
Ss(s)_r/u	Soft, unconsolidated sediment (sand), predominantly rippled
Ss(s)t_r/u	Terrace, or possibly delta or fan, made up of soft, unconsolidated, rippled sediment (sand)
Ss(s/g)_u	Soft, unconsolidated sediment (sand and gravel), on flat shelf
Ss(s/g)h/w_h/r/u	Rippled scour depressions (sand and gravel)
Ssg_u	Gully of soft, unconsolidated sediment
Ssl_h/t/u?	Sediment-covered tar flow; inferred
Ssm/y_h/u	Hummocky mounds of soft, unconsolidated delta sediment
Ssr_u	Rills of soft, unconsolidated sediment

MIXED SUBSTRATE ON CONTINENTAL SHELF

Sme_c/u	Mixed habitat of soft, unconsolidated sediment, overlying hard, consolidated sedimentary bedrock
Sme_c/l/u	Mixed habitat of soft, unconsolidated sediment, covering edges of hard, carbonate mounds
Smh_c/e/u	Hydrocarbon-seep depression, in soft, unconsolidated sediment

HARD SUBSTRATE ON CONTINENTAL SHELF

Shd_c/d	Deformed and differentially eroded, consolidated sedimentary-bedrock outcrop
Sh(b)/p_c	Hard, consolidated sedimentary rock, boulders, or pinnacle
Sh(b)/p_t?	Hard, consolidated boulders or pinnacles of exposed asphalt; inferred
Shm_e/l	Hard mound composed of carbonate rock

ANTHROPOGENIC FEATURES

Ss(s/m)_a/u*(q)	Oil-platform-generated shell hash mixed with soft, unconsolidated sediment (sand and mud)
Ss_a-td/u	Trawl grooves and marks, in soft, unconsolidated sediment
Smh_a-p/u	Mixed habitat of soft, unconsolidated sediment, in linear trough overlying hard, anthropogenic feature (pipeline)
Shm_a-s*(q)	Oil-platform structural-foundation framework (legs and pipes) and shell mound
Sh_a-p	Hard anthropogenic feature (pipeline)
Sh_a-g	Hard anthropogenic feature (groin or jetty)
Sh_a-w	Hard anthropogenic feature (shipwreck)

Figure 2-6: Description of Map Units for Sheet 7

1 **2.2.2 SBSR Bottom Survey**

2 At the request of CDFW, SBSR conducted its own video survey of the seafloor at the
 3 Project location. A survey transect grid was suggested by CDFW (with input from the
 4 California Coastal Commission) to capture a representative sample of the seafloor at the
 5 Project location (Figure 2-7). The vertical (north-south) red lines are spaced 400 feet
 6 apart and the horizontal (east-west) red lines are spaced 667 feet apart. The dashed
 7 black lines mark the perimeter of the proposed lease location.

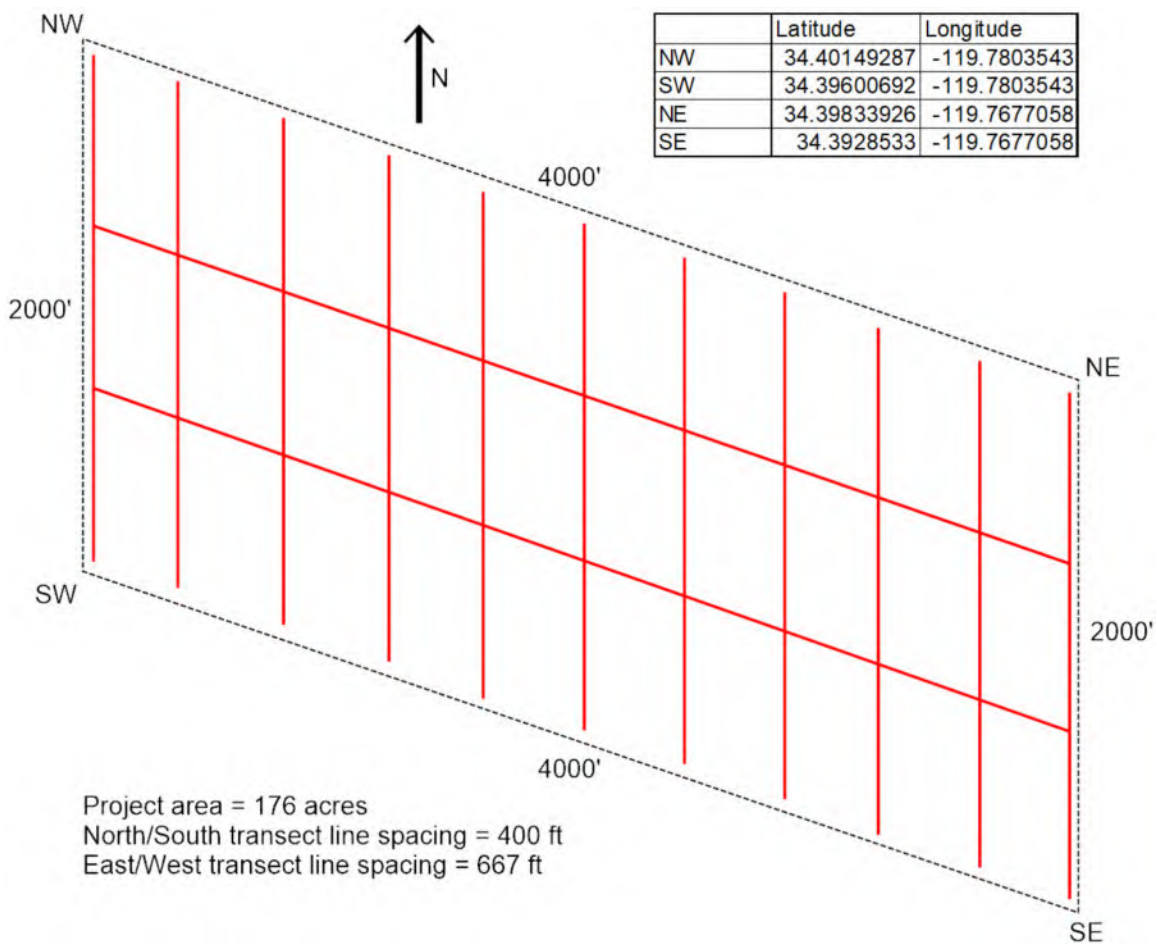


Figure 2-7: SBSR Project Bottom Survey Transect Lines

8 **2.2.2.1 SBSR Survey Equipment and Methods**

9 SBSR conducted its video survey of the Project site bottom using an ROV mounted to a
 10 custom-made tow vehicle that was towed along the sea floor approximately 100 feet

1 behind the surface vessel over the agreed up transect lines. Because water cloudiness
2 and lack of light made it difficult to document large fields of view, it was necessary that
3 the survey video camera be within a meter of the seafloor. Real-time GPS position
4 information from the surface vessel was overlaid on the 1080p HD video from the ROV.
5 Details about the SBSR survey can be found in **Section 4**.

6 **2.2.2.2 Survey Data**

7 The survey was conducted over a period of three days on August 15, 17, and 18, 2019.
8 Throughout the entire three days of surveying, SBSR captured approximately 35,000
9 linear feet (6.6 miles) of bottom video over the course of about 8.5 total hours of
10 filming. The average speed of the ROV during the video capture had to be limited to just
11 0.68 knots to provide good quality video capture. The video and data files associated
12 with this SBSR bottom survey are available upon request.

13 **2.2.2.3 SBSR Survey Findings**

- 14 • All of the video captured during the entire course of the SBSR survey indicated
15 that the bottom conditions were consistent with the findings of the USGS survey.
16 The entire survey found only “fine to medium-grained smooth sediment.”
- 17 • With a video capture width of 26” over 35,000 linear feet, the total area
18 captured on video was 1.73 acres, or approximately 1% of the total 176 acre
19 proposed lease area.
- 20 • Throughout the entire survey, the only thing that SBSR encountered that wasn’t
21 smooth, shallow sloped sand/mud bottom was what may have been an
22 abandoned mooring line that the ROV got temporarily entangled in.
- 23 • The SBSR survey results, coupled with the USGS survey results, indicate beyond
24 any reasonable doubt that the entire area of the proposed lease consists only of
25 soft, unconsolidated, rippled sediment (sand and mud) on a shallow sloping
26 bottom.

1 **2.3 PROJECT CHARACTERISTICS**

2 **2.3.1 Shellfish Farm: Culture Methods and Species**

3 **2.3.1.1 Longlines**

4 The Project will have 80 longlines (Figure 2-8), each with a backbone (the horizontal
5 section) length of 250 to 266 meters (820 to 873 feet). Anchor lines connected to the
6 backbone will be 19 to 32 meters (62 to 105 feet) long and will be attached to helical sand
7 screw anchors. Each longline will be custom designed according to the depth of its two
8 anchors to optimize geometry, control backbone depth, and meet structural design
9 requirements. Submerged and surface buoys will be used to give the longlines the correct
10 shape, to maintain tension, and to provide variable flotation as the mass of the shellfish
11 crops increase over time. The longlines will lie parallel to shore and be spaced 30.5 meters
12 (100 feet) apart in 20 rows of 4 longlines each (Figure 2-9). The backbone and anchor lines
13 will be 40 mm (1.57”) diameter rope and the system (along with buoys) will produce a
14 fairly rigid structure to which the cultivation ropes and lantern baskets will be attached.
15 The backbones will support 1,690 to 2,130 meters (5,444-6,988 feet) of continuous “fuzzy”
16 cultivation line per backbone. Longlines that are used to grow oysters and/or scallops in
17 lantern baskets will need to support less weight than the maximum design weight (fully
18 loaded with mussels). Cultivation lines are characterized by extra filaments that provide
19 substrate for mussels to attach. These “fuzzy ropes” will be attached to and suspended
20 from the tensioned backbone rope as individual lengths (spat lines from the hatchery), or
21 as continuous grow ropes when growing mussels to full market size. The length of the
22 “fuzzy ropes” may be less depending on the lifting capacity of the servicing vessel, or if the
23 backbone needs to be positioned lower in the water column in more shallow portions of
24 the proposed lease to avoid predation.

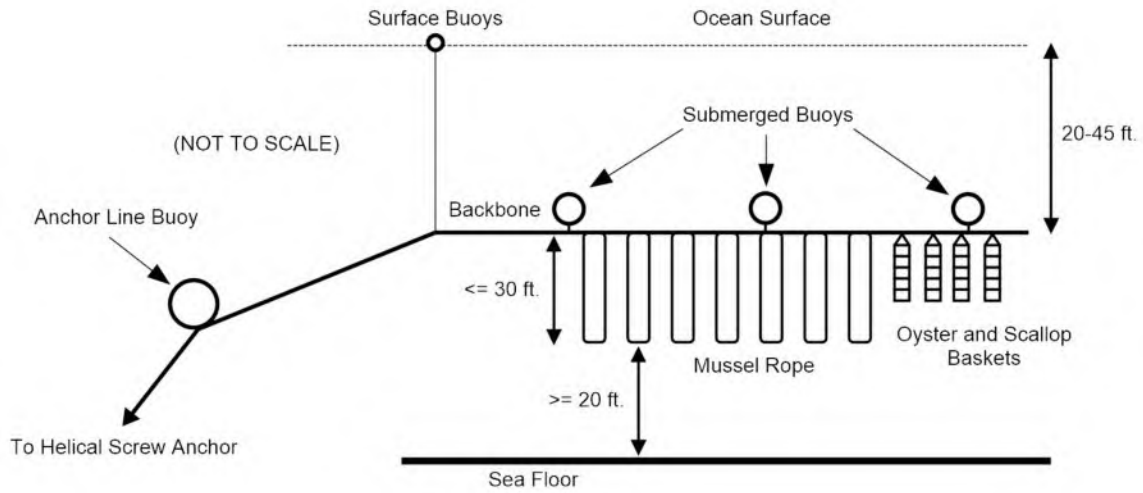


Figure 2-8: Submerged Longline Section

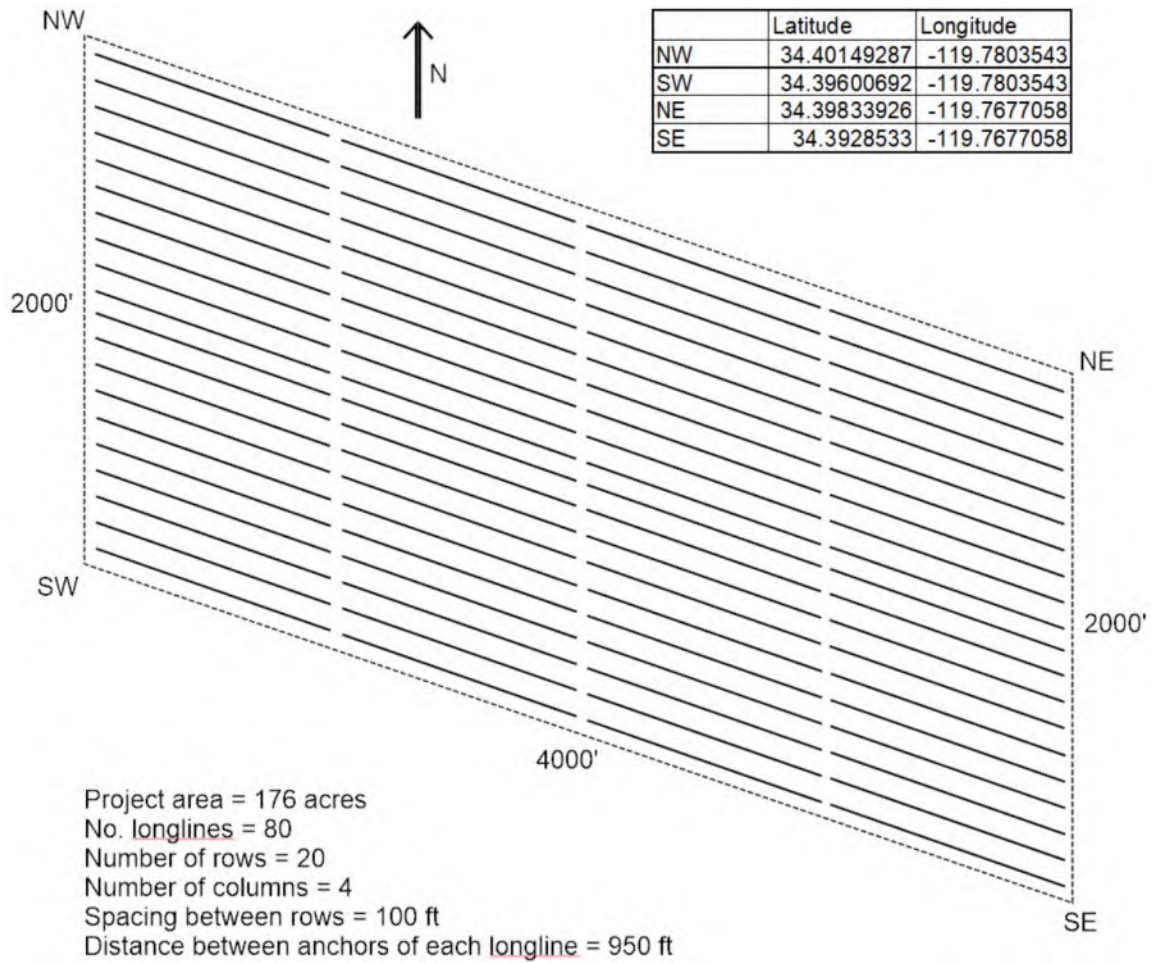


Figure 2-9: SBSR Longline Arrangement in Lease Area

1 Dynamic analysis of the longlines has shown that slack will not occur in the structural
2 lines during either calm or storm conditions. Therefore, either sinking or floating rope
3 may be used for the backbone and anchor lines. However, sinking lines will be used for
4 the tethers that connect the buoys to the backbone, and will be of a loaded breaking
5 strength matched to the buoy volume. Sinking lines have been proposed to help
6 prevent marine mammal entanglement (Price and Morris 2013; Ludwig et al. 2014) and
7 have been adopted by lobster fisheries as a method to reduce entanglement risk
8 (Johnson et al. 2005; Knowlton et al. 2012). As an additional precaution against
9 entanglement, grow ropes will be attached to the headrope with a low-breaking-
10 strength twine (0.16-inch diameter), which will facilitate rapid detachment in the
11 unlikely event of any interaction with the longline as well as a 2,000-pound breakaway
12 link which will be installed between the surface buoys and vertical lines. If a surface
13 buoy becomes disconnected from its attachment line, the rope will sink below the
14 connection point and not pose a hazard to vessels prior to retrieval.

15 SBSR will solicit industry expert review of its final detailed equipment specifications and
16 operating plans prior to installing any equipment. SBSR will initially install and plant 10
17 longlines, with some longlines in both deep and shallow areas of the proposed lease
18 area, to validate the design and operation prior to installation of all 80 longlines.
19 Installation of the longlines will be performed under the supervision of SBSR President
20 and Founder, David Willett, and other industry experts as required (this will be
21 necessary for helical screw anchor installation, for example). Mr. Willett has over 30
22 years of engineering experience, including seven years of ocean engineering
23 management experience (which included offshore mooring system design) in the tidal
24 and wave energy sectors. He has also owned and operated ocean-going vessels for over
25 25 years and holds a USCG 25T Merchant Mariner Credential.

26 SBSR is aware of the very unfortunate mistakes made by Catalina Sea Ranch. SBSR
27 believes that their problems were caused because they ignored permit requirements
28 from the California Coastal Commission and the U.S. Army Corps of Engineers, did not

1 perform required inspections, and failed to repair equipment. It is also believed that
2 Catalina Sea Ranch ignored enforcement letters demanding compliance with state and
3 federal rules, and, reportedly, used old tractor batteries instead of proper anchors. To
4 SBSR, this seems to be just gross incompetence and gross negligence.

5 **2.3.1.2 Anchors**

6 Using helical screw anchors in a mooring system is more environmentally friendly than
7 using drag-embedment or gravity anchors, disturbing less than one square meter of
8 seabed, and only during installation. Helical screw anchors (Figure 2-10) have been
9 shown to exhibit superior holding power as compared to other anchoring systems.
10 Screw anchors also have the advantage of being removable at Project decommissioning.
11 Screw anchors will be installed by a hydraulic drill with a drill head that operates from a
12 rig lowered to the ocean floor. The rig contains a gearbox and a hydraulic motor that
13 produces an insignificant noise level when in operation, far less noise than the engine of
14 even a small recreational fishing boat. The anchors will be screwed into the sandy
15 bottom ocean floor approximately 10 to 20 feet deep into the sediment.

16 During installation of the screw anchors, the torque of the hydraulic motor in the
17 installation rig is monitored and used to verify proper installation and holding power. If
18 the installation torque is either too low or too high, the diameter and/or length of the
19 anchor will be adjusted to ensure adequate holding power of each anchor. See **Section**
20 **7** for details about the anchor installer that SBSR plans to use, the methods and
21 equipment that will be used to install the anchors, and the duration of installation
22 activities.



Figure 2-10: Helical Screw Anchor

1 **2.3.1.3 Floats and Buoys**

2 Buoys marking the corners of the proposed lease area will identify the cultivation area
3 for navigational safety and will comply with all USCG regulations for height, illumination,
4 and visibility, including radar reflection. The USCG may require a navigational risk
5 assessment which may impose additional navigational risk mitigation requirements.
6 SBSR is currently in communication with the USCG to make that determination.

7 Permanent surface buoys for each longline will consist of 11-15, 300-liter LDPE (low
8 density polyethylene) surface buoys spaced at 15-meter (49 foot) intervals along the
9 central (farmable), horizontal portion of the backbone line and one 35-liter (16"
10 diameter) LDPE round buoy marking each anchor. One 480-liter LDPE buoy (or four 120-
11 liter LDPE buoys) will be attached to each anchor line at a distance from the anchor that
12 is two meters less than the water depth at the anchor. These anchor line buoys will give
13 the longline its initial shape and set the unloaded depth of the backbone. During the
14 mussel growth cycle, submerged floats attached to the backbone line will be used to
15 maintain tension on the structural backbone line and to prevent the crop from sinking
16 to the bottom as its weight increases over time. These will consist of 33 to 43, 120-liter
17 LDPE buoys affixed two meters above the backbone line and five meters apart. The
18 combination of surface and submerged buoyancy is designed to create a tensioned but
19 flexible structure that can respond dynamically to surface waves and storms.

1 All buoys will be uniquely marked with “SBSR,” the state issued lease number, and the
2 SBSR telephone number.

3 Longlines that are used to grow oysters and scallops will have a lower mass per linear
4 foot of backbone line than longlines growing mussels and, therefore, will require less
5 added subsurface buoyancy to maintain proper backbone tension and shape.

6 To avoid predation, the horizontal portion of the backbone line will be located 6-9
7 meters (20-30 feet) below the surface. If predation becomes a problem with the
8 backbone lines that will be set nearer to the surface (in the shallower portion of the
9 proposed lease area), the length of the grow ropes will be shortened, and the backbone
10 lines will be positioned further below the surface.

11 For a complete list of longline materials, see **Section 5**

12 **2.3.1.4 Structural Engineering Analysis**

13 Upon detailed review of both the Ventura Shellfish Enterprise (VSE) engineering analysis
14 and the Santa Barbara Mariculture Company’s (SBMC) use of a Bay of Biscay, Spain
15 project’s engineering analysis as a proxy (CFGC, 2018), SBSR concluded that neither the
16 VSE nor the SBMC analysis would suffice for a SBSR proxy. The VSE location,
17 environmental conditions, and longline design were too dissimilar, and even though
18 SBSR’s proposed lease location is near to SBMC, SBSR concluded that SBMC’s proxy
19 approach was not adequately representative of the local environmental conditions or
20 the SBSR longline design, and therefore could not be used to satisfactorily mitigate
21 Project risk. Hence, a detailed location and design-specific dynamic structural
22 engineering analysis of the SBSR longline designs was performed (**Section 6**).

23 SBSR, with the support of Jacob Technologies and Orcina, LTD, conducted detailed static
24 and dynamic analysis of the SBSR longlines in extreme storm conditions (Figure 2-11)
25 using Orcina's OrcaFlex finite element analysis software, the world's leading package for
26 the dynamic analysis of offshore marine systems. A total of 48 separate load cases were
27 evaluated for extreme wave, current, and wind conditions with bespoke longline designs
28 optimized for specific water depth.

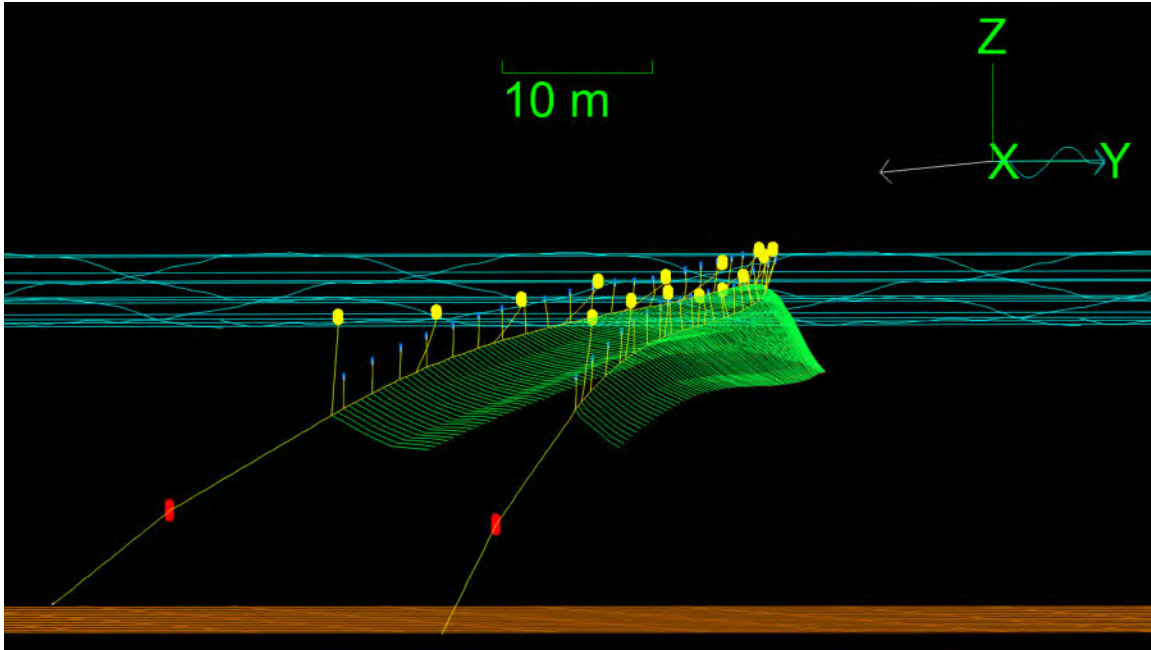


Figure 2-11: SBSR Longline in 100-Year Waves from 273 Degrees and 10-Year Current from 180 Degrees (SBSR longlines will lay 286/106 degrees)

1 Minimum requirements for breaking strength of the structural lines, buoy lines, and
 2 holding power of the anchors have been specified to achieve safety factors
 3 recommended for offshore structures by the American Petroleum Institute (API RP2SK).
 4 Load cases were designed exceeding Norwegian Standard NS-9415 recommendations
 5 for evaluation of both wave-dominated and current-dominated extreme events.

6 **2.3.1.5 Culture Species**

7 Mediterranean mussels (*Mytilus galloprovincialis*), Pacific oysters (*Crassostrea gigas*),
 8 and purple-hinge rock scallops (*Crassadoma gigantea*) are the three species that SBSR
 9 proposes to culture in this Project.

10 **Mediterranean Mussel:** Wild mussels present along the California coast include three
 11 main species: *Mytilus galloprovincialis* (*M. gallo*), *Mytilus trossulus* (*M. trossulus*), and
 12 *Mytilus californianus* (*M. californianus*). Another species, *Mytilus edulis* (*M. edulis*), has
 13 historically been cited as the west coast “bay” mussel in state regulatory documents and
 14 the scientific literature, conforming with taxonomic understanding at the time.
 15 However, *M. edulis* is now recognized by taxonomists as the species found in Atlantic

1 waters, and previous west coast references to *M. edulis* are now, by convention,
2 referring to *M. trossulus* or *M. gallo* as the west coast “bay” mussel (Suchanek, 1997).
3 Due to morphological similarity, distinguishing between the three mussel species
4 making up the so-called “*M. edulis* complex”: *M. edulis*, *M. trossulus*, and *M.*
5 *galloprovincialis*, is a continuing challenge for scientists who must rely on genetic testing
6 to do so. The distinction is further complicated by these species’ sympatry and
7 readiness to hybridize when found in suitable proximity for such broadcast-spawners
8 (so-called “hybrid zones”), and their similar ecological function (e.g.: congener filter
9 feeders in the same habitats, with many of the same predators and space usages).
10 Recent studies have confounded attempts to correlate oceanographic factors like
11 temperature and salinity in predicting patterns of distribution and relative competitive
12 success of *M. trossulus* and *M. gallo* in locations defining hybrid zones along the
13 California coast (Babry & Somero 2006; Hilbish et al.,2010).

14 Although *M. gallo* is not originally native to California, there is abundant evidence that it
15 is well-established across southern California and has been present in the ecosystem
16 since the early 1900’s. Several studies suggest that the native bay mussel, *M. trossulus*
17 was displaced by *M. gallo* in the early part of the twentieth century. *M. gallo* is now the
18 dominant of the two bay mussels (*galloprovincialis* vs. *trossulus*) across the entire
19 southern half of California. The distribution of *M. gallo* is restricted to more protected
20 and sheltered habitats, as it is not tolerant of wave exposure. Although *M. gallo* can be
21 found in rocky intertidal habitats, the California mussel, *M. californianus* dominates
22 most of the rocky intertidal habitat across the entire coast of California and is well
23 documented to be the competitive dominant in rocky intertidal ecosystems. Not only is
24 *M. gallo* not tolerant of wave exposure, but it is also quickly consumed by a variety of
25 predators and preferred over *M. californianus*, likely due to its weaker shell.

26 The Bay Mussel, and specifically, Mediterranean mussel, (*M. galloprovincialis*), is an
27 approved culture species under the terms of the SBMC lease with the FGC and under
28 Aquaculture Registrations issued by the CDFW.

1 **Pacific Oyster:** The Pacific oyster (*C. gigas*) is the most widely cultivated oyster species
2 worldwide, with west coast aquaculture production occurring along the Pacific Ocean
3 from Alaska to Mexico. It is an approved culture species under the terms of the SBMC
4 lease with the FGC and under Aquaculture Registrations issued by the CDFW.

5 **Rock Scallop:** The purple-hinge rock scallop, *Crassadoma gigantea* (formerly *Hinnites*
6 *giganteus/multirugosus*), is native to the West Coast of North America from Baja
7 California, Mexico to northern Alaska. It has been an approved culture species under
8 Aquaculture Registrations issued by the CDFW, including the adjacent SBMC lease.

9 **2.3.2 Shellfish Farming Operations**

10 **2.3.2.1 General**

11 Initial farming operations will be conducted from a modified fishing boat capable of
12 installing and handling the longlines and stripping, de-clumping, cleaning, sorting,
13 bagging the shellfish. When the Project is in full production, operations will include
14 three boats specifically designed to support farming, or possibly just one smaller boat
15 for longline maintenance and operations and one larger planting and harvesting vessel.
16 The second and third (if needed) boats will be optimized to support farming operations.
17 Each boat will visit the farm a maximum of five days a week, year-round, for
18 approximately eight hours per day, including travel time to the Project location from
19 Santa Barbara harbor berth(s) near the Navy Pier. Each boat will make only one trip per
20 day. Trips by the second and third boats will mirror those of the first, with effectively
21 the same emission and vessel impacts from each boat. If only a second, larger, planting
22 and harvesting boat is added, its emissions may be slightly higher than those of the
23 individual smaller boats but may be lower than those from two additional smaller boats
24 combined.

25 All farming and boating activities will take place during the day and, while farming
26 operations will change in frequency throughout the year, there are no clear operational
27 peaks, as harvesting, seeding, and maintenance will take place incrementally

1 throughout the year. Mussel, oyster, and scallop seed will be planted in the fall and the
2 spring (or when available from the hatcheries), and harvesting will begin in the late
3 summer to fall of the next year. Mussels will take about 12 months to reach market size,
4 oysters 18-30 months, and scallops 24-48 months. Throughout the process, the longline
5 will be raised to the surface to handle the shellfish, and buoys will be added to the
6 backbone to maintain consistent depth as the shellfish grow and become heavier. All
7 shellfish products will be landed in Santa Barbara harbor and placed in certified cold
8 storage within ten (10) hours from the commencement of the day's harvest activity.

9 In a typical growth cycle, there will be approximately 25% of the longlines dedicated as
10 seed grow-out lines. No wild seed collection lines will be utilized. All seed will be
11 obtained from CDFW-approved commercial hatchery stock, which will be planted
12 directly to grow-out lines by the hatchery (for mussels) or into hanging nets (for oysters
13 and scallops) by SBSR. Some lines will lie fallow between harvest and re-seeding for
14 varying periods of time. Specific numbers of fallow/seed/harvest lines for the Project
15 will always be in flux. Product mix will vary depending on market conditions. Farming
16 operations will be tuned over time to maximize production levels and optimize product
17 mix to meet market conditions.

18 **2.3.2.2 Mussel Farming Operations**

19 The mussel culture begins by hanging 10-foot seed ropes on the backbone. The seed
20 ropes are obtained from a shellfish hatchery and already have settled mussels on them.
21 Each rope can carry as many as 50,000 mussels, which are referred to as "spat" once
22 they are permanently attached to a surface. After 3 months, the mussel spat have
23 grown to 0.25-inch in size. The seed ropes are stripped, and the mussels are placed into
24 a machine that re-distributes them onto another continuous "fuzzy" mussel rope using a
25 biodegradable net sock to hold them in place until the mussels attach themselves to this
26 fuzzy rope. The mussel rope is tied and draped below the backbone in 5-10 meter (16-
27 32 foot) loops (to be determined by water depth at each longline location and depth
28 required to avoid predation) spaced one meter (3-feet) apart (Figure 2-12). At harvest

1 time, the end of the mussel rope is untied from the backbone and inserted into a
2 shipboard harvesting machine run by the boat's hydraulic system. The machine strips
3 the rope of its mussels and rotates them through spinning brushes to break the mussels
4 apart and clean them of any fouling. The most common fouling on mussels is
5 filamentous algae and barnacles, which is washed by seawater and returned to the
6 ocean from whence it came. Prior to return to the ocean, the sea water will be
7 screened, and any invasive species that is found will be collected and disposed of
8 onshore. Washing mussels during harvesting is recommended by the National Shellfish
9 Sanitation Program (FDA, National Shellfish Sanitation Program, 2017). After passing
10 through the machine, the mussels are transferred into a barrel of seawater before being
11 placed onto a sorting table. The market-size mussels are rinsed and placed into 25-
12 pound bags and stored in barrels of seawater for transport back to landing. Undersized
13 mussels are collected for re-attachment to ropes for continued grow-out.



Figure 2-12: Mussels Hanging Below the Backbone Line

14 **2.3.2.3 Oyster Farming Operations**

15 The culture of oysters begins by placing 7mm oysters into baskets with 6mm mesh nets
16 hung from the longline backbone (Figure 2-13). The oysters are transferred into baskets
17 with larger 12-mm mesh nets as they grow. About four hundred market-sized oysters

1 can be grown in a basket. During harvest, oyster nets are brought onto the boat and
2 dumped on deck. The oysters are shoveled onto the sorting table where the market-
3 sized oysters are counted and placed into trays. The undersized oysters are placed back
4 into the baskets for further growth. The market-sized oysters are washed with seawater
5 and placed into mesh bags for market. After transfer or harvest, the mesh nets are
6 pressure cleaned on the deck with ocean water using a hydraulic pump (using non-toxic
7 and biodegradable hydraulic oil) and hose and then stored on land until the next crop
8 cycle.



Figure 2-13: Basket of Shellfish Hanging on a Backbone Line

9 **2.3.2.4 Scallop Farming Operations**

10 The rock scallop is an emerging culture species along the West Coast, including in
11 California. Its potential for culture was first studied in the late 1970s and early 1980s in
12 California (Leighton and Phleger 1981). Since that time, it has been the focus of several
13 studies further evaluating seed collection, hatchery rearing and grow-out in California,
14 Washington, Alaska, and British Columbia, with resulting culture techniques described
15 (e.g., Monical 1980; Olsen 1984; Bourne et al. 1989, 1991; McDonald and Bourne 1989;
16 Leighton 1991; Chew 1999; Culver et al. 2006). Much of this work was done in the
17 1980s and early 1990s when there was an increased interest in developing aquaculture,
18 and government funding was available. Throughout this time, US West Coast growers

1 have cultured and sold rock scallops sporadically when natural sets of seed have settled
2 in grow-out gear being used to culture other shellfish (oysters, mussels). For example, in
3 California, commercial rock scallop culture and sales occurred in Drakes Estero (Leighton
4 2001), and in the Santa Barbara Channel in association with harvesting at offshore oil
5 and gas platforms just east and west of the proposed lease site (Richards et al. 2009),
6 and at times elsewhere. While markets have been strong for this highly valued – \$3.00
7 to \$7.00 per scallop depending on size - species, limited seed availability has precluded
8 continuous commercial production of rock scallops.

9 With the renewed national interest in aquaculture, the rock scallop is once again
10 receiving attention as a primary candidate for aquaculture expansion along the West
11 Coast. In the 10-Year NOAA Sea Grant Aquaculture Plan (Sea Grant Association 2016), it
12 is included in a list of seven viable commercial candidate aquaculture species warranting
13 further research to improve production. Researchers both in California and Washington
14 are actively working with growers on various aspects of rock scallop culture, including
15 seed production. Small batches of seed have been produced and grow-out trials have
16 been conducted, with efforts now focused on commercial scale production. In
17 California collaborative efforts are ongoing at UC Santa Barbara and CSU Moss Landing
18 Marine Labs, with work previously also at UC Davis’s Bodega Marine Lab (C. Culver, pers
19 comm).

20 **Seed:** Because commercial scale seed production is still lacking, SBSR plans to obtain
21 seed from: 1) natural sets at our lease site, and 2) CDFW-approved hatchery-produced
22 seed as it becomes available. Growers have relied solely on seed that naturally sets on
23 grow-out gear to culture small batches of rock scallops. SBSR is not sure how much seed
24 will naturally recruit at the Project site but will collect and use scallop seed that does.
25 Scallop collectors include mesh bags that enable water to flow through it with substrate
26 – such as frayed rope – inside of it. Our oyster baskets and mussel lines may also provide
27 surfaces where young scallops will settle. Recognizing that natural sets of seed will be
28 sporadic and unpredictable, and that seed is not yet available from commercial

1 hatcheries, SBSR also will collaborate and support ongoing efforts in hatchery-
2 production of seed. SBSR will obtain a broodstock collecting permit and provide
3 broodstock from CDFW-approved locations to those working on rock scallop seed
4 production. Samples of resulting seed will be provided to CDFW for certification prior to
5 being moved out on the SBSR Project.

6 **Nursery and Grow-out Phases:** The rock scallop is a bivalve, similar to mussels and
7 oysters. It too filter feeds, obtaining nutrition from phytoplankton in the water column.
8 It also utilizes dissolved and particulate organic matter as food. Many types of shellfish
9 grow-out gear have been and can be used for rock scallop culture (as described within
10 much of the literature), but some modifications are required due to the cementing
11 habitat of the scallop. Rock scallops initially attach to substrates using byssal threads
12 and then later cement (typically around 20-35 mm, depending on location) and conform
13 to a hard substrate. Such permanent attachment can make rock scallops difficult to
14 harvest, as the culture gear and scallop itself can be damaged upon removal. To address
15 this biological characteristic, rock scallops are typically grown in two phases; nursery
16 and grow-out. Seed scallops (scallops ≤ 25 mm) can be grown in pearl nets, oyster
17 baskets and other bivalve grow-out gear that has mesh small enough to hold the
18 scallops while also permitting water to flow through it. Small seed will be placed into
19 stacked mesh culture bags (Figure 2-14), or shellfish grow-out trays lined with mesh
20 (Figure 2-15). The cost and maintenance for each of these gear types vary, with the
21 required maintenance influenced by site-specific fouling. SBSR will evaluate which gear
22 works best at the site and use it.



Figure 2-14: Individual and Stacked Mesh Culture Bags



Figure 2-15: Shellfish Grow-out Tray with Mesh Lining

- 1 As rock scallops approach cementing size, SBSR will then transfer them into shellfish
- 2 grow-out trays (Figure 2-16), where they will remain until they reach market size.
- 3 Because scallops will want to cement within these trays, SBSR will artificially attach
- 4 them to substrates (flat PVC panels) using techniques that currently are being modified
- 5 and evaluated by researchers at UC Santa Barbara (Figure 2-17). These techniques
- 6 include inducing attachment by positioning the scallop with its growing edge against a
- 7 flat surface and securing it there with quick drying adhesive or plastic mesh over it such
- 8 that the scallop eventually uses its own glue to attach. Manipulation of the cementing
- 9 stage will enable SBSR to control where the scallops cement such that SBSR can

- 1 optimize space within the grow-out gear. Further, investigations of attachment found
- 2 that rock scallops grew significantly faster when artificially attached at a small size (~ 25
- 3 mm) (Culver et al. 2006).

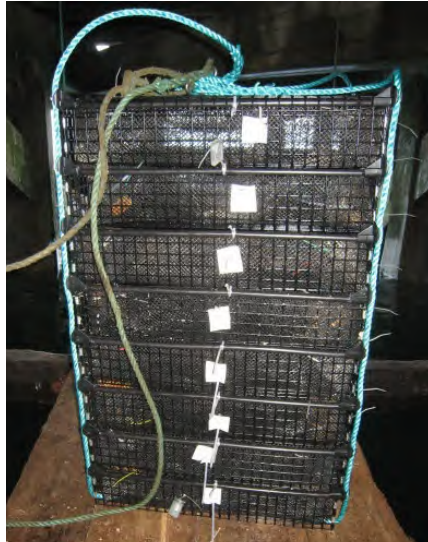


Figure 2-16: Stack of Shellfish Grow-Out Trays



Figure 2-17: Flat Panels Inside Grow-Out Trays

1 After sufficient growth, the small scallops will be transferred to shellfish grow-out trays
2 where they will be grown until they reach market size. As the scallops grow, they will be
3 periodically brought on deck, trays will be cleaned using pressurized seawater and
4 market-sized scallops removed, washed, counted, and placed into bags for market.
5 Undersized scallops will remain in the cleaned grow-out trays and returned to the sea
6 for further growth. Empty grow-out gear will be cleaned on deck with pressurized
7 seawater, taken onshore and stored for reuse with the next crop.

8 **Harvesting:** Prior to sale, scallops will be sampled and tested in accordance with the
9 National Shellfish Sanitation Program guidance in cooperation with the California
10 Department of Public Health (CDPH). Like mussels and oysters (and other bivalves), rock
11 scallops are susceptible to naturally occurring biotoxins which they obtain when they
12 consume toxin-producing phytoplankton. Although data for California are limited, rock
13 scallops have been found to contain saxitoxin, the toxin responsible for paralytic
14 shellfish poison (PSP), but not domoic acid (DA), the toxin associated with amnesic
15 shellfish poisoning and most common in the Santa Barbara Channel (Beitler 1991;
16 Lewitus et al. 2012; CDPH Biotoxin Data; Culver unpublished data). Unlike mussels that
17 are known to have rapid uptake and short retention of biotoxins, rock scallops

1 accumulate saxitoxin more slowly, but also retain it for longer. Similar to most
2 organisms, the biotoxins accumulate primarily in the digestive gland. Because rock
3 scallops typically are not consumed whole, this high-risk tissue can be, and often is,
4 discarded. However, saxitoxin also has been detected at levels above the public health
5 critical level in the adductor muscle of rock scallops – the tissue that is typically
6 consumed – although the toxin levels are generally much lower in the adductor muscle
7 than in the digestive gland that is often discarded (Beitler 1991). CDPH issues advisories
8 recommending that rock scallops (which are harvested recreationally) not be consumed
9 during PSP-producing blooms.

10 Once a crop is harvested, grow-out gear will be cleaned on deck with pressurized
11 seawater, taken onshore, and stored for reuse with the next crop.

1 **2.4 PROJECT TIMING**

2 The Project will reach full production by year four of operation. Ten lines will be
3 installed and planted in the first planting season so that any issues can be resolved prior
4 to large-scale deployment. Thirty-five additional lines will then be installed and planted
5 in each of the following two planting seasons.

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4 APPENDIX A: SBSR BOTTOM SURVEY

1 At the request of CDFW, SBSR conducted its own video survey of the seafloor at the
2 proposed Project location. Because water cloudiness and lack of light make it difficult to
3 document large fields of view and necessitate that the survey video camera be within a
4 meter of the seafloor, a survey transect grid was suggested by CDFW (with input from
5 the California Coastal Commission) to capture a representative sample of the seafloor at
6 the Project location (Figure 4-1). The vertical (north-south) red lines are spaced 400 feet
7 apart and the horizontal (east-west) red lines are spaced 667 feet apart. The black lines
8 indicate the intended location of the Project's longlines, and the dashed black lines mark
9 the perimeter of the proposed lease location.

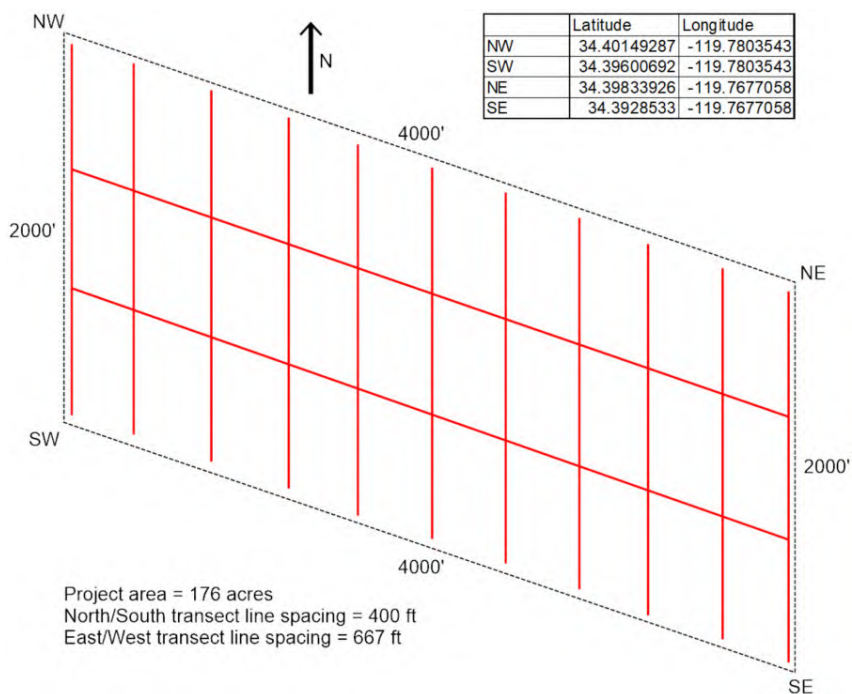


Figure 4-1: SBSR Project Bottom Survey Transect Lines

10 4.1 SBSR Survey Equipment and Methods

11 Due to the extraordinarily high cost associated with hiring a third party to conduct this
12 type of survey, SBSR chose to build its own survey equipment and to conduct the survey
13 from aboard its own Project support vessel, a Radoncraft Bahia.

1 For the purpose of conducting the survey, as well as future inspection of crops, gear,
2 and seafloor conditions, SBSR purchased and built a Blue Robotics BlueROV2 Heavy
3 Configuration ROV with 1080p HD video, high-power LED lights, temperature and depth
4 sensors, sonar, and a 100-meter depth rating (Figure 4-2). Two powerful green lasers
5 were mounted on the ROV to give an indication of scale in the video footage (similar to
6 the USGS video). GPS surface vessel position information was communicated to the
7 ROV via its data/tether cable and is displayed, in real-time, in the video footage. During
8 the survey, the ROV was towed approximately 100 feet behind the surface vessel at all
9 times.



Figure 4-2: SBSR's BlueROV2 Heavy Configuration ROV

10 Initially, SBSR planned to use the ROV's own sonar and altitude control software to
11 maintain constant elevation of the ROV above the seafloor in order to be able to focus
12 the camera and get good quality video capture. However, when this method of control
13 proved to be unsuccessful, SBSR built a subsea tow vehicle to mount the ROV on, which
14 could be pulled along on the seafloor behind the surface vessel. Figure 4-3 shows the
15 ROV mounted on the tow vehicle at the Santa Barbara Harbor launch ramp when it was
16 being adjusted for proper buoyancy. With the ROV mounted on the tow vehicle, its
17 video camera is maintained at 16" above the seafloor when under tow.



Figure 4-3: SBSR ROV and Tow Vehicle for Bottom Surveying

1 **4.2 Survey Data**

2 The survey was conducted over a period of three days on August 15, 17, and 18, 2019.
3 Figure 4-4 shows the surface vessel position, as well as the location of the individual
4 survey videos that were captured each day. The vessel positions each day are indicated
5 by blue, grey, and yellow lines. Start and stop points for each day are labeled. This
6 position data was extracted from the ROV's data log files and indicates the surface
7 vessel's positions when the ROV was enabled (not just when video was being recorded).
8 The red, yellow, green, and blue dots on the vessel trail lines indicate vessel position, at
9 five-minute intervals, at times when video was being captured.

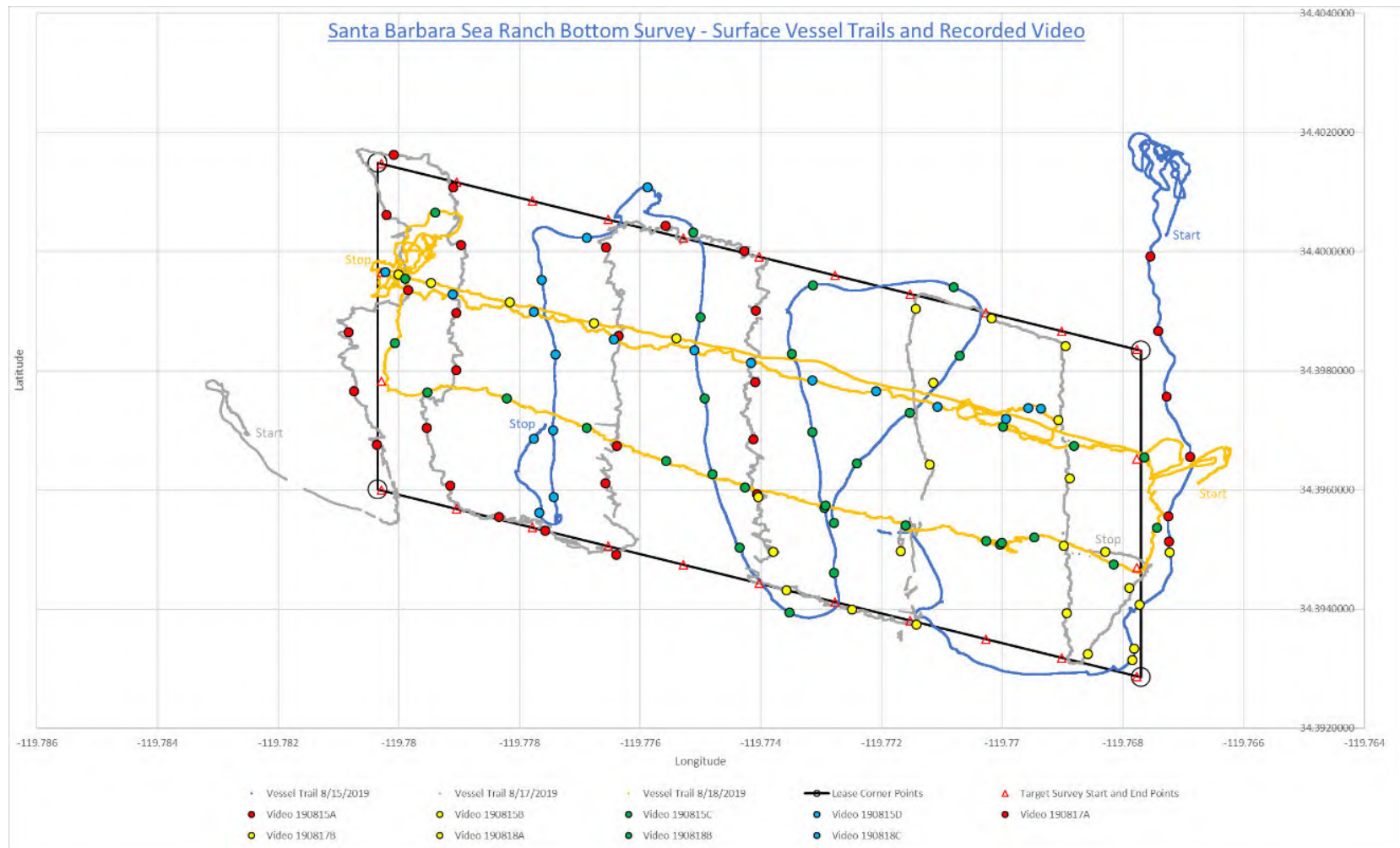


Figure 4-4: SBSR Bottom Survey - Surface Vessel Trails and Recorded Video

1 There were many SBSR learning opportunities throughout the process and more than
2 one setback along the way. As one can see from Figure 4-4, the ability to hold the
3 intended vessel course while towing the tow vehicle significantly improved on the
4 second day of the survey once SBSR figured out how to compensate for wind and/or
5 current conditions without using excessive engine power, which would have resulted in
6 an ROV speed-over-ground that was too high for good video capture.

7 SBSR intended to have two parallel green laser beams 26” apart operating during the
8 entire survey to indicate scale, but one of them failed on the first day due to water
9 intrusion.

10 Throughout the entire three days of surveying, SBSR captured approximately 35,000
11 feet (6.6 miles) of bottom video over the course of about 8.5 hours of filming. The
12 average speed of the ROV during the video capture had to be limited to just 0.68 knots
13 in order to provide good quality capture.

14 The video files and spread sheet associated with this SBSR survey are available upon
15 request.

16 Figure 4-5 is a still frame from one of the videos files captured in the survey (Note: one
17 of the two underwater green lasers had failed). The window in the upper right corner
18 labeled “Values” lists the following information that was captured in real-time
19 throughout the video:

- 20 • ROV depth in meters
- 21 • Surface vessel latitude and longitude (tow vehicle within 100 ft of surface vessel)
- 22 • Pitch, heading, and roll of the ROV
- 23 • Temperature inside the ROV
- 24 • Water temperature outside the ROV
- 25 • Battery voltage in the ROV



Figure 4-5: Example of a Still Frame from SBSR Survey Video

1 As mentioned before, it was necessary to be very close to the seafloor for the camera to
 2 be able to focus on the seafloor and not on particles in the water. The large majority of
 3 the video shows white sand/mud bottom with few features to provide contrast.
 4 However, whenever there was something other than white sand/mud bottom (such as
 5 the odd piece of dead kelp, a sea pen, a star fish, etc.) the camera did bring it into focus.
 6 Although there was very little live kelp seen in the survey videos, this still frame was
 7 selected to illustrate the ability of the ROV to capture detailed images when something
 8 other than sand/mud was present.

9 The video taken by USGS

10 ([https://www.axiomdatascience.com/maps/usgs.php#map?lg=5b9152b0-673d-11e2-](https://www.axiomdatascience.com/maps/usgs.php#map?lg=5b9152b0-673d-11e2-b541-00219bfe5678&z=15&ll=34.39302%2C-119.76795)
 11 [b541-00219bfe5678&z=15&ll=34.39302%2C-119.76795](https://www.axiomdatascience.com/maps/usgs.php#map?lg=5b9152b0-673d-11e2-b541-00219bfe5678&z=15&ll=34.39302%2C-119.76795)) nearby the SBSR proposed
 12 lease area is very similar in nature and in findings to that captured by SBSR.

13 4.3 SBSR Survey Findings

14 1. ALL OF THE VIDEO CAPTURED DURING THE ENTIRE COURSE OF THE SBSR SURVEY
 15 INDICATED THAT THE BOTTOM CONDITIONS FOUND BY SBSR WERE CONSISTENT

- 1 WITH THE FINDINGS OF THE USGS: CALIFORNIA STATE WATERS MAP SERIES NO.
2 3281 – OFFSHORE OF SANTA BARBARA, CALIFORNIA SHOWN IN **SECTION 2.2.1**
3 ABOVE, IN WHICH THE SUBSTRATE CLASS WAS FOUND TO BE “FINE – TO
4 MEDIUM-GRAINED SMOOTH SEDIMENT THROUGHOUT.
- 5 2. With a video capture width of 26” over 35,000 linear feet, the total area
6 surveyed was just 1.73 acres, or approximately 1% of the total 176 acre
7 proposed lease area.
- 8 3. Throughout the entire survey, the only thing that SBSR encountered that wasn’t
9 smooth, shallow sloped sand/mud bottom was what may have been an
10 abandoned mooring line that the ROV got temporarily entangled in.
- 11 4. THE SBSR SURVEY RESULTS, COUPLED WITH THE USGS RESULTS, INDICATE
12 BEYOND ANY REASONABLE DOUBT THAT THE ENTIRE AREA OF THE PROPOSED
13 LEASE CONSISTS ONLY OF SOFT, UNCONSOLIDATED, RIPPLED SEDIMENT (SAND
14 AND MUD) ON A SHALLOW SLOPE.

5 APPENDIX B: SBSR EQUIPMENT LIST

1

Item	Description	Location	Total Quantity	Installed or Day Use Only
Anchors	Helical screw anchor	In the sea floor at the end of each longline	160	Installed
Anchor lines	40mm diameter rope, 19-32 meters	Connection between anchors and backbone line	160	Installed
Backbone Lines	40mm diameter rope, 250-266 meters	Horizontal portion of the longlines	80	Installed
Ancor Line Buoys	480-liter LDPE submerged buoys	Attached to the anchor lines	160	Installed
Submerged Backbone Buoys	120-liter LDPE submerged buoys	Two meters above the backbone line	Approximately 3,040	Installed
Surface Buoys	300-liter LDPE surface buoys	On surface above the farmable section of the backbone	Approximately 1,040	Installed
Anchor Marker Buoys	120-liter LDPE surface buoys	On the surface above the anchors	160	Installed

Item	Description	Location	Total Quantity	Installed or Day Use Only
Radar Reflective Bouy	Buoy(s) with radar reflectors as required by USGS	Likely located at lease corners	1-4	Installed
Surface Buoy Ropes	0.5-inch co-polymer rope, 25 feet long	Between surface float and breakaway links	Approximately 1,040	Installed
Breakaway Links	1,100 lb. breakaway links for marine mammal entanglement mitigation	Between Surface buoy ropes and backbone rope	Approximately 1,040	Installed
Anchor Buoy Ropes	0.5-inch co-polymer rope, 70'-110' long	Between anchors and anchor buoys	160	Installed
Seed Lines (10-ft.)	Co-polymer rope blend, 10-ft. long, 2.5" diameter, cotton fabric attached, connected to backbone line with 1/8" breakaway line for marine mammal entanglement mitigation	Connects backbone line to seed lines	Approximately 1,000, dependent on crop mix	Installed
3-mm Oyster Mesh Nets	Five tier square lantern nets, 25"x25", five feet long, connected to backbone line with 1/4" line	Hung from backbone line	Up to 100 per longline	Installed
12-mm Oyster Mesh Nets	Five tier square lantern nets, 25"x25", five feet long, connected to backbone line with 1/4" line	Hung from backbone line	Up to 100 per longline	Installed
Mussel Growout Line	Continuous polypropylene "fuzzy" culture rope	Hung from backbone line	Up to 7,000 ft. per longline	Installed
Lashing Line	4mm polyethylene line, 6ft' each,	Between backbone line and growout line	Two per loop of mussel droppers	Installed

Item	Description	Location	Total Quantity	Installed or Day Use Only
Harvesting Equipment	Socketing, stripping, cleaning, and sorting machines.	Onboard harvest vessel	One set per vessel	Day use only
Hydraulic Pump	Hydraulic pump for running harvesting equipment	Onboard harvest vessel	One per vessel	Day use only
Harvest Bags	25 lb. bags with SBSR labeling	Onboard harvest vessel	Variable	Day use only
Small Boat	35-38' boat for farm maintenance and harvesting	Santa Barbara Harbor	1-3	Day use only
Large Boat	Up to 80' boat for high-volume mussel harvesting	Santa Barbara Harbor	1	Day use only
Shackles, etc.	Miscellaneous connectors for anchor and backbone lines	Longlines	TBD	Installed

6 APPENDIX C: SBSR LONGLINE STRUCTURAL ENGINEERING ANALYSIS

1 6.1 Executive Summary

2 Upon detailed review of both the Ventura Shellfish Enterprise (VSE) engineering analysis
3 and the Santa Barbara Mariculture Company’s (SBMC) use of a Bay of Biscay, Spain
4 project’s engineering analysis as a proxy, SBSR concluded that neither the VSE nor the
5 SBMC analysis would suffice for a SBSR proxy. The VSE location, environmental
6 conditions, and longline design were too dissimilar, and even though SBSR’s proposed
7 lease location is near to SBMC, SBSR concluded that SBMC’s proxy approach was not
8 adequately representative of the local environmental conditions or the SBSR longline
9 design, and therefore could not be used to satisfactorily mitigate Project risk. Hence, a
10 detailed location and design specific dynamic structural engineering analysis of the SBSR
11 longline designs was required.

12 Minimum requirements for breaking strength of the structural lines, holding power of
13 the anchors, breaking strengths for breakaway links for surface float lines, and breaking
14 strength for mussel dropper connections and sub-surface float connections have been
15 specified to achieve safety factors recommended for offshore structures by the
16 American Petroleum Institute (API RP2SK). Load cases were designed exceeding
17 Norwegian Standard NS-9415 recommendations for evaluation of both wave-dominated
18 and current-dominated extreme events. NOAA selected site-specific extreme wave,
19 current, and wind data for use in the analysis.

20 6.2 Numerical Modeling of the Backbone System

21 6.2.1 Numerical Modeling Approach

22 SBSR, with the support of Jacob Technologies and Orcina, LTD, conducted detailed static
23 and dynamic analysis of the SBSR longlines in extreme storm conditions using Orcina's
24 “OrcaFlex” finite element analysis software.

1 OrcaFlex is the world's leading software package for the design and analysis of a wide
2 range of marine systems.

3 **6.2.2 Numerical Model Setup**

4 Dynamic models of the SBSR longline system were developed for both shallow and deep
5 portion of the proposed lease area. A total of 24 separate load cases were evaluated for
6 extreme wave, current, and wind conditions with bespoke longline designs optimized
7 for specific water depth. The lengths of the anchor lines and backbones were adjusted
8 with change in water depth to maintain the desired geometric design characteristics of
9 the longlines.

10 SBSR also developed a detailed and proprietary spreadsheet for calculation of optimal
11 longline geometry, closed-form solution for the farmable section of the backbone, and
12 the required surface and subsurface buoyancy for maintaining tension and floatation.

13 The structural and hydrodynamic properties of the mussel lines were taken from
14 (Dewhurst, 2016). The diameter of the mussel ropes was set so that the dry weight of
15 the mussels was 8 pounds per foot of mussel rope, which represents the highest
16 reasonable estimate of maximum growth and presents the maximum expected load.

17 Since each backbone in the array has its own anchors and is independent of the other
18 backbones, an individual backbone was examined.

19 **6.2.3 Location**

20 The Project location is offshore from Santa Barbara, California, approximately five miles
21 west of Santa Barbara Harbor and within one mile of the shoreline (Figure 6-1).

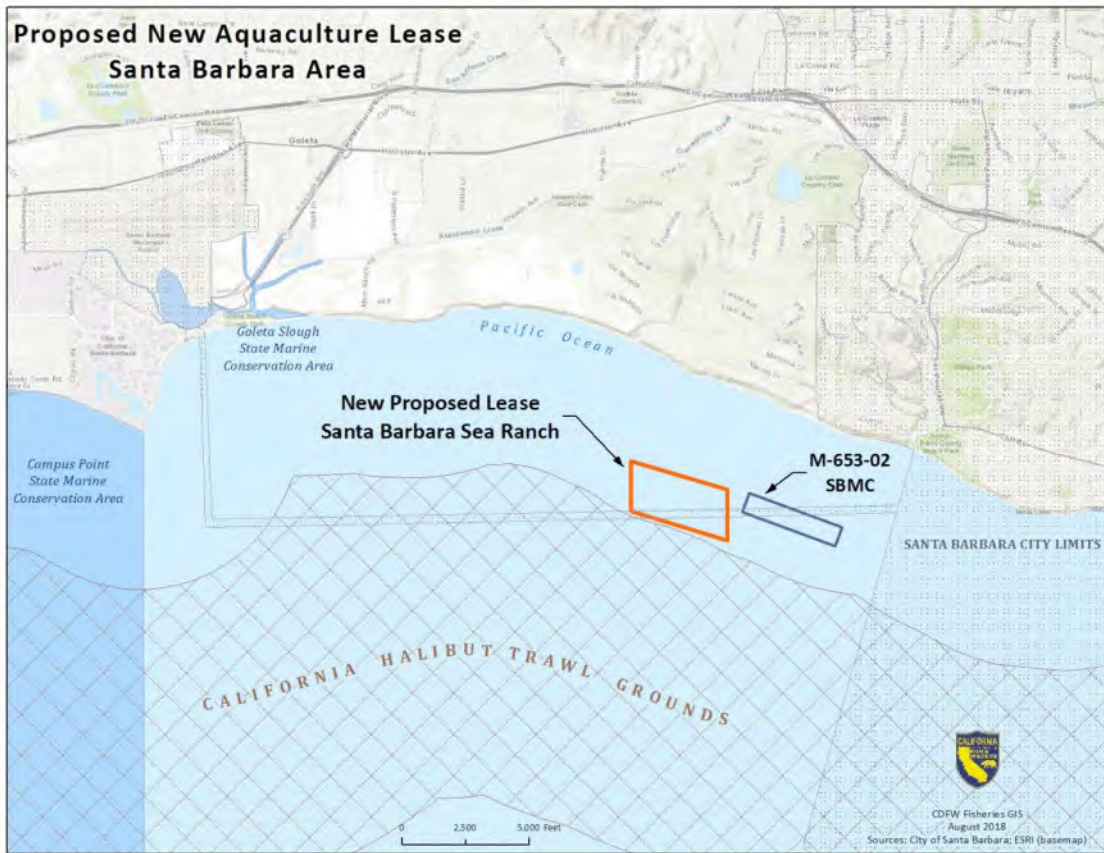


Figure 6-1: Proposed New Aquaculture Lease Santa Barbara Area

1 Corner locations and depths at the Project site are:

2	Latitude	Longitude	Depth (ft.)
3	34.40149287	-119.7803543	70
4	34.39600692	-119.7803543	101
5	34.39833926	-119.7677058	74
6	34.3928533	-119.7677058	111

7 **6.2.4 Environmental Parameters**

8 **6.2.4.1 Waves**

9 Extreme wave statistics were based on continuous, long-term wave observations from
 10 the US Army Corps of Engineers Pacific Wave Information Studies Station 83901 (Figure

- 1 6-2 and Figure 6-3) located approximately nine nautical miles south of the proposed
- 2 SBSR lease location.

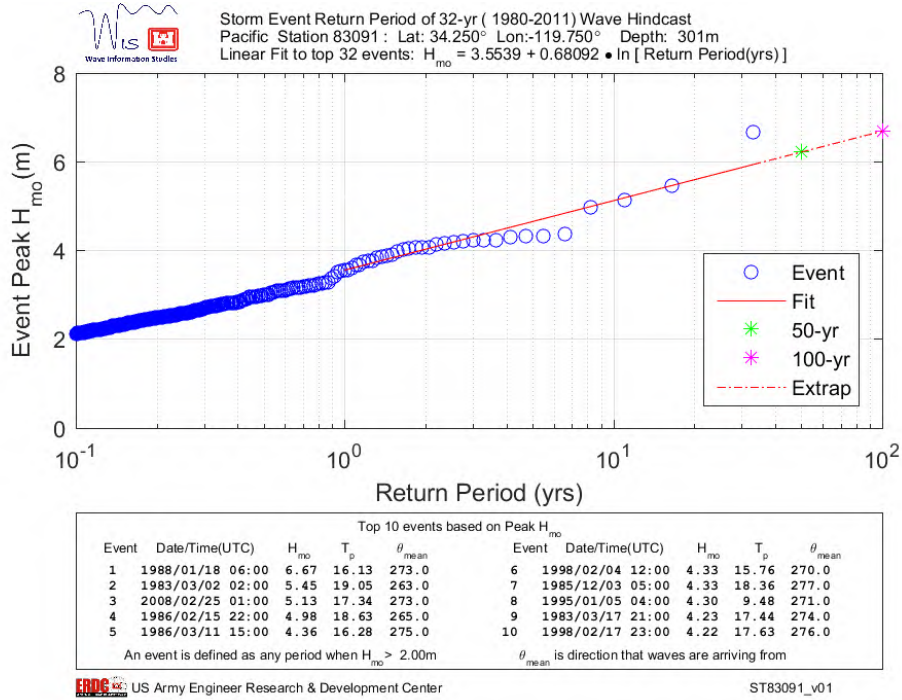


Figure 6-2: Storm Event Return Period of 32-yr (1980-2011) Wave Hindcast Pacific Station 83901 (34.250 degrees North, 119.750 degrees West)

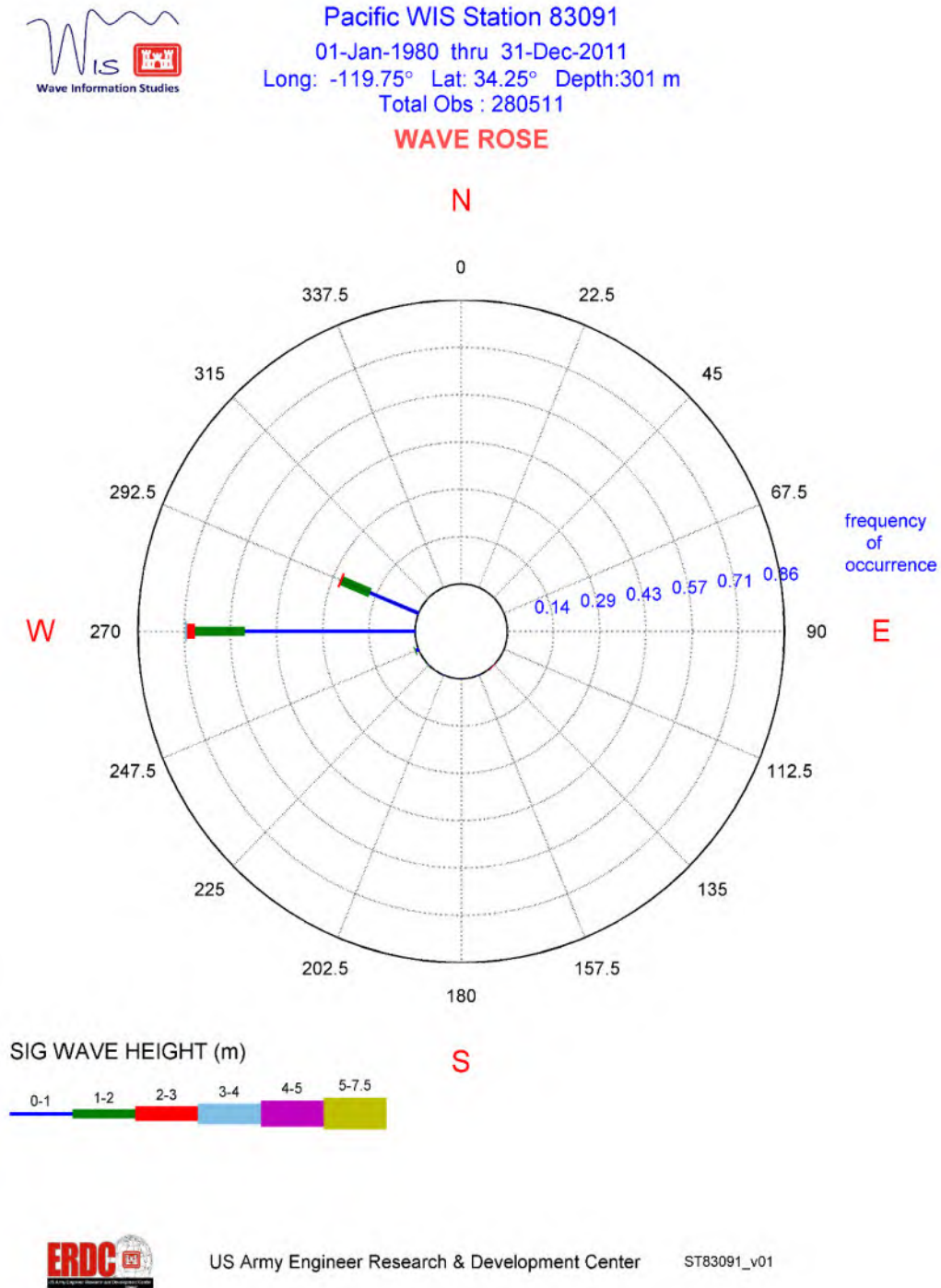


Figure 6-3: Wave Rose – Pacific WIS Station 83091

- 1 Table 6-1 lists the 10-year and 100-year extreme wave heights and associated peak
- 2 wave periods.

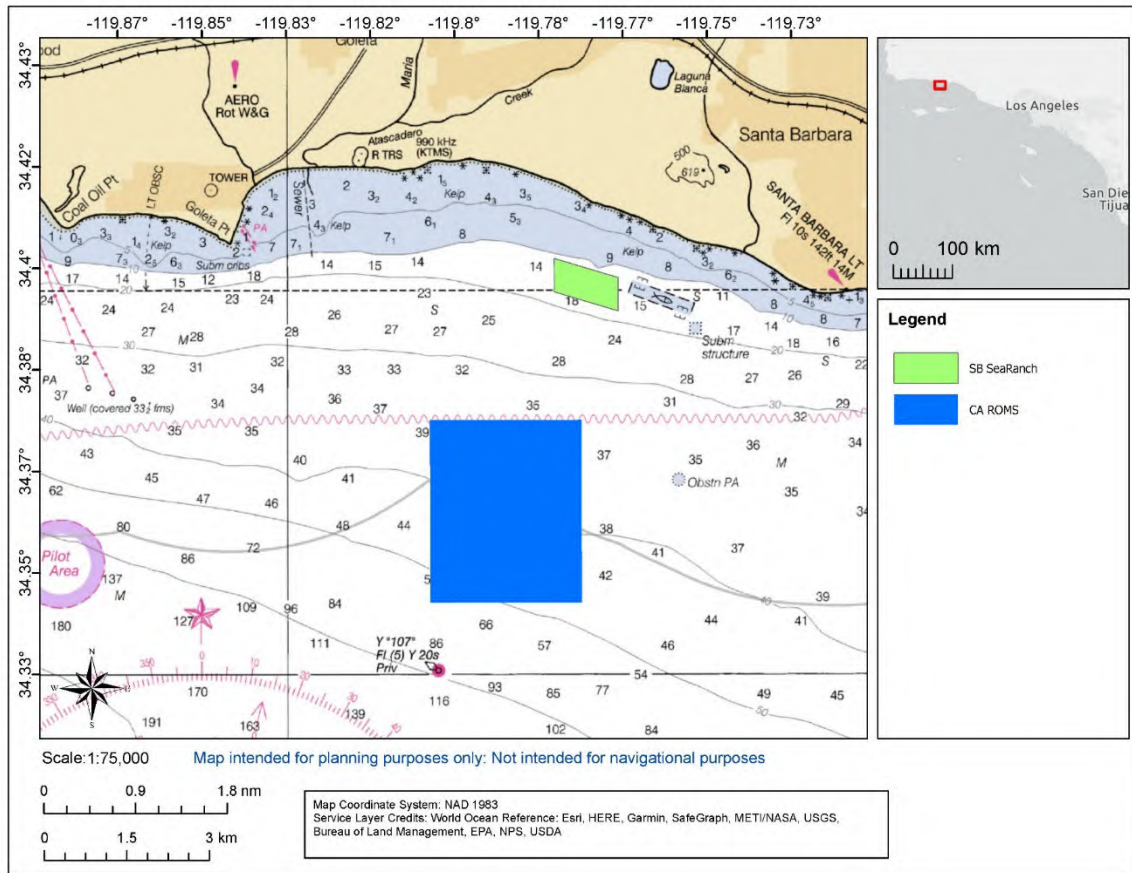
Table 6-1: Extreme Significant Wave Heights, Associated Peak Periods, and Direction

<u>Return Period</u> <u>(years)</u>	<u>Significant Wave Height,</u> <u>H_{mo} (m)</u>	<u>Peak Period,</u> <u>T_p (s)</u>	<u>Direction, θ_{mean}</u> <u>(degrees)</u>
10	6.67	16.13	273
100	5.13	17.34	273

3 **6.2.4.2 Currents**

- 4 Extreme current statistics were based on 2012-2019 CA Roms 3 km data provided to
- 5 SBSR by NOAA for an area defined by the following latitude and longitude coordinates
- 6 and shown in Figure 6-4 below.

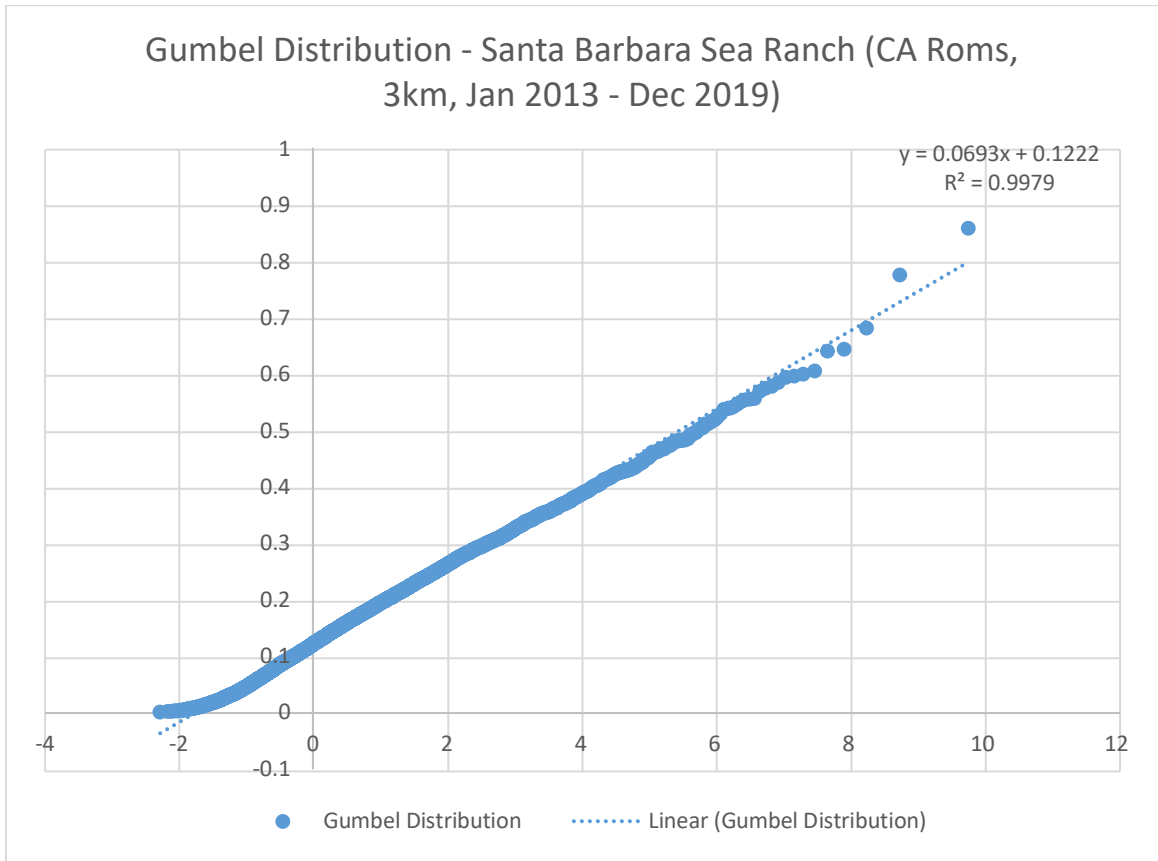
Lat	Long
34.37514	-119.805
34.3755	-119.775
34.34484	-119.775
34.34483	-119.805



1

Figure 6-4: CA Roms Current Measurement Location Nearest to SBSR Proposed Lease Location

- 2 Seven years of hindcast data were fit to a Gumbel distribution and extrapolated to
- 3 compute extreme values. The Gumbel distribution and linear fit are shown in Figure 6-5
- 4 and the extreme event return values are shown in Table 6-2.



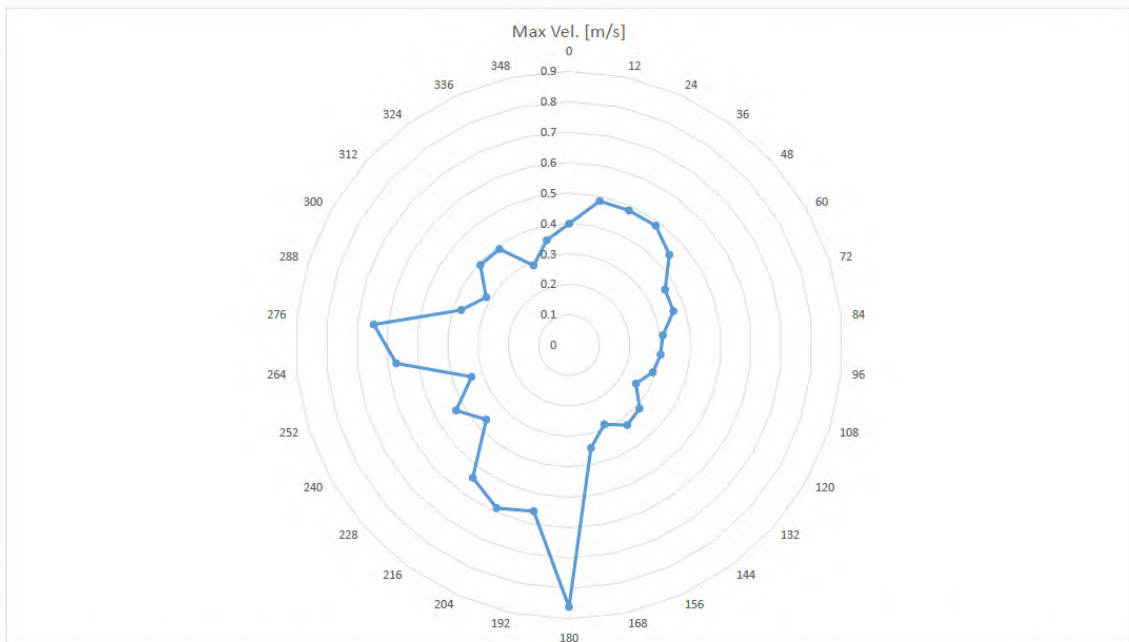
1

Figure 6-5: Gumbel Distribution – SBSR (CA Roms, 3km, Jan 2013 – Dec 2019)

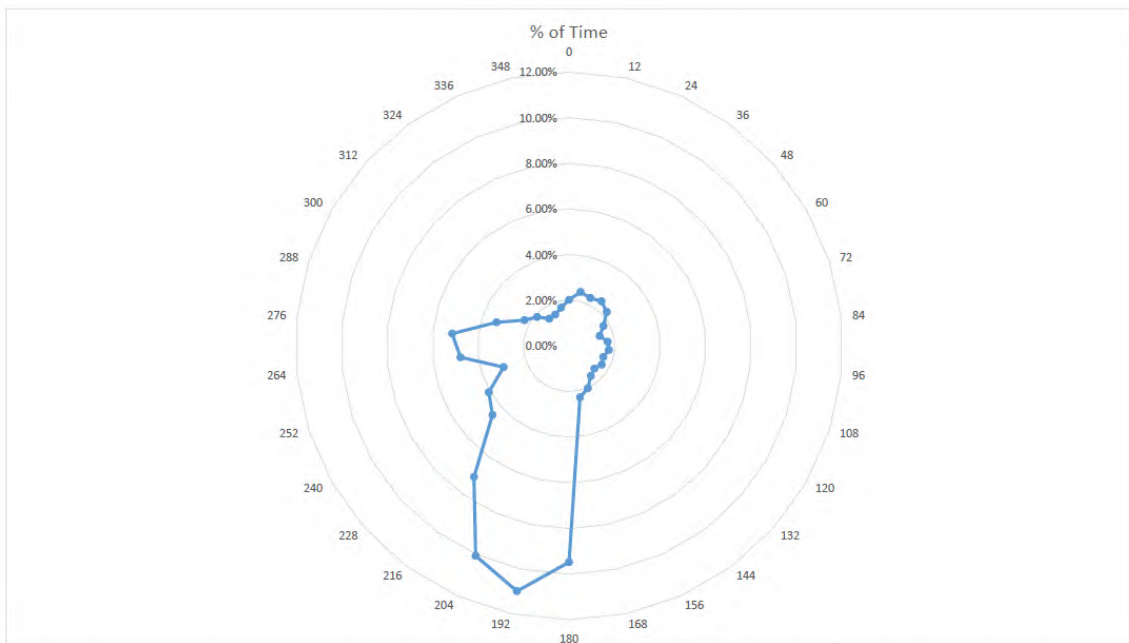
Table 6-2: Extreme Current Return Period and Velocity

<u>Return Period (years)</u>	<u>Current (m/s)</u>
0.1	0.4673
0.2	0.5155
0.3	0.5436
0.4	0.5636
0.5	0.5791
0.6	0.5917
0.7	0.6024
0.8	0.6116
0.9	0.6198
1	0.6271
2	0.6752
3	0.7033
4	0.7232
5	0.7387
6	0.7513
7	0.7620
8	0.7712
9	0.7794
10	0.7867
20	0.8347
30	0.8628
40	0.8828
50	0.8982
60	0.9109
70	0.9216
80	0.9308
90	0.9390
100	0.9463

- 1 Maximum current velocity & direction and percent of time & direction are given in
- 2 Figure 6-6.



Maximum current velocity and direction at the surface offshore Santa Barbara, 2012 - 2019 CA Roms 3 km resolution.



Percent of current direction at the surface offshore Santa Barbara, 2012 - 2019 CA Roms 3 km resolution.

Figure 6-6: CA Roms 3 km Current Data in m/s and % of Time vs. Direction

1 **6.2.4.3 Wind**

2 Extreme wind events were calculated from wind data from long-term wind observations
3 from the US Army Corps of Engineers Pacific Wave Information Studies Station 83901.
4 Using a Gumbel distribution, the 10-year extreme wind velocity was predicted to be
5 20.53 m/s from 315 degrees. This extreme wind condition was applied to all 48 load
6 cases. However, due the fact there is very little drag produced by the surface buoys in
7 air by comparison to the rest of the gear underwater, the wind was seen to have a
8 negligible impact on the loading of the system.

9 **6.2.4.4 Load Cases**

10 100-year waves, wind, and current do not generally occur simultaneously. Norwegian
11 Standard NS 9415 recommends examining both wave-dominated and current-
12 dominated extreme events (Standards Norway, 2009). For the 50-year current
13 dominated event, the 50-year current speed is combined with 10-year waves and wind.
14 Similarly, the 50-year wave event is combined with 10-year return period currents. In
15 the present analysis, the 10-year return period was used for the non-dominant forcing
16 (waves or current) for the 100-year events, thus the present analysis is an even worse
17 case than the one recommended in NS 9415.

18 **Wave Direction.** 10-year and 100-year extreme wave come from a mean direction of
19 273 degrees. Three wave directions, 273 degrees and 273 +/- 30 degrees, were used in
20 the load table to account for some potential variation in extreme wave direction.

21 **Current Direction.** The highest amplitude current (from the current rose) are seen to
22 come from the south. Three current directions, 180, 225, and 273 degrees were used to
23 represent:

- 24 1) The likely direction of extreme currents
25 2) The likely direction plus 45 degrees
26 3) The same direction as the extreme currents.

1 **Wind Direction.** Extreme wind was always in the direction of extreme waves (273
 2 degrees), but as mentioned above, wind has a negligible effect on loads.
 3 The 24 load cases evaluated for wave, current, and wind are listed in Table 6-3. All 24
 4 load cases were evaluated for longlines designed for both shallow and deep water (21-
 5 meters and 34-meters water depth) portions of the Project (a total of 48 specific load
 6 cases were analyzed).

Table 6-3: Extreme Load Cases for Waves, Current, and Wind

Load Case	Wave Direction (degrees)	Wave Return (years)	Current Direction (degrees)	Current Return (years)	Wind Direction (degrees)	Wind Return (years)
1	273	100	273	10	315	10
2	273	10	273	100	315	10
3	273	100	180	10	315	10
4	273	10	180	100	315	10
5	273	1	273	1	315	10
6	273	1	180	1	315	10
7	273	100	225	10	315	10
8	273	10	225	100	315	10
9	303	100	273	10	315	10
10	303	10	273	100	315	10
11	303	100	180	10	315	10
12	303	10	180	100	315	10
13	303	1	273	1	315	10
14	303	1	180	1	315	10
15	303	100	225	10	315	10
16	303	10	225	100	315	10
17	243	100	273	10	315	10
18	243	10	273	100	315	10
19	243	100	180	10	315	10
20	243	10	180	100	315	10
21	243	1	273	1	315	10
22	243	1	180	1	315	10
23	243	100	225	10	315	10
24	243	10	225	100	315	10

1 **6.2.4.5 Minimum Allowable Capacity of Structural Components**

2 Offshore industry standards (e.g. API RP2SK) require safety factors of 2.0 for pile
3 anchors and 1.67 for mooring lines (API, 2005). Here, the safety factor is the ratio of
4 ultimate capacity (e.g. breaking strength) to the maximum expected demand (e.g. the
5 maximum expected tension). The American Bureau of Shipping (ABS) recommends
6 increasing safety factors by 20% for synthetic lines, bringing the mooring line safety
7 factor up to 1.82. The API recommended safety factor of 2.0 was applied to helical
8 anchors. The minimum breaking strength of the structural lines (backbone and anchor
9 lines) and the minimum holding power of the anchors required to achieve these safety
10 factors was calculated.

11 **6.3 Calculation of Minimum Required Capacity of Structural Components**

12 For each longline design (21-meter and 34-meter water depths) under all 24 load cases,
13 with the mussel lines fully stocked (eight pounds per foot), the maximum expected
14 tension and forces in a 20 minute storm were calculated. A Rayleigh distribution of the
15 calculated loads was also performed, but maximum loads were found to be slightly less
16 than peak loads for the worst-case load cases, so the peak loads were used for
17 calculation of the minimum breaking strength of the structural lines and minimum
18 holding power of the anchors required to achieve safety factors recommended by API
19 and ABS for offshore structures. In the present analysis, the anchor safety factor of 2.0
20 was applied to both the vertical and horizontal forces on the helical anchors.

21 **6.4 General Design Considerations**

22 **6.4.1 Navigation Hazards**

23 **6.4.1.1 Buoy lines**

24 All buoy lines must be sinking lines, so they do not float on the surface under any
25 conditions.

1 **6.4.1.2 Backbone and Anchor Lines**

2 The backbone and anchor lines must not reach the surface under any condition, static or
3 dynamic.

4 **6.4.2 Anchor Loads**

5 Since helical screw type anchors will be used, the anchor loading under dynamic
6 conditions must be resolved into vertical and horizontal components to ensure
7 adequate design margin when selecting anchors.

8 **6.4.3 Vessel Lifting Capacity**

9 Longline geometry, crop weight, and submerged floatation all factor into the required
10 lift capacity of the vessel.

11 **6.5 Design 1: Shallow Water, 21-Meter Water Depth**

12 **6.5.1 Static Conditions**

13 Figure 6-7 and Figure 6-8 show the 21-meter longline design fully loaded with 10-meter
14 mussel droppers in static conditions. Static pretension in the backbone line under fully
15 stocked conditions was 4.76 kN (1,071 pounds).

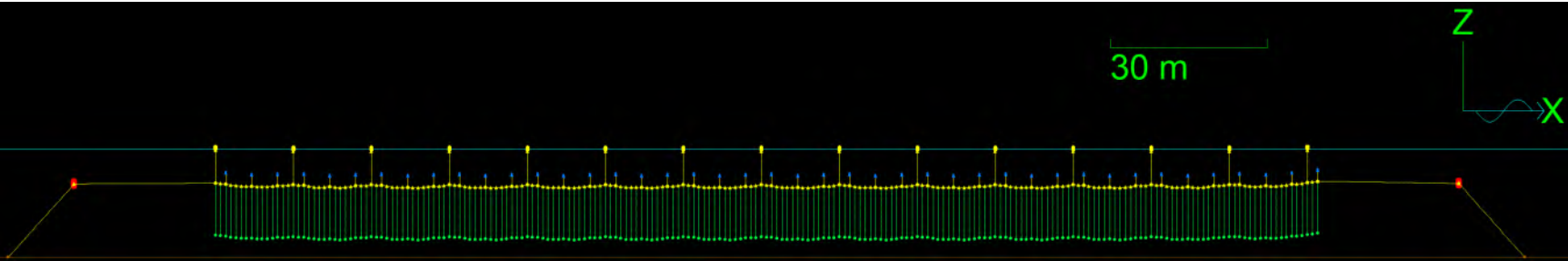


Figure 6-7: 21-Meter Depth Longline, Fully Loaded, Static Conditions (2D View)

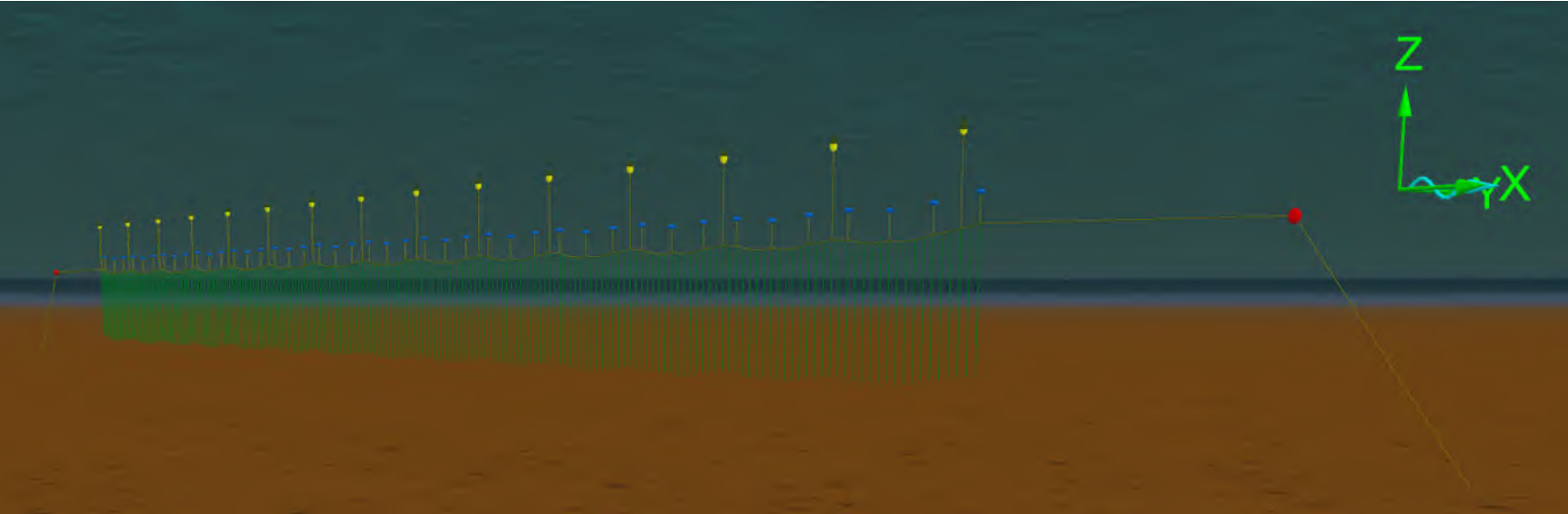


Figure 6-8: 21-Meter Depth Longline, Fully Loaded, Static Conditions (3D Shaded View)

1 **6.5.2 Prevention of Backbone and Crops from Reaching the Surface**

2 To prevent the backbone line and crop lines from reaching the surface in high-current
3 conditions, the subsurface floats along the backbone line are connected with two-meter
4 ropes and the corner float are attached to the anchor lines at a distance two-meters less
5 than the water depth at the anchor. In Figure 6-9 and Figure 6-10, under the worst cast
6 conditions of 100-year current (in-line with the backbone and perpendicular to the
7 backbone, respectively), the backbone line and crop lines all remain at least two meters
8 below the surface at all times, thus significantly reducing navigational risk due to vessel
9 entanglement with structural lines. Figure 6-11 shows the side view of the longline
10 system in 100-year current perpendicular to the longline.

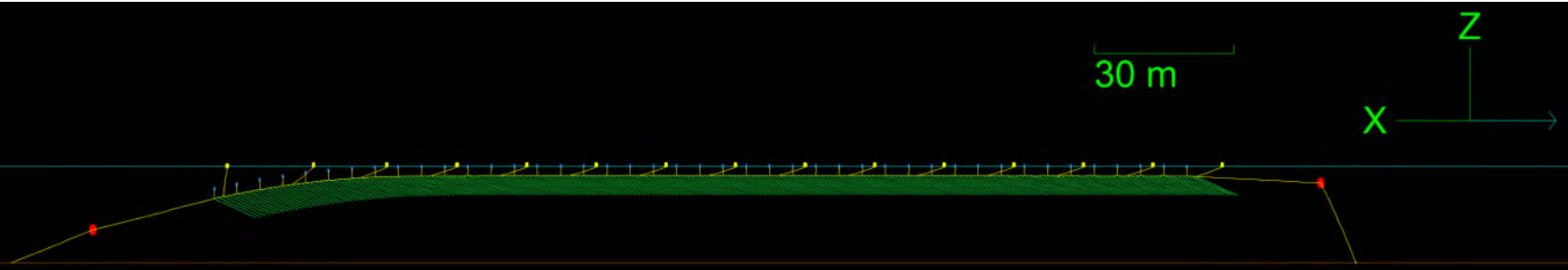


Figure 6-9: 100-yr Current In-line with the Longline, Backbone and Crop Lines Remain 2-Meters Below the Surface

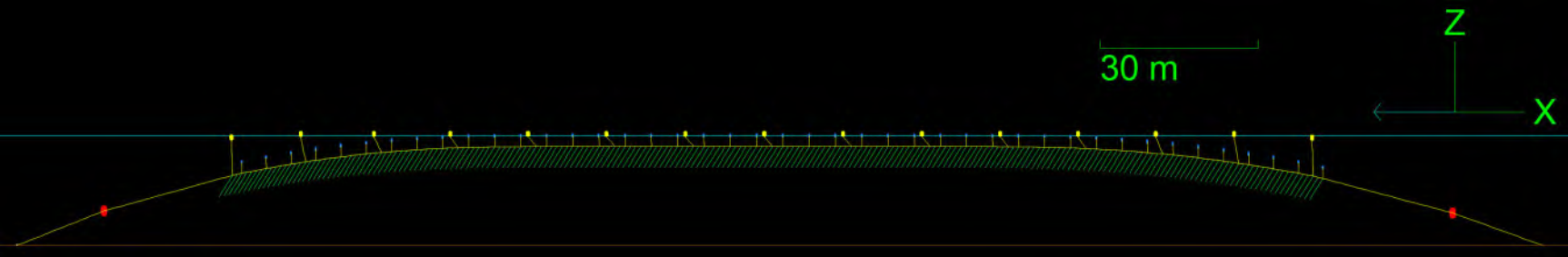


Figure 6-10: 100-yr Current Perpendicular to the Longline, Backbone and Crop Lines Remain 2-Meters Below the Surface

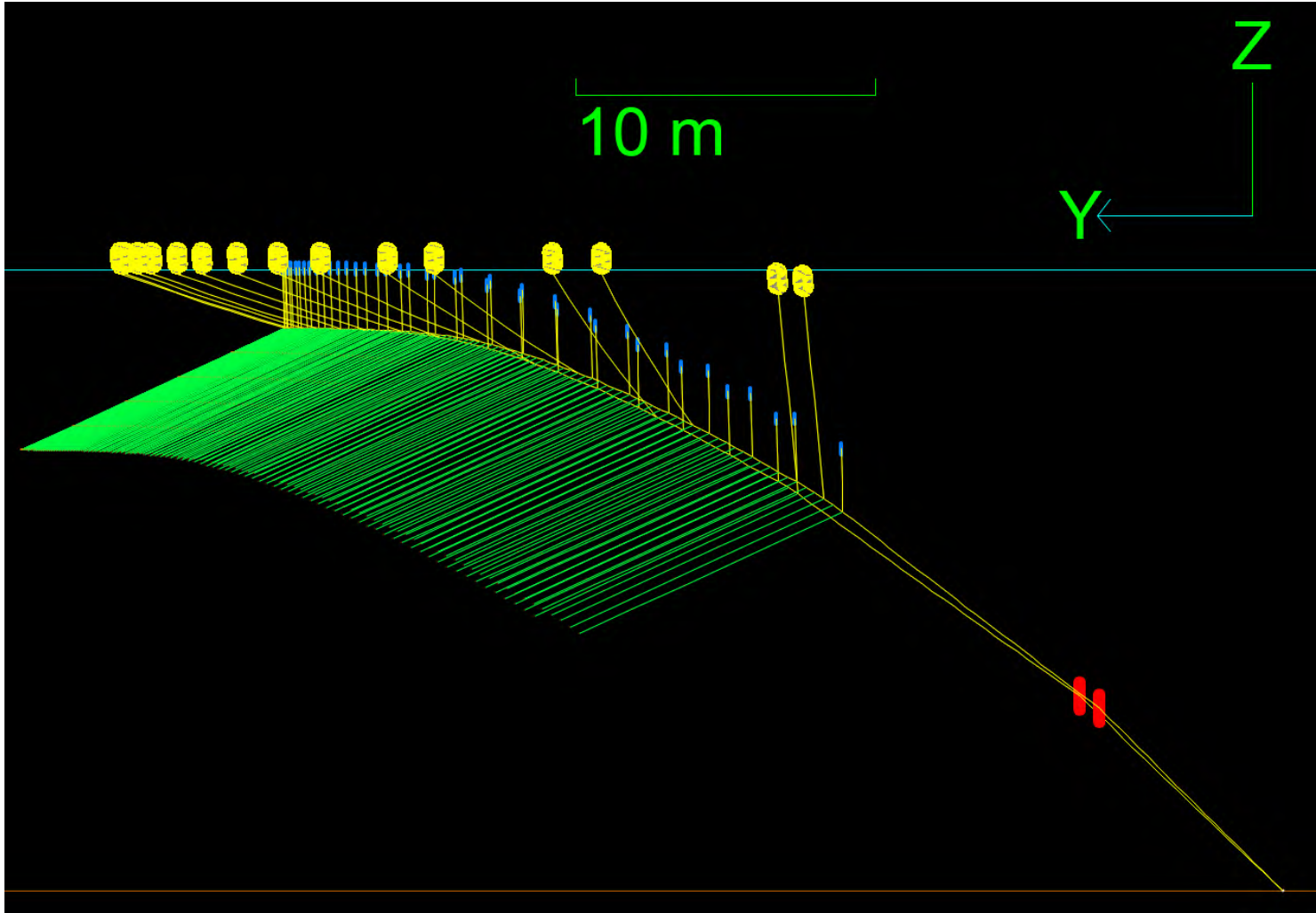


Figure 6-11: Side View, 100-yr Current In-line with Longline, Backbone and Crop Lines Remain 2-Meters Below the Surface, 21 Meter Depth

1 **6.5.3 Dynamic Loading**

2 The maximum expected tensions and forces in the longline system for each of the 24
 3 separate, fully stocked load cases analyzed are shown in Table 6-4.

Table 6-4: Maximum Expected Tensions and Forces on Structural Components in Extreme Storm Conditions, 21-Meter Depth

Load Case	Wave Direction (degrees)	Wave Return (years)	Current Direction (degrees)	Current Return (years)	Wind Direction (degrees)	Wind Return (years)	Maximum Line Loads (N)					
							Anchor Line 1 (anchor end)	Anchor Line 1 (top end)	Backbone End 1	Backbone End 2	Anchor Line 2 (top end)	Anchor Line 2 (anchor end)
1	273	100	273	10	315	10	67,166	70,665	67,309	24,266	22,813	23,636
2	273	10	273	100	315	10	65,701	67,827	65,832	18,045	16,840	17,397
3	273	100	180	10	315	10	78,941	79,978	79,066	70,625	70,532	73,313
4	273	10	180	100	315	10	68,875	70,533	69,003	72,873	72,751	74,070
5	273	1	273	1	315	10	48,176	50,252	48,332	11,921	10,894	12,773
6	273	1	180	1	315	10	57,172	58,659	57,326	57,338	57,178	58,605
7	273	100	225	10	315	10	88,500	90,889	88,587	56,920	56,714	57,601
8	273	10	225	100	315	10	84,398	84,908	84,519	54,391	54,201	55,419
9	303	100	273	10	315	10	59,491	61,176	59,653	20,016	19,725	23,649
10	303	10	273	100	315	10	59,915	61,935	60,054	13,350	12,543	15,860
11	303	100	180	10	315	10	68,444	69,908	68,581	71,642	71,542	73,827
12	303	10	180	100	315	10	54,974	56,172	55,147	74,795	74,681	75,799
13	303	1	273	1	315	10	47,474	49,559	47,631	9,627	6,787	10,233
14	303	1	180	1	315	10	52,646	54,139	52,819	60,782	60,645	62,336
15	303	100	225	10	315	10	74,848	76,679	74,966	62,159	62,014	63,377
16	303	10	225	100	315	10	66,756	68,743	66,894	55,596	55,450	57,465
17	243	100	273	10	315	10	78,863	79,999	78,991	43,516	42,867	43,408
18	243	10	273	100	315	10	62,322	63,850	62,485	26,934	26,291	27,379
19	243	100	180	10	315	10	149,235	146,940	149,326	122,882	122,798	124,600
20	243	10	180	100	315	10	106,288	105,724	106,394	96,366	96,255	97,437
21	243	1	273	1	315	10	52,116	53,989	52,266	16,479	15,818	17,733
22	243	1	180	1	315	10	81,717	82,158	81,842	74,965	74,837	76,069
23	243	100	225	10	315	10	132,854	132,167	132,957	113,007	112,903	113,809
24	243	10	225	100	315	10	124,627	124,778	124,712	94,214	94,082	94,907

4 The maximum expected vertical and horizontal components of anchor load for each of
 5 the 24 separate, fully stocked load cases analyzed are shown in Table 6-5.

Table 6-5: Maximum Expected Vertical and Horizontal Anchor Loads in Extreme Storm Conditions, 21-Meter Depth

Load Case	Wave Direction (degrees)	Wave Return (years)	Current Direction (degrees)	Current Return (years)	Wind Direction (degrees)	Wind Return (years)	Maximum Anchor Loads (N)			
							Horizontal		Vertical	
							A1H:	A2H:	A1V:	A2V:
1	273	100	273	10	315	10	66,650	19,598	23,479	17,234
2	273	10	273	100	315	10	61,083	11,669	29,483	13,682
3	273	100	180	10	315	10	74,520	53,887	29,169	58,754
4	273	10	180	100	315	10	66,094	49,852	27,719	67,732
5	273	1	273	1	315	10	47,124	9,855	20,549	8,960
6	273	1	180	1	315	10	54,060	46,412	26,666	52,141
7	273	100	225	10	315	10	85,754	45,572	31,315	44,564
8	273	10	225	100	315	10	77,994	51,634	33,777	42,052
9	303	100	273	10	315	10	57,553	21,419	20,740	12,718
10	303	10	273	100	315	10	55,778	9,961	26,923	12,342
11	303	100	180	10	315	10	66,014	59,401	23,320	60,069
12	303	10	180	100	315	10	51,684	51,739	24,152	69,128
13	303	1	273	1	315	10	46,474	7,082	21,134	7,976
14	303	1	180	1	315	10	50,915	46,567	23,825	52,870
15	303	100	225	10	315	10	72,860	45,184	26,561	45,923
16	303	10	225	100	315	10	64,550	42,795	28,873	41,812
17	243	100	273	10	315	10	75,870	29,705	25,370	31,787
18	243	10	273	100	315	10	58,706	17,069	26,270	21,453
19	243	100	180	10	315	10	135,981	105,998	56,062	90,265
20	243	10	180	100	315	10	98,818	70,990	44,016	74,586
21	243	1	273	1	315	10	49,311	13,082	22,480	12,194
22	243	1	180	1	315	10	73,554	58,288	37,248	57,671
23	243	100	225	10	315	10	121,866	84,509	52,142	85,271
24	243	10	225	100	315	10	116,627	69,354	50,443	71,875

1 Figure 6-12 shows an example of the 21-meter depth longline in 100-yr waves from 273
 2 degrees, 10-yr extreme current from 180 degrees, and 10-year extreme wind from 315
 3 degrees (load case 3). Given the actual historical environmental conditions at the
 4 Project, load case 3 is most likely the worst case loading that the system will experience.
 5 However, for extra precaution, forces and tensions seen in load case 19 will be used to
 6 size longline components.

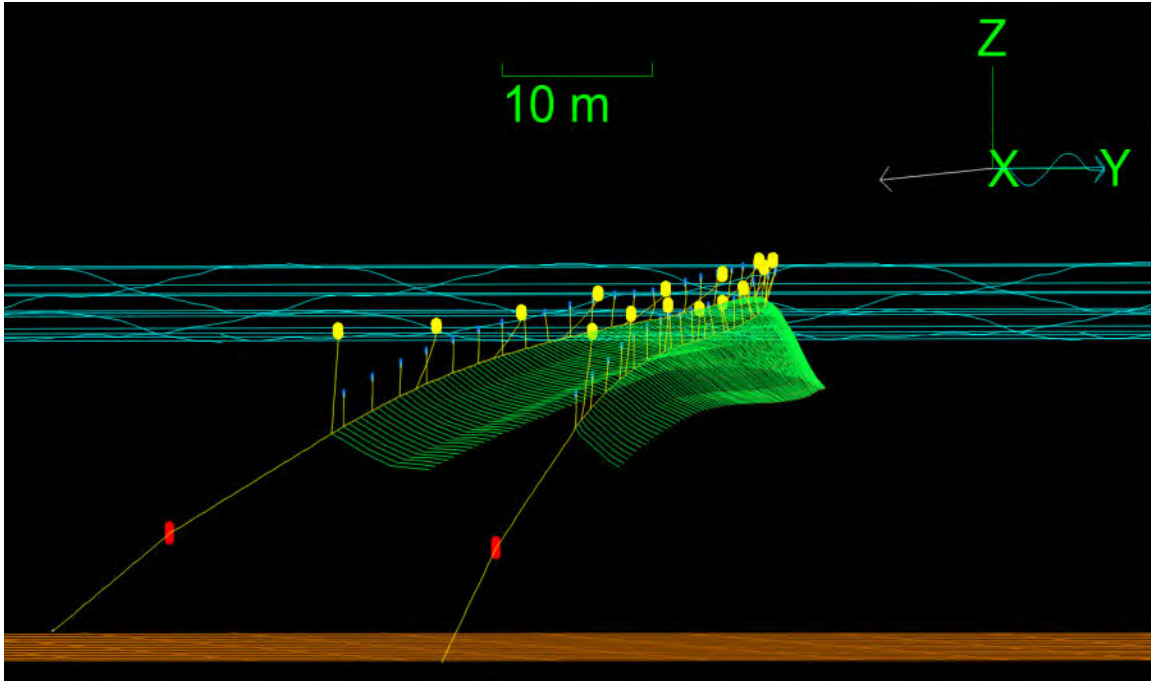


Figure 6-12: Longline Simulation, Load Case 3, 21-Meter Depth

1 **6.5.4 Vessel Lift Requirement**

2 Figure 6-13 shows the longline being lifted at the end of the farmable portion of the
3 backbone line to three meter above the surface by two simulated cranes that are six
4 meters apart to simulate likely vessel lifting conditions. Figure 6-14 show a similar lift in
5 the center of the backbone line. The maximum lift force required is 15 kN (3,375 lbs.).

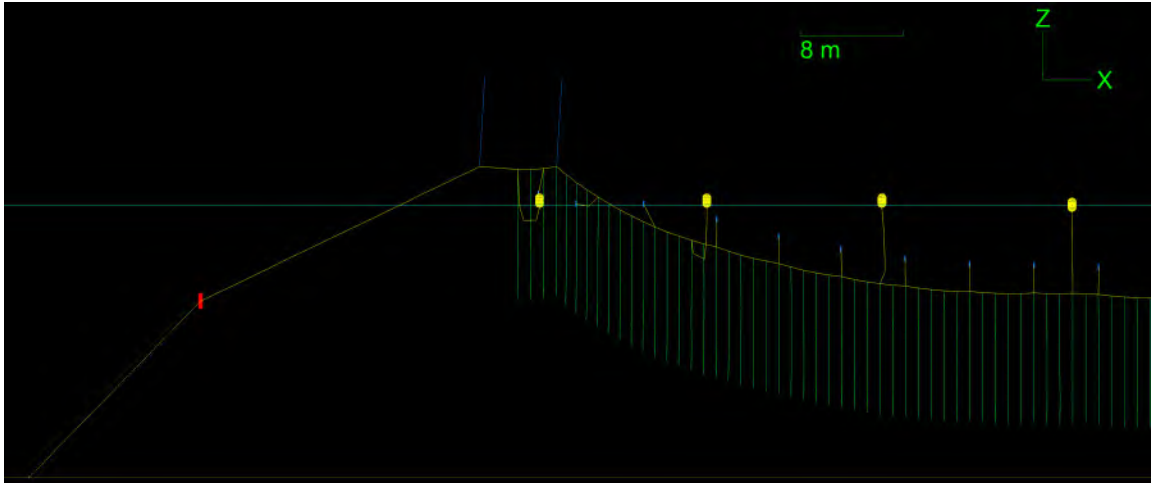


Figure 6-13: Longline End Lift - 21 Meter Depth

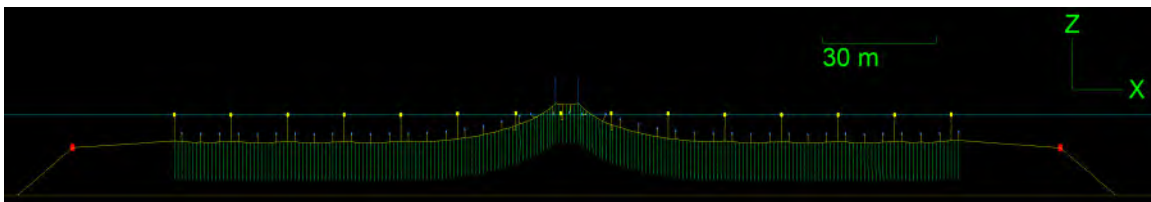


Figure 6-14: Longline Center Lift - 21 Meter Depth

1 **6.6 Design 2: Deep Water, 34-Meter Water Depth**

2 **6.6.1 Static Conditions**

3 Figure 6-15 shows the 34-meter longline design fully loaded with 10-meter mussel
4 droppers in static conditions. Static pretension in the backbone line under fully stocked
5 conditions was 4.12 kN (927 pounds).

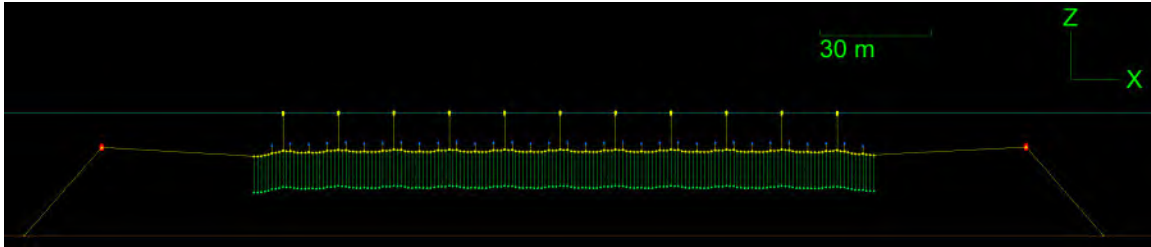


Figure 6-15: 34-Meter Depth Longline, Fully Loaded, Static Conditions (2D View)

1 **6.6.2 Prevention of Backbone and Crops from Reaching the Surface**

2 Similar to the 21-meter depth design, to prevent the backbone line and crop lines from
 3 reaching the surface in high current conditions, the subsurface floats along the
 4 backbone line are connected with two-meter ropes and the corner float are attached to
 5 the anchor lines at a distance two-meters less than the water depth at the anchor.
 6 Under the worst cast conditions of 100-year current (in-line with the backbone and
 7 perpendicular to the backbone) the backbone line and crop lines all remain at least two
 8 meters below the surface at all times, thus significantly reducing navigational risk due to
 9 vessel entanglement with structural lines.

10 **6.6.3 Dynamic Loading**

11 The maximum expected tensions and forces in the longline system for each of the 24
 12 separate, fully stocked load cases analyzed are shown in Table 6-6.

Table 6-6: Maximum Expected Tensions and Forces on Structural Components in Extreme Storm Conditions, 34-Meter Depth

Load Case	Wave Direction (degrees)	Wave Return (years)	Current Direction (degrees)	Current Return (years)	Wind Direction (degrees)	Wind Return (years)	Maximum Line Loads (N)					
							Anchor Line 1 (anchor end)	Anchor Line 1 (top end)	Backbone End 1	Backbone End 2	Anchor Line 2 (top end)	Anchor Line 2 (anchor end)
1	273	100	273	10	315	10	52,726	54,634	52,932	16,966	15,381	16,895
2	273	10	273	100	315	10	50,764	52,081	50,915	13,389	9,375	12,977
3	273	100	180	10	315	10	67,825	67,838	67,997	53,625	53,503	56,406
4	273	10	180	100	315	10	57,401	58,597	57,574	48,574	48,386	49,955
5	273	1	273	1	315	10	45,555	47,634	45,715	8,103	5,744	9,568
6	273	1	180	1	315	10	56,597	57,880	56,762	42,604	42,429	44,716
7	273	100	225	10	315	10	80,249	80,406	80,394	42,455	42,295	44,725
8	273	10	225	100	315	10	72,022	73,335	72,157	41,359	41,177	43,307
9	303	100	273	10	315	10	49,935	52,477	50,066	15,023	12,802	13,549
10	303	10	273	100	315	10	51,101	52,440	51,249	9,018	7,289	9,500
11	303	100	180	10	315	10	45,624	46,872	45,841	55,613	55,454	57,382
12	303	10	180	100	315	10	39,581	41,197	39,811	51,023	50,852	52,491
13	303	1	273	1	315	10	44,425	46,698	44,583	5,991	4,491	7,408
14	303	1	180	1	315	10	37,582	39,219	37,804	55,086	54,932	56,791

Appendix C – SBSR Longline Structural Engineering Analysis

15	303	100	225	10	315	10	58,873	60,422	59,024	41,667	41,464	43,409
16	303	10	225	100	315	10	54,954	57,192	55,090	38,762	38,428	40,248
17	243	100	273	10	315	10	72,591	74,234	72,726	19,845	18,813	20,892
18	243	10	273	100	315	10	58,268	60,123	58,415	13,842	12,592	14,555
19	243	100	180	10	315	10	127,612	128,448	127,692	103,938	103,846	105,841
20	243	10	180	100	315	10	99,894	101,194	99,999	81,263	81,150	82,814
21	243	1	273	1	315	10	47,677	49,466	47,855	8,322	7,141	9,818
22	243	1	180	1	315	10	67,968	69,188	68,100	63,011	62,867	64,444
23	243	100	225	10	315	10	118,316	118,830	118,406	80,939	80,821	82,262
24	243	10	225	100	315	10	102,369	103,575	102,462	72,136	71,983	73,356

- 1 The maximum expected vertical and horizontal components of anchor load for each of
- 2 the 24 separate, fully stocked load cases analyzed are shown in Table 6-7.

Table 6-7: Maximum Expected Vertical and Horizontal Anchor Loads in Extreme Storm Conditions, 34-Meter Depth

Load Case	Wave Direction (degrees)	Wave Return (years)	Current Direction (degrees)	Current Return (years)	Wind Direction (degrees)	Wind Return (years)	Maximum Anchor Loads (N)			
							Horizontal		Vertical	
							A1H:	A2H:	A1V:	A2V:
1	273	100	273	10	315	10	51,442	9,594	20,107	13,910
2	273	10	273	100	315	10	48,897	7,355	22,334	10,691
3	273	100	180	10	315	10	62,849	38,377	25,532	44,092
4	273	10	180	100	315	10	54,193	31,984	24,454	46,698
5	273	1	273	1	315	10	43,502	5,558	21,248	8,282
6	273	1	180	1	315	10	52,766	33,212	25,646	38,425
7	273	100	225	10	315	10	74,453	29,025	30,363	35,632
8	273	10	225	100	315	10	67,634	32,049	30,583	36,279
9	303	100	273	10	315	10	49,418	7,751	19,034	11,113
10	303	10	273	100	315	10	49,233	6,240	21,313	7,832
11	303	100	180	10	315	10	42,938	33,619	19,292	49,494
12	303	10	180	100	315	10	37,951	32,654	18,735	48,347
13	303	1	273	1	315	10	42,821	4,894	20,758	6,421
14	303	1	180	1	315	10	35,999	40,569	19,978	43,989
15	303	100	225	10	315	10	56,298	25,281	25,955	35,491
16	303	10	225	100	315	10	53,487	24,055	25,733	33,942
17	243	100	273	10	315	10	68,723	14,376	28,069	17,135
18	243	10	273	100	315	10	55,523	8,378	23,065	12,044
19	243	100	180	10	315	10	118,986	68,700	48,385	80,515
20	243	10	180	100	315	10	93,341	53,418	39,084	68,567
21	243	1	273	1	315	10	45,208	5,627	21,523	8,329
22	243	1	180	1	315	10	62,707	40,749	29,237	55,715
23	243	100	225	10	315	10	109,994	51,084	44,965	66,230
24	243	10	225	100	315	10	94,763	46,426	42,293	60,476

1 **6.6.4 Vessel Lift Requirement**

2 The lift force required to lift the backbone line to three meters above the surface by two
 3 simulated cranes that are six meters apart at the center of the backbone line (the
 4 heaviest part) is 14.5 kN (3,260 lbs.).

5 **6.7 Minimum Allowable Breaking Strength of Major Structural Components**

6 Table 6-8 shows the worst case required capacity (e.g. breaking strength) for the major
 7 structural components under all 24 load cases for both designs. These requirements will
 8 be used to size the structural components of the system. As expected, the worst-case
 9 loads were associated with the 21-meter design due to the higher crop mass and
 10 shallower water depth by comparison to 34-meter design. These loads occurred with
 11 100-yr waves from 243 degrees and 10-yr waves from 180 degrees. However, hindcast
 12 wave information shows that the highest waves at the project site will always come
 13 from 273 degrees (load cases 1-8), so the maximum expected loads and required
 14 breaking strength and holding capacities are those shown in Table 6-9. In this case, the
 15 system will be considerably overdesigned.

Table 6-8: Worst Case Loads and Required Structural Components Capacities (Not likely due to improbable wave direction)

	Load Case	Maximum Load (N)	Safety Factor	Minimum Breaking/Holding Strength (N)	Minimum Breaking/Holding Strength (lbf)
Line Load	19	149,326	1.82	271,773	61,149
Anchor Horizontal Load	19	135,981	2.0	271,962	61,131
Anchor Vertical Load	19	90,265	2.0	180,530	40,619

Table 6-9: Maximum Expected Loads and Required Structural Component Capacities

	Load Case	Maximum Load (N)	Safety Factor	Minimum Breaking/Holding Strength (N)	Minimum Breaking/Holding Strength (lbf)
Line Load	7	90,889	1.82	165,418	14,719
Anchor Horizontal Load	7	85,754	2.0	171,508	38,589
Anchor Vertical Load	4	67,732	2.0	135,464	30,479

1 **6.8 Minimum Allowable Breaking Strength of Mussel Line Attachments and Float**
 2 **Lines**

3 The maximum line loads for surface buoy lines, submerged buoy lines, and dropper
 4 connection lines are given in Table 6-10. As expected, maximum loading for these lines
 5 occurred with the 21-meter design since the backbone is set at 6-meter depth (the 34
 6 meter backbone line depth is set at 9 meters) and because the water depth is shallower.

Table 6-10: Maximum Loads for Surface Buoy Lines, Submerged Buoy Lines, and Mussel Dropper Connections – 21 Meter Depth Design

Load Case	Wave Direction (degrees)	Wave Return (years)	Current Direction (degrees)	Current Return (years)	Wind Direction (degrees)	Wind Return (years)	Maximum Line Loads (N)								
							Surface Buoy End 1	Surface Buoy Middle	Surface Buoy End 2	Submerged Bouy End 1	Submerged Bouy Middle	Submerged Bouy End 3	Mussel Dropper End 1	Mussel Dropper Middle	Mussel Dropper End 2
1	273	100	273	10	315	10	4,989	2,109	3,505	1,449	1,997	1,959	1,050	1,268	1,196
2	273	10	273	100	315	10	4,278	2,097	1,480	1,312	1,772	1,944	532	756	729
3	273	100	180	10	315	10	3,851	2,588	3,533	1,575	1,517	1,457	484	766	1,016
4	273	10	180	100	315	10	3,159	2,310	2,913	1,267	1,294	1,234	463	492	472
5	273	1	273	1	315	10	2,899	1,974	1,028	1,173	1,313	1,573	386	609	618
6	273	1	180	1	315	10	2,838	1,911	2,886	1,149	1,225	1,148	373	448	394
7	273	100	225	10	315	10	4,408	2,190	4,031	1,444	2,243	1,568	638	1,402	1,803
8	273	10	225	100	315	10	3,396	1,984	3,309	1,324	1,485	1,306	460	658	710
9	303	100	273	10	315	10	4,632	2,090	2,614	1,403	1,670	2,410	471	909	1,976
10	303	10	273	100	315	10	3,768	2,088	1,265	1,290	1,438	1,970	441	653	918
11	303	100	180	10	315	10	3,464	2,579	4,233	1,484	1,593	2,288	421	704	1,725
12	303	10	180	100	315	10	3,014	2,075	3,209	1,256	1,319	1,287	429	514	473
13	303	1	273	1	315	10	2,874	1,970	1,021	1,175	1,213	1,615	371	476	744
14	303	1	180	1	315	10	2,802	1,912	2,911	1,132	1,242	1,164	368	442	471
15	303	100	225	10	315	10	3,898	2,196	4,736	1,366	1,496	1,541	382	941	968
16	303	10	225	100	315	10	3,191	2,119	3,657	1,318	1,282	1,245	417	495	604
17	243	100	273	10	315	10	4,350	2,337	3,699	1,389	1,944	1,955	495	800	656
18	243	10	273	100	315	10	3,589	2,255	1,984	1,263	1,579	1,673	399	666	648
19	243	100	180	10	315	10	4,252	3,276	3,600	1,285	1,607	1,456	628	810	528
20	243	10	180	100	315	10	3,395	2,104	3,032	1,244	1,276	1,245	353	474	391
21	243	1	273	1	315	10	2,846	2,065	926	1,170	1,222	1,271	370	455	398
22	243	1	180	1	315	10	3,027	2,012	2,848	1,165	1,214	1,280	355	451	381
23	243	100	225	10	315	10	4,756	2,480	3,954	1,358	1,509	1,542	583	695	1,077
24	243	10	225	100	315	10	3,642	2,139	3,428	1,279	1,594	1,469	433	631	660

- 1 Table 6-11 shows the worst case required capacity (e.g. breaking strength) for the buoy
- 2 lines and mussel dropper attachments under all 24 load cases.

Table 6-11: Minimum Breaking Strength of Buoy Lines and Mussel Dropper Attachments

	Load Case	Maximum Load (N)	Safety Factor	Minimum Breaking Strength (N)	Minimum Breaking Strength (lbf)
Surface Buoy Line	1	4,989	1.82	9,080	2,043
Submerged Buoy Line	9	2,410	1.82	4,386	987
Mussel Dropper Attachment	9	1,976	1.82	3,596	809

3 6.9 Conclusion

4 To mitigate the risk of structural failure in extreme storms, key components of the
 5 backbone and mooring system must meet or exceed the required structural capacities in
 6 Table 6-8.

7 To mitigate the risk of buoy and mussel dropper attachment failure in extreme storms,
 8 those attachments and any breakaway links used must meet or exceed the required
 9 minimum breaking strength in Table 6-11.

7 APPENDIX D: ANCHOR INSTALLATION INFORMATION

1 7.1 Introduction to Fielder Marine Services, Ltd

2 Background

3 Fielder Marine Services Ltd, formerly Coromandel Dive, has been operational in New
4 Zealand for over 25 years. The primary focus of the company is in servicing the
5 Aquaculture Industry both in the Coromandel and more recently Australia, France and
6 the UK. Our core businesses are FMS Screw Anchor and FMS rock anchor installations,
7 underwater maintenance and commercial diving. Graham Fielder, one of the directors
8 of the company, has an honors degree in Marine Engineering and brings a wealth of
9 international experience to the business. Graham has spent many years working in the
10 Royal Navy, as a construction diver and as a Field Engineer within the oil industry,
11 before moving to New Zealand.

12 Screw Anchors

13 Screw anchors are a proven technology that has been used in the anchoring of marine
14 farms for many years now. Not only are the anchors cost effective, they also provide an
15 environmentally friendly mooring system which minimizes disruption to the seabed.
16 Fielder Marine Services Ltd has developed a superior underwater screw anchor system,
17 in which the entire drilling rig is portable. This enables installations to be carried out
18 from most vessels currently used in the aquaculture industry, and gives our clients the
19 option of using their own vessels or FMS to charter a suitable vessel for them.

20 All anchors/moorings are positioned using a RTK differential GPS system, giving sub
21 meter real time accuracy.

22 FMS anchors are of a shaft design, multiple lengths can be joined using , giving anchor
23 lengths of 3 - 18 meters. This allows FMS to adapt the anchors to suit the bottom
24 composition at the installation site. The anchor plates are manufactured from steel
25 plate pressed into a helical pitch with diameters 150 - 1200mm, again allowing

Appendix L: Anchor Installation Information

1 adaptations to suit bottom conditions. The anchors are all manufactured in house to a
2 high engineering standard giving FMS the ability to constantly improve our products. All
3 this combined provides a high-quality mooring system with superior vertical and lateral
4 holding power.

5 FMS have also developed a range of anchors suitable for rock substrates with similar
6 holding power and advantages of screw anchors, again with minimal disturbance of the
7 seabed and fast and efficient installation times.

8 Underwater Maintenance and Farm design

9 The company services and maintains the majority of the marine farm mooring systems
10 in the Coromandel and provides consultancy to aquaculture projects around the World,
11 with the emphasis being placed on practical solutions, with farm layout, design and line
12 handling solutions to maximise returns while minimising ongoing costs.

13 FMS's preventative maintenance services minimises crop loss and line breakages,
14 ensuring that the Aquaculture farmers get the maximum harvest possible. Our
15 underwater profiling survey's, help the Farmers to understand the underwater stresses
16 on their farms, and work out effective management systems to ensure maximum
17 productivity.

18 Mussel Farms NZ

19 FMS have spent the last 15years changing over existing lines to screw anchors and
20 installing new farms, with several thousand anchors installed.

21 Eastern Sea Farms Opoitiki - First Offshore Mussel farm

22 FMS have been involved in offshore farm from the very beginning, from advice on farm
23 layout to installing the anchors and lines, FMS then took on the role of the day-to-day
24 maintenance and development of the open ocean farm, to make Open Ocean Mussel
25 framing a reality.

26 This farm now has over 300 lines in the water and are presently building their own
27 processing factory.

1 **UK Offshore Shellfish Limited Lyme Bay UK**

2 FMS have been involved from the very first trial lines in the water to the development of
3 the first large scale offshore farm in the UK,

4 **Europe**

5 **FMS** are currently involved in a number of trial projects across Europe for Mussels ,
6 Seaweed, and Oysters

7 **Pearling Australia NT**

8 FMS have worked with Paspaley Pearling to gradually change their line moorings from
9 conventional to screw and rock anchors, with over 10,000 lines originally in the water ,
10 we have introduced production gains and cyclone proofing to their farms.

11 **Jervis Bay Australia**

12 Installation of anchors in an area of outstanding beauty and protection of seagrass beds.

13 **Catalina USA**

14 FMS installed the first Mussel farm anchors in federal waters off the coast of California

15 **7.2 Screw Anchor Standard Operating Procedure**

16 **PREPERATION**

- 17 1. Bolt on winches using 4 ht 16mm bolts each.
- 18 2. Attach clump weights insuring all shackles are moused.
- 19 3. Run hydraulic hoses and plumb into vessel.
- 20 4. Load gantry drum with 15 mm nylon rope long enough to reach bottom.
- 21 5. Attach arms to drill and suspend on 16mm rope with a safety.
- 22 6. Position GPS receivers and run cables.
- 23 7. Wire up PC, load software, and check transmission link.
- 24 8. Bolt first plate to anchor.
- 25 9. Test all hydraulic functions.

Appendix L: Anchor Installation Information

1 AT LOCATION

- 2 1. Lower weights over side of barge with crane.
- 3 2. Lower weights until just off bottom.
- 4 3. Steam vessel to first anchor location.
- 5 4. Lower weights to seabed, insure wire remains tight, parallel and as vertical as
- 6 possible.
- 7 5. Clip drill arms to wires.
- 8 6. Lower first anchor over side if single shaft pulls into drill chuck lock pin and
- 9 remove crane.
- 10 7. If multiple shafts, hold bottom section with gantry and remove crane.
- 11 8. Pick up top section with crane and position over bottom section.
- 12 9. Use gantry to pull two sections together and bolt up using 6 ht 16 mm bolts and
- 13 washers.
- 14 10. Remove gantry and repeat 6.
- 15 11. Lower depth measuring rope to bottom and lift up 2 m.
- 16 12. Remove safety from drill and lower.
- 17 13. Stop lowering when anchor touches bottom.
- 18 14. Start drilling.
- 19 15. Start assembly of next anchor.
- 20 16. Keep lowering drill as tension increases approx 2 M per minute penetration.
- 21 17. Monitor depth left to drill with depth rope and hydraulic pressure.
- 22 18. Stop on full penetration (arm approx 1.5 M off seabed.)
- 23 19. Back off pressure on drill and complete paperwork.
- 24 20. Take weight off drill.
- 25 21. Release pin.
- 26 22. Pull drill to surface and replace safety rope.
- 27 23. Pull up depth rope and tie off.
- 28 24. When skipper ready lift weights just off bottom, as vessel moves away check
- 29 warp does not tangle with winch wires.

Appendix L: Anchor Installation Information

1 25. Move vessel to next location and repeat from 4 omitting 5 as already done.

2 ON COMPLETION OF DRILLING

3 1. Lift clump weights to surface and one at a time attach crane and lift on board.

4 2. Unclip drill and bring onboard.

5 3. Repeat preparation instructions in reverse.

6 HAZARD ANALYSIS

7 1. Operating winches ensure operator trained and has a clear view of the winches.

8 2. All personnel to keep body parts and clothing clear of winches and wires at all
9 times.

10 3. No one under the drill unless secured by a safety stop.

11 4. When moving lead clump weights keep clear, use crane and winches to reduce
12 any swing and ensure boat motion is within safe limits.

13 5. Do not wrap depth measuring rope around hand or any other body part unless
14 drill is fully on bottom or secured by safety on surface.

15 6. Keep hands clear when moving anchors or plates. Use a crowbar or rope.

16 7. Do not go under anchors when being lifted by crane, use hard hats and safety
17 foot wear.

18 8. Keep fingers clear when assembling anchors and putting anchor into drill chuck.

19 9. Be aware of the tripping hazards on board with hydraulic hoses, anchors and
20 ropes.

21 10. Secure load during transit with tie down straps and ropes , to ensure it cannot
22 move with boat motion.

23 11. If weather to severe to safely bring weights on board , leave just under surface
24 and steam to calm water.

25 12. Stop job if weather prevents safe assembly of anchors or placement into drill.

26 13. Hard hat to be worn during crane use.

27 14. Use ear defenders during rattle gun use.

28 15. Wear gloves and steel capped boots when handling anchors and plates.

1 16. Be sun smart.

2 **7.3 Screw Anchors – General**

3 **VESSEL**

4 Normally use an appropriate vessel used for farm maintenance that has suitable stability
5 and gantries for lifting the lines. A crane is desirable but not essential.

6 HYDRAULICS REQUIRED 2500PSI AND 12 GALLON PER MINUTE

7 **TIME FRAME**

8 Expect to install between 12 and 24 anchors per 8 hours of vessel time on site with
9 suitable weather

10 **EQUIPMENT**

11 FMS HYDRAULIC DRILL

12 FMS WINCHES, WEIGHTS AND SWELL COMPENSATORS

13 Trimble GPS

14 **Hazards**

15 WEATHER: Only work in suitable weather.

16 Hydraulic Oil: Carry suitable spill response kit and check all hoses for wear and damage
17 before commencing work.

18 Use PPE suitable for work on the water and construction activities.

19 **ANCHORS**

20 Designed to suit the bottom conditions, steel shaft and plates in black steel, between
21 4.5m and 18m in length, designed to have a minimum of 25 year life expectancy.

22 Anchors are constructed on site and real time measurements are taken during drilling to
23 optimise anchors to ground conditions. Anchors are designed to disturb less than 1m²
24 of seabed on installation.

Appendix L: Anchor Installation Information

- 1 **ANCHOR ROPES**
- 2 No chains or hardware used to minimize environmental damage of the seafloor.



Process Overview for Vetting Application for New Aquaculture Lease

Applicant: Santa Barbara Sea Ranch, Inc.

March 13, 2025

Marine Resources Committee
California Fish and Game Commission

Kimi Rogers
Environmental Scientist
California Fish and Game Commission

Today's Overview



- Introduction to application
- Integrating applicant into new process
- Today's goals
- Next steps

Proposal



- 176 acres of state water bottom in Santa Barbara Channel
- Bivalve cultivation

Santa Barbara Sea Ranch (SBSR)

Application

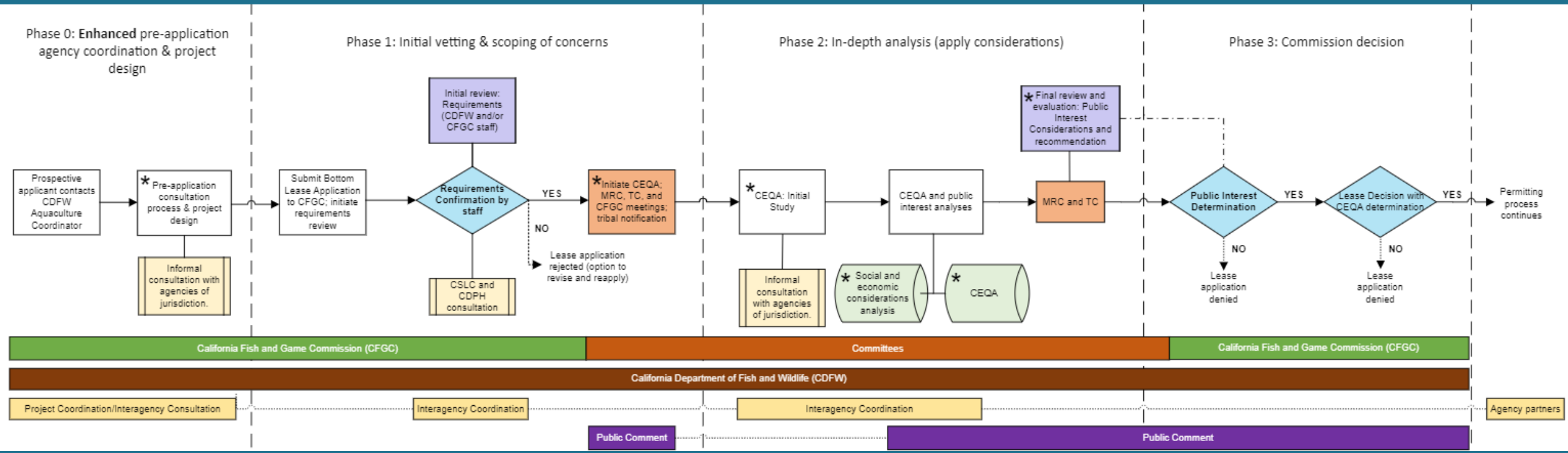


- 2018: Commission public interest finding
- 2019-2021: Applicant submitted iterations of a draft initial study for agency review
- 2021: Recommendations by agencies to pursue an environmental impact report (EIR), pursuant to California Environmental Quality Act (CEQA)
- 2021-2024: Application paused while applicant sought funding for environmental review
- 2024: Application resumed

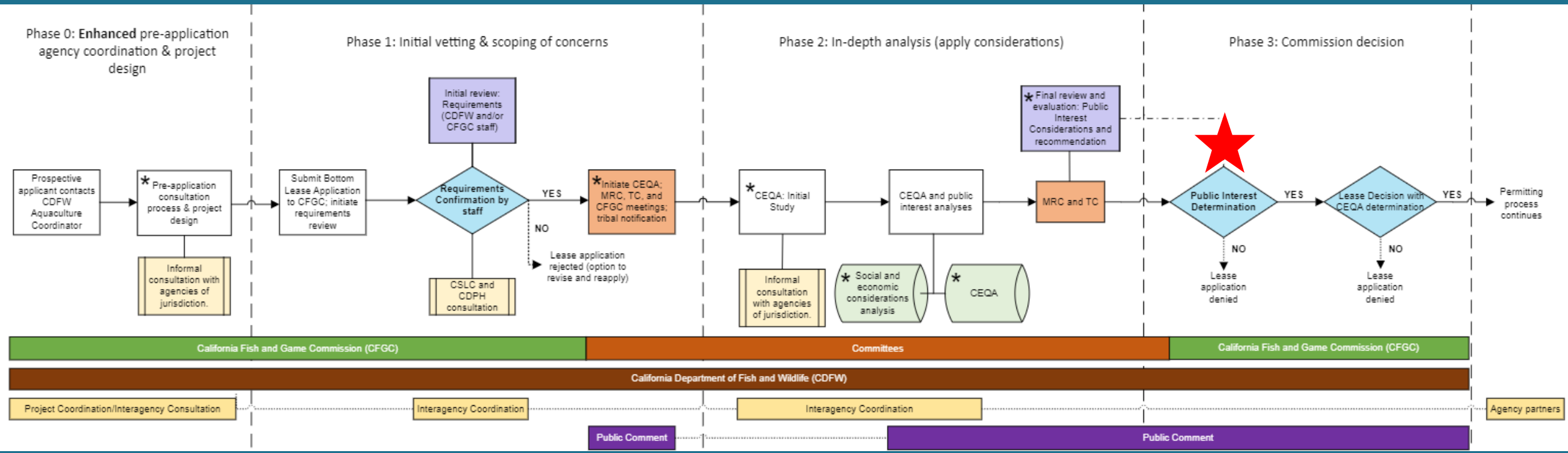


Integrating SBSR's Application into the Enhanced Leasing Process

Enhanced Leasing Process – Approved August 2023



Enhanced Leasing Process – Approved August 2023



SBSR Application Continued

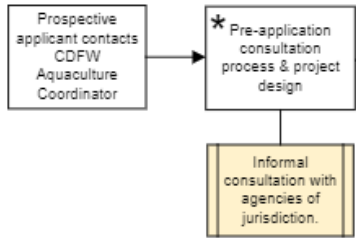


- Independently met with agency representatives
- Legal requirements met prior to public interest determination
- Significant work and effort by SBSR, including:
 - Meeting with agencies
 - Independent bottom surveys, iterations of draft initial study and independent environmental review
 - Developing engineering models for gear

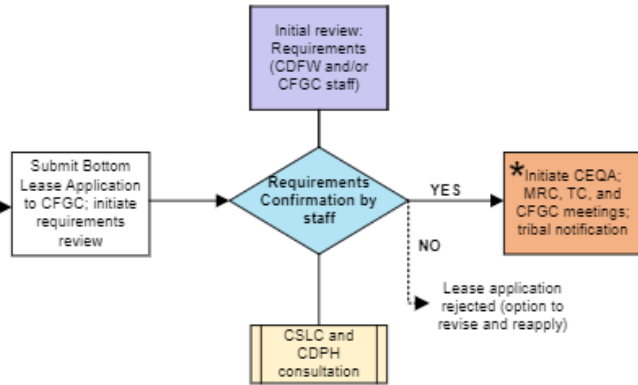
Enhanced Leasing Process



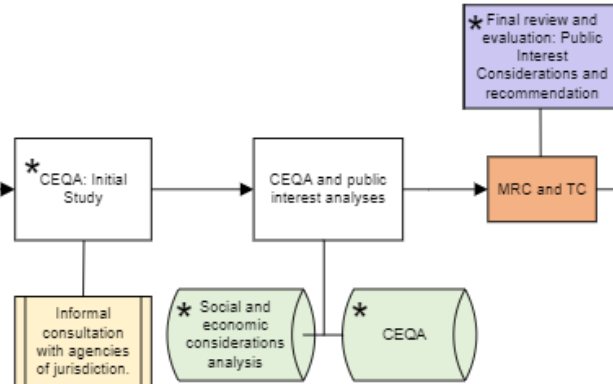
Phase 0: Enhanced pre-application agency coordination & project design



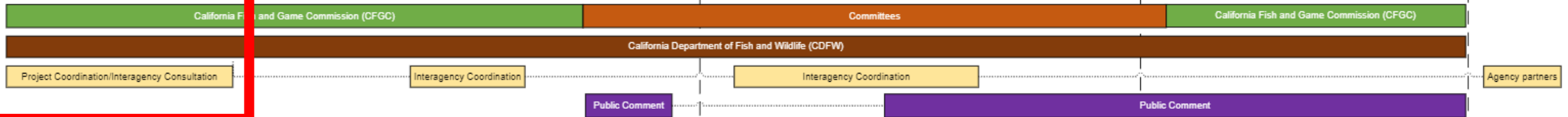
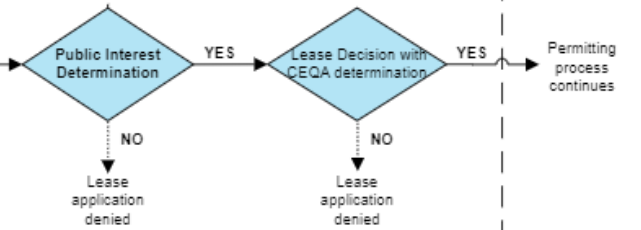
Phase 1: Initial vetting & scoping of concerns



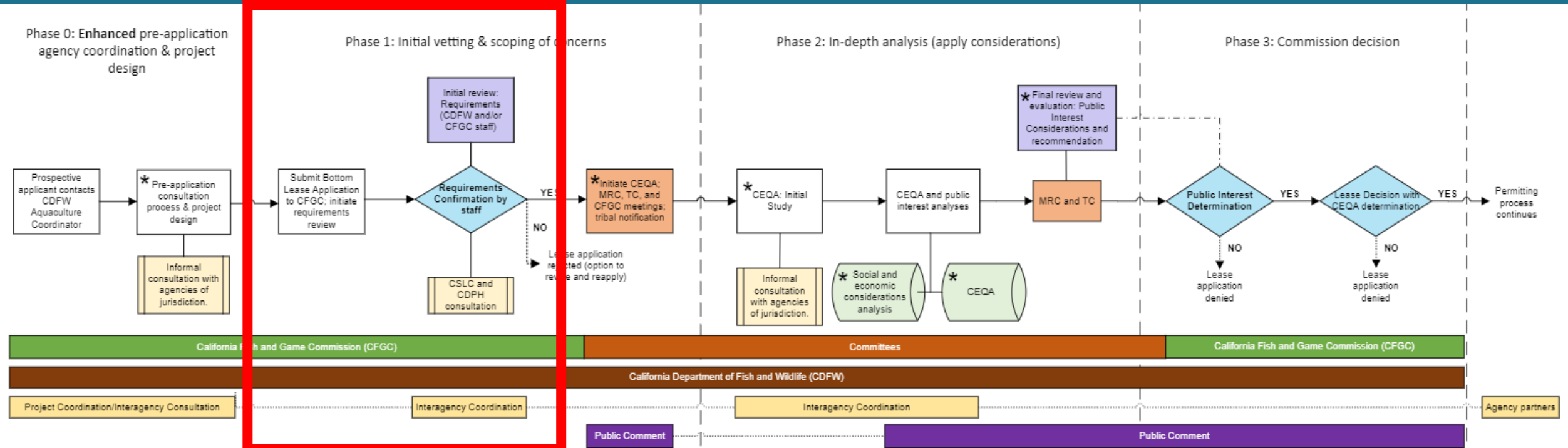
Phase 2: In-depth analysis (apply considerations)



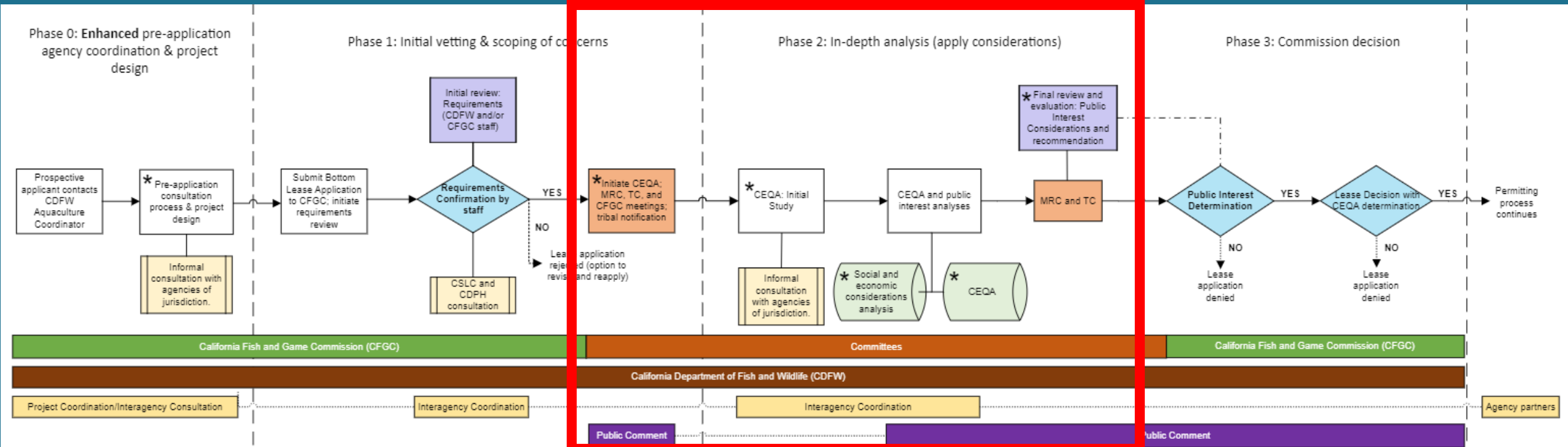
Phase 3: Commission decision



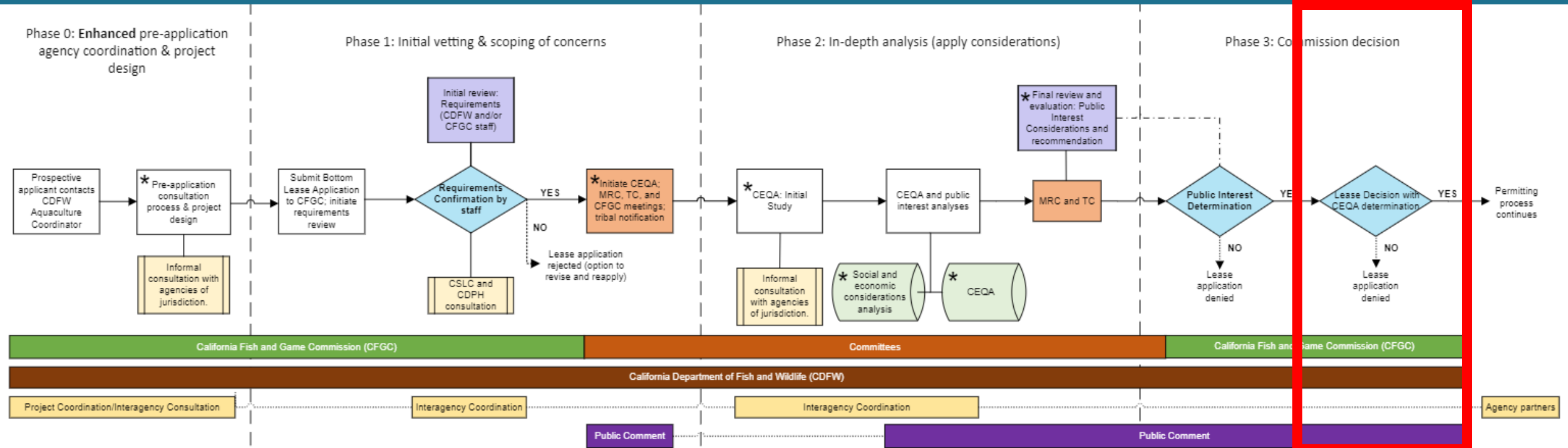
Enhanced Leasing Process



Enhanced Leasing Process



Enhanced Leasing Process

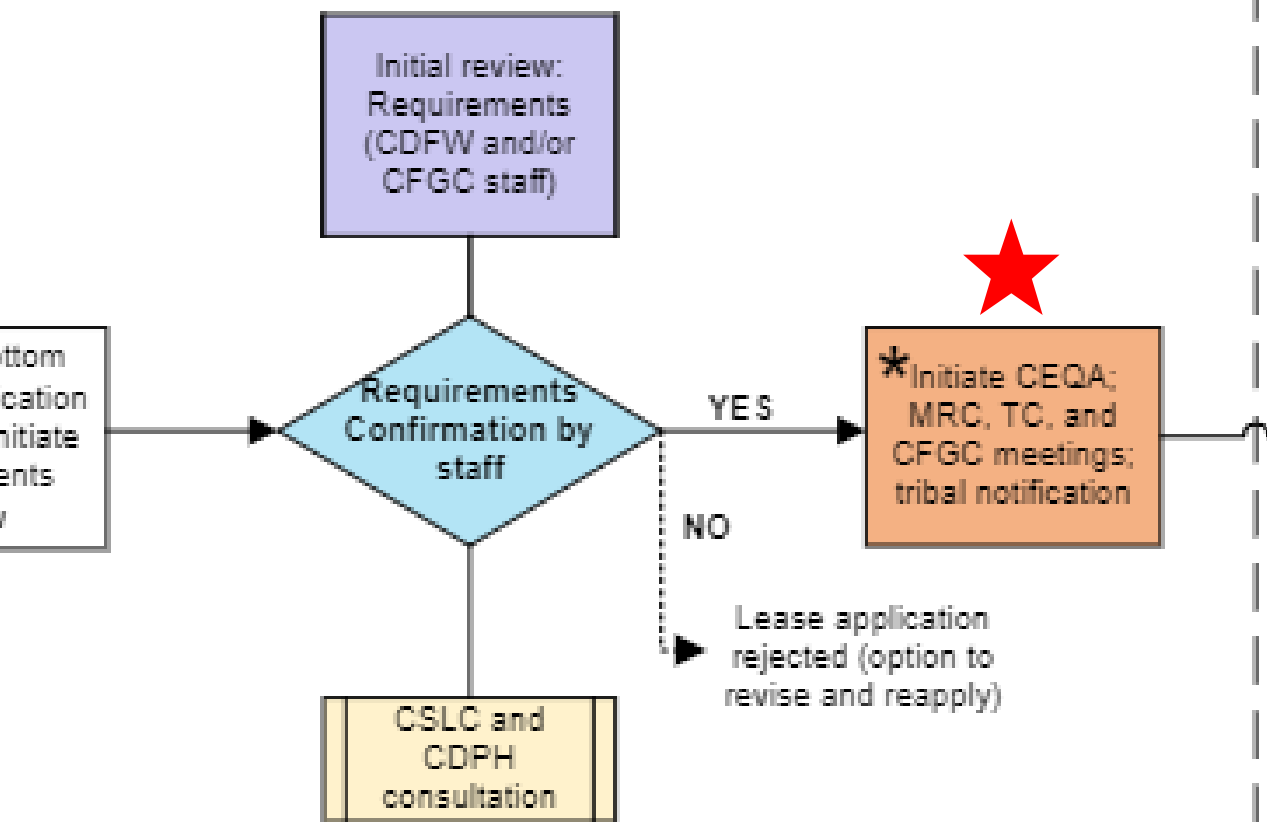




Where are we at in this process?

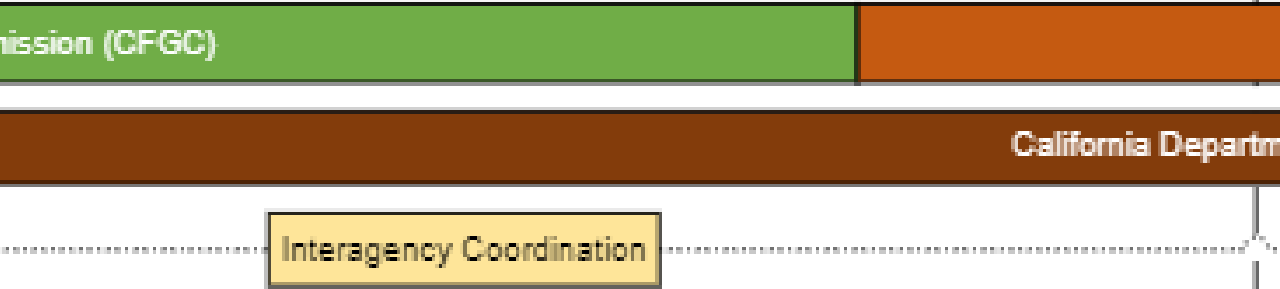


Phase 1: Initial vetting & scoping of concerns

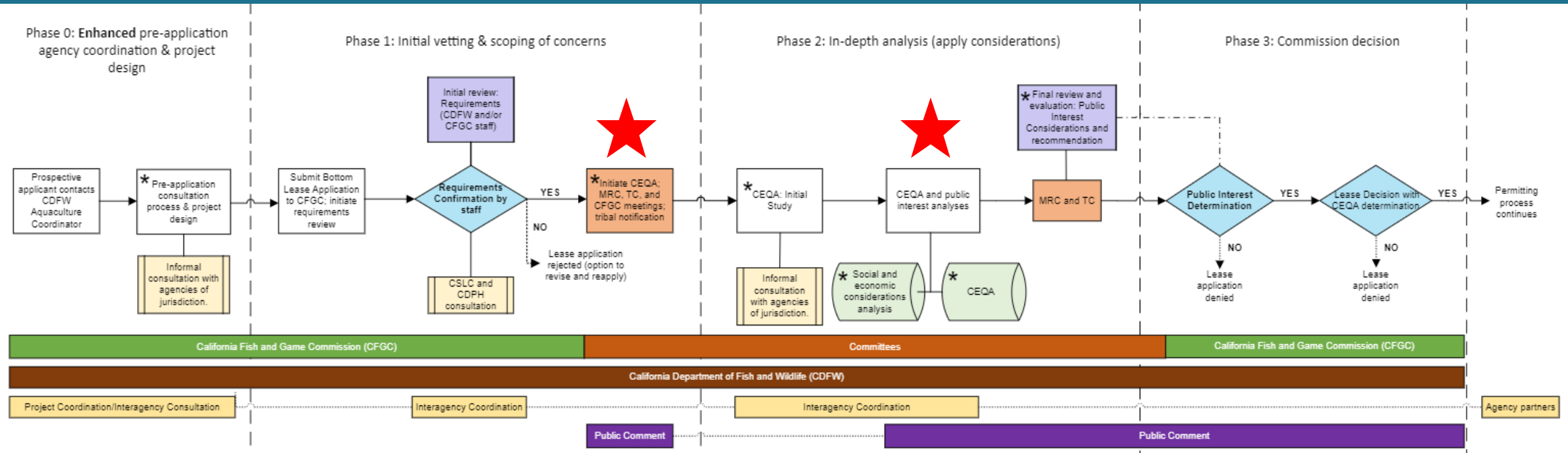


Today's Meeting

- Initial public vetting of application
- Highlight any benefits and concerns related to proposed project
- Inform CEQA EIR



SBSR is Here:





Phase 2: In-depth analysis (apply considerations)

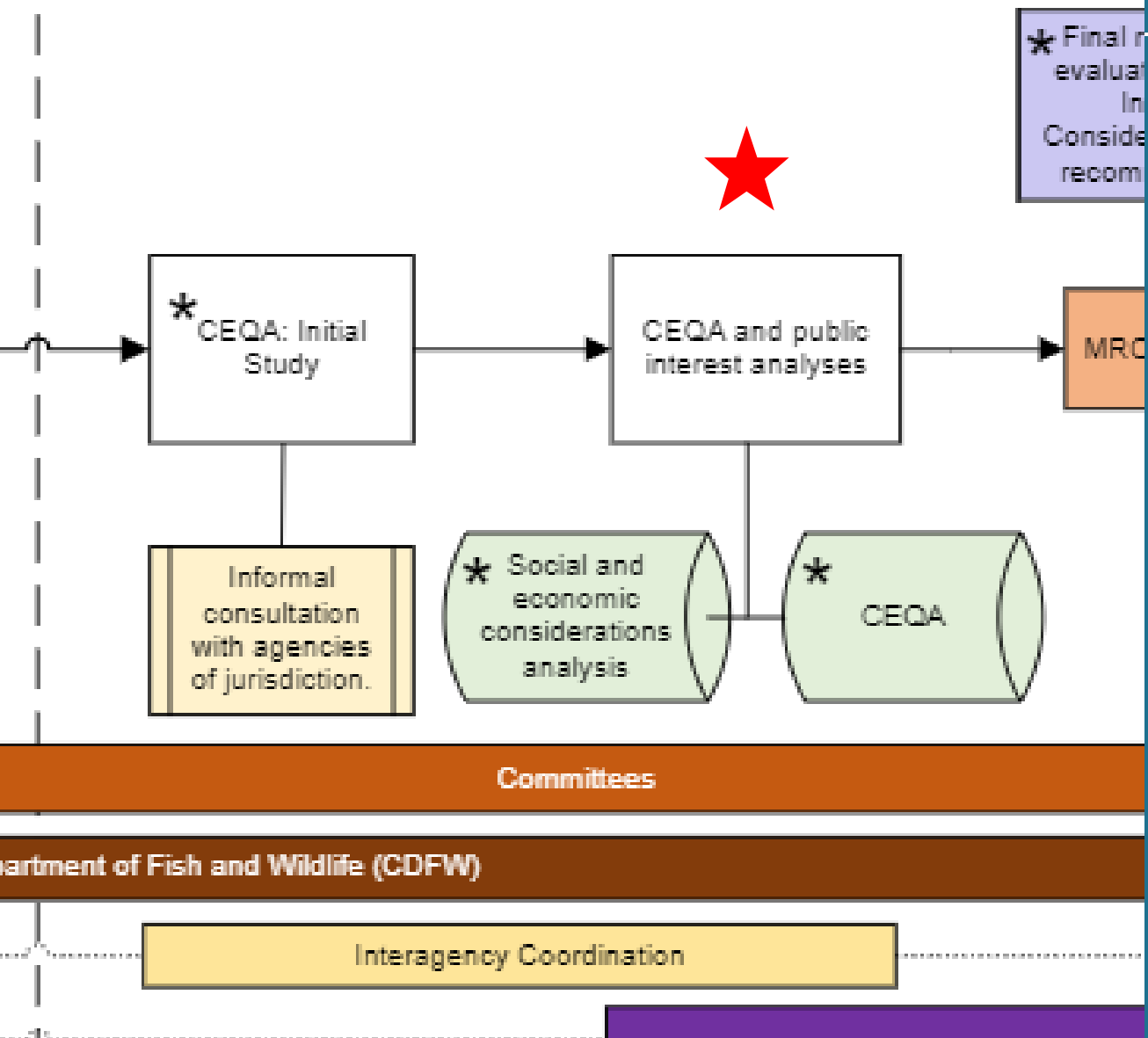
Next Steps

Complete Phase 1

- Tribal Committee vetting
- Report out at Commission meeting

Continue Phase 2

- CEQA EIR
- CEQA analysis





Thank you!

Kimi Rogers

Environmental Scientist

California Fish and Game Commission

FGC@fgc.ca.gov

Proposed Santa Barbara Sea Ranch Offshore Aquaculture Project

- Introduction, Environmental Considerations & Mitigation Strategies
- Presented by: Capt. David Willett – President and Founder
- March 13, 2025



INTRODUCTION

Proposed Project Overview:

- *176-acre offshore shellfish farm, 5 miles west of Santa Barbara Harbor*
- *Cultivating Mediterranean mussels, triploid Pacific oysters, and purple-hinge rock scallops*
- *Using 80 submerged longlines with helical sand screw anchors*

Goal:

- *Sustainable aquaculture with minimal environmental impact*
- *Compliance with all Agency & CEQA requirements and regulations*

- **Lease Application and Public Interest Determination:** 2018
- **Founder and President:** David Willett - USCG Licensed Master, MBA, MSEE
- **LinkedIn:** [linkedin.com/in/dwillett](https://www.linkedin.com/in/dwillett)
- **Website:** www.SantaBarbaraSeaRanch.com

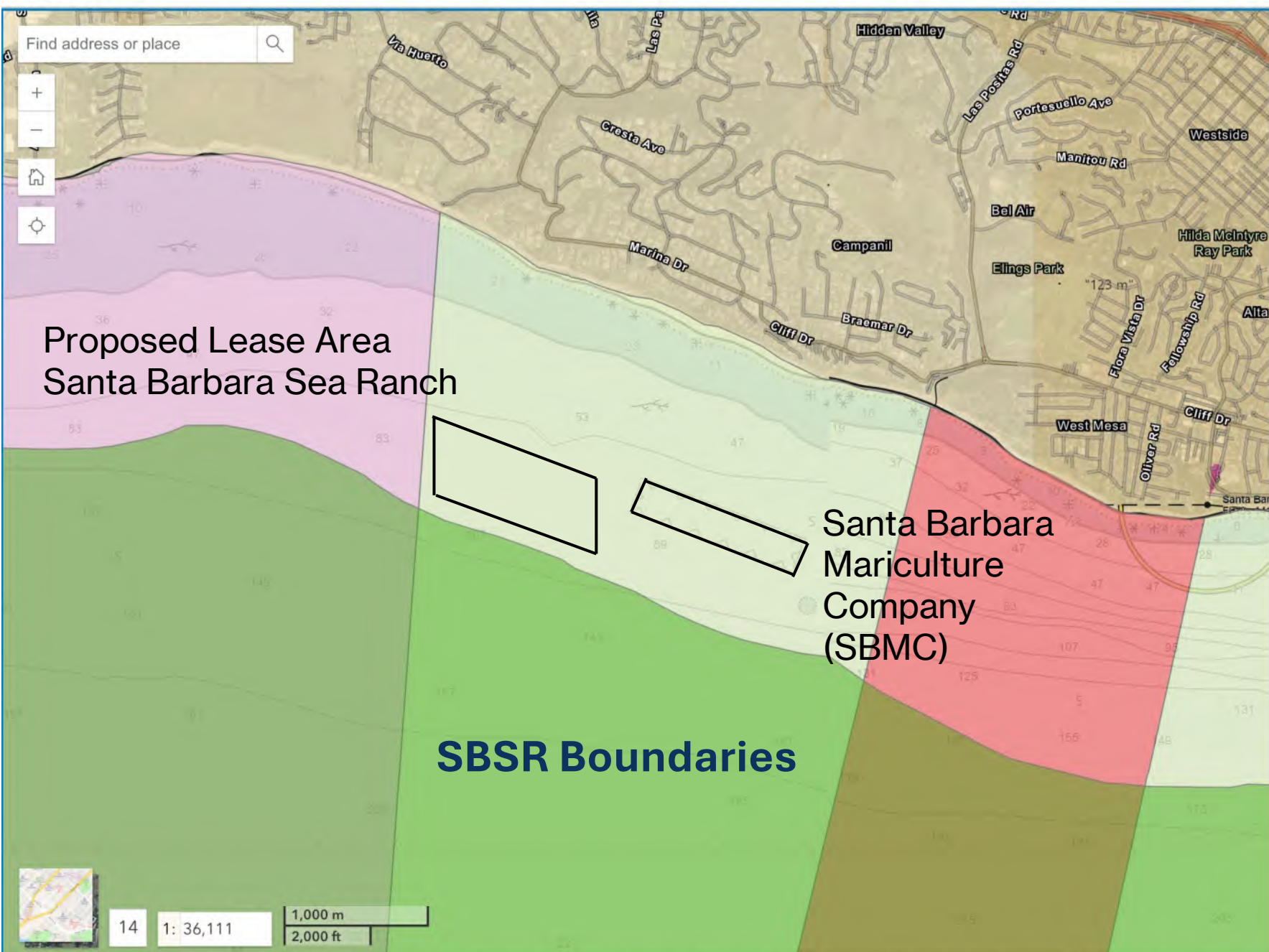


PROPOSED LEASE AREA SELECTION

CRITERIA:

- Proposed lease area not in:
 - Halibut trawling grounds
 - Marine protected area
 - Incompatible kelp administrative bed
 - Waste water treatment plant closure zone
- Smooth sloping sand & mud bottom with NO STRUCTURE
- Correct water depth for longlines
- Minimal impact to commercial and recreational use
- Reasonable proximity to SB Harbor
- Large enough area to be commercially viable





Legend

- Fisheries**
 - Halibut Trawl Grounds - R7 - CDFW [ds3150]
 - Closed (Red square)
 - Open (Green square)
- Administrative Kelp Beds [ds3135]**
 - CLOSED (Red square)
 - CLOSED (TEMPORARILY) (Orange square)
 - LEASABLE (Blue square)
 - LEASED (Pink square)
 - OPEN (Light Green square)

14 1: 36,111

1,000 m
2,000 ft

A scale bar showing 1,000 meters and 2,000 feet. To the left is a small inset map showing the current location within a larger regional context.

Proposed New Aquaculture Lease Santa Barbara Area



There will be a minimum distance of 190 yards between the two farms (enough room to drive two enterprise-class aircraft carriers through).

Sea Floor Substrate Type

- Unconsolidated rippled sediment (sand/mud)
- Sediment covered tar flow
- Rippled scour depressions (sand/gravel)
- Pockmarks (sand/mud)
- Deformed sedimentary bedrock outcrop

FARMING OPERATIONS

Mussels

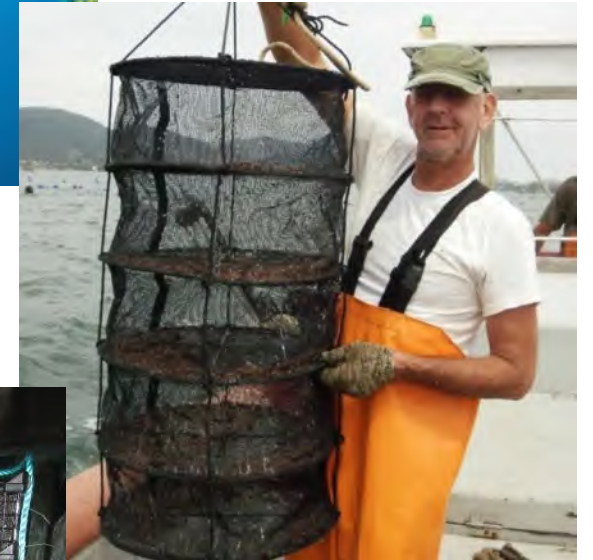
- Shellfish hatcheries provide seed rope
- Mussels grown to market-size on continuous, looped fuzzy rope
- Mussels stripped, cleaned, sorted, and bagged onboard

Oysters

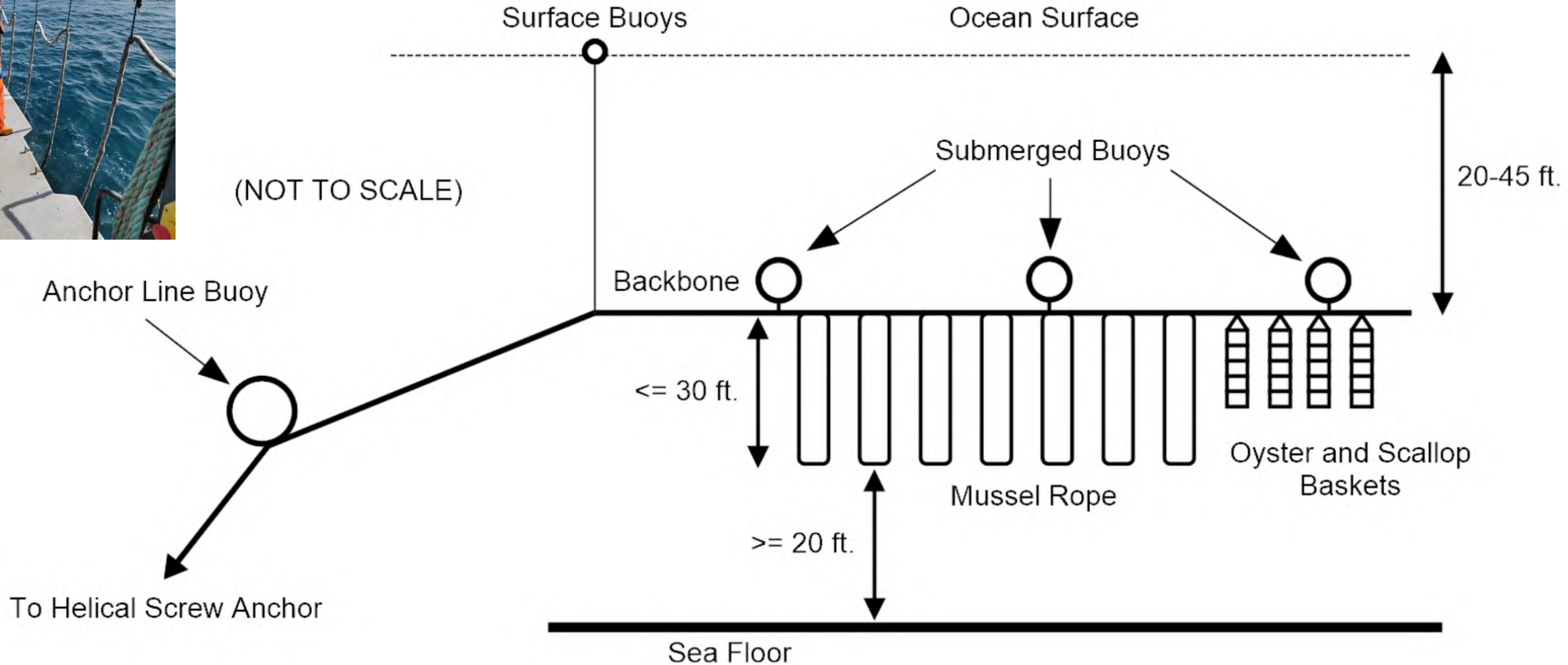
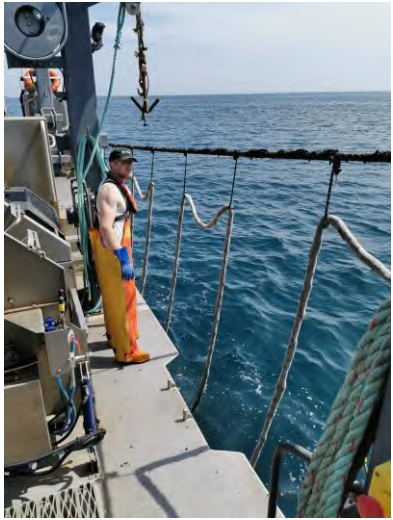
- 7mm oysters grown in baskets with 6mm mesh nets
- Oysters are transferred into baskets with larger 12-mm mesh nets as they grow
- Market-size oyster are washed and put into mesh bags onboard

Rock Scallops (eventually)

- Commercial-scale seed production is still lacking
- Small seed will be placed in grow-out trays lined with mesh
- Methods for growth to market size are still under development

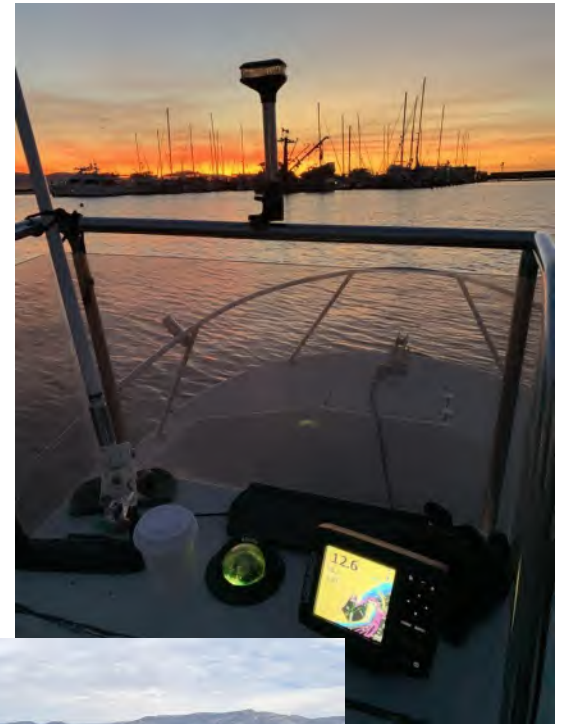


Submerged Longline Section



Water Quality Testing

- Water quality testing was performed from November 16, 2018, through April 2, 2020, according to a CDPH designed test plan.
- **Test results show excellent water quality!**



ENVIRONMENTAL CONCERNS

- **Key Environmental Concerns Identified by CDFW Marine Region Staff:**
 - EC #1: Benthic Impacts
 - EC #2: Commercial and Recreational Fisheries Impacts
 - EC #3: Modification of Local Currents
 - EC #4: Marine Species Entanglement
 - EC #5: Marine Debris Management
 - EC #6: Phytoplankton Levels & Water Quality
- **Our Approach:**
 - Proactive Mitigation Strategies
 - Advanced Engineering Analysis for Robust Longline Design & Entanglement Prevention
 - Rigorous Compliance with all Permitting and Leasing Agency Monitoring and Reporting Requirements

EC #1: Benthic Impacts

- **Concern:**
 - Potential habitat disruption from longline structures and bio-deposits
- **Mitigation Plan:**
 - Sonar and Video Surveys (already conducted)
 - Benthic Monitoring Pre & Post Installation for 4 Years
 - Sediment & Fauna Analysis
 - Use of Helical Sand Screw Anchors: Minimize seabed disturbance

SBSR Bottom Survey

- In 2019, at the request of CDFW (with input from the California Coastal Commission), SBSR conducted a water bottom survey at the proposed project location on a 400' transect.
- SBSR built a custom ROV and tow vehicle and captured over 7 miles of high-resolution sea floor video.
- **Results were consistent with those of the USGS: NOTHING BUT SAND AND MUD.**

USGS California Seafloor Mapping Program video and photography portal: Map Portal.
http://www.axiomdatascience.com/maps/usgs.php - map?lg=5b9152b0-673d-11e2-b541-00219bfe5678&p=proj3857&b=google_hybrid&z=15&ll=34.39394,-119.76716



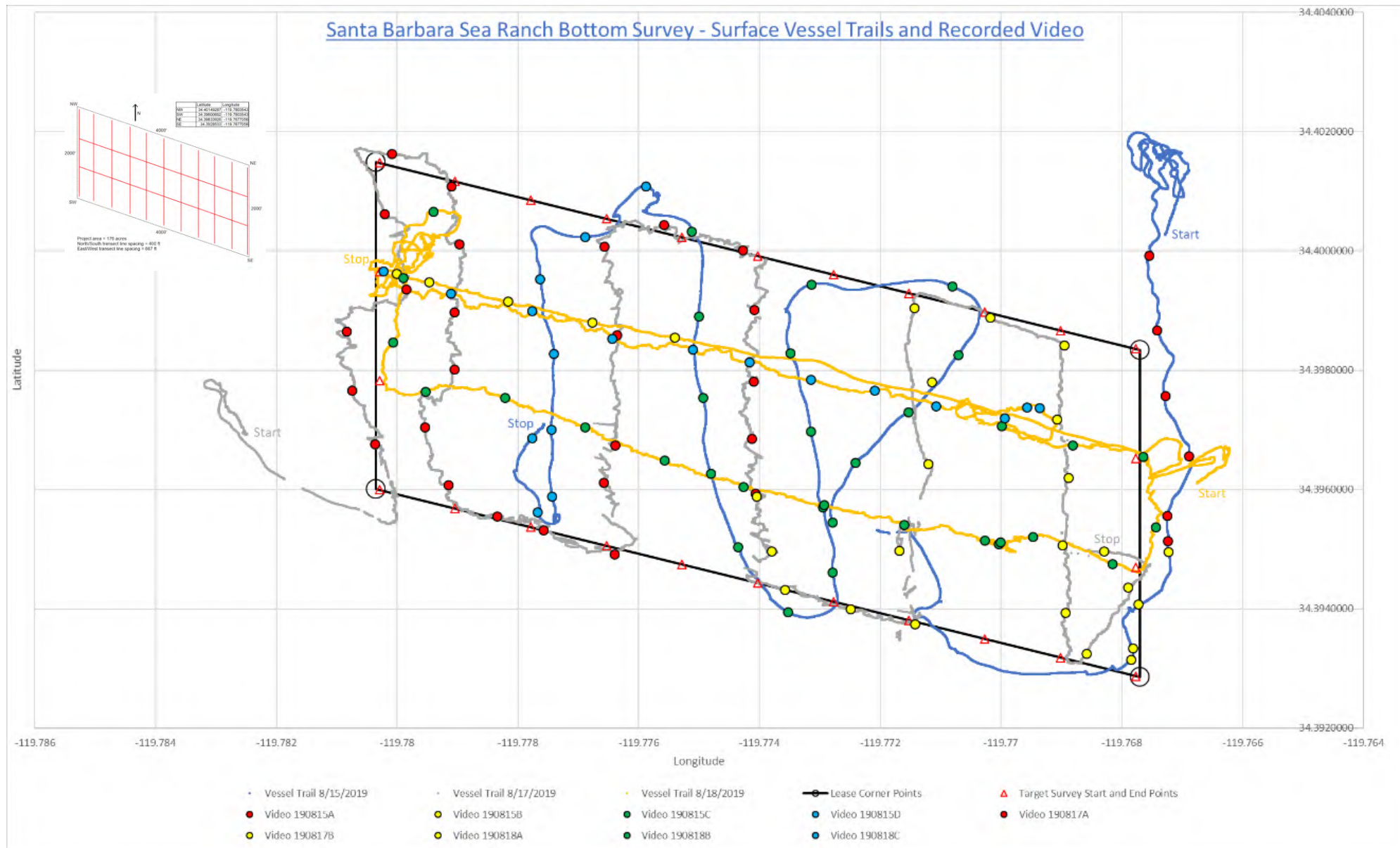
SBSR Bottom Survey Video Sample

The screenshot displays the ARDU SUB software interface. The main window shows a video feed of the seabed, which appears to be a sandy or silty bottom with some faint markings. A green laser spot is visible on the right side of the video. The interface includes a top menu bar with 'File' and 'Widgets', a toolbar with various icons, and a status bar showing '15.08v' and 'Manual Disarmed'. In the top right corner, there are two circular gauges: one for depth and one for heading. A data panel on the right side, titled 'Values', lists the following parameters:

Parameter	Value
Depth (m)	-33.0
Latitude	34.3972583
Longitude	-119.7805533
Pitch (deg)	2.0
Heading (deg)	337
Roll (deg)	-0.9
Temperature (1) (C)	37.99
Temperature (2) (C)	13.57
Voltage	15.08 v
Percent	-1 %

At the bottom right of the video feed, the text 'Santa Barbara Sea Ranch Bottom Survey - August 17, 2019' is displayed. A double arrow icon is visible in the bottom left corner of the video area.

SBSR Bottom Survey Path



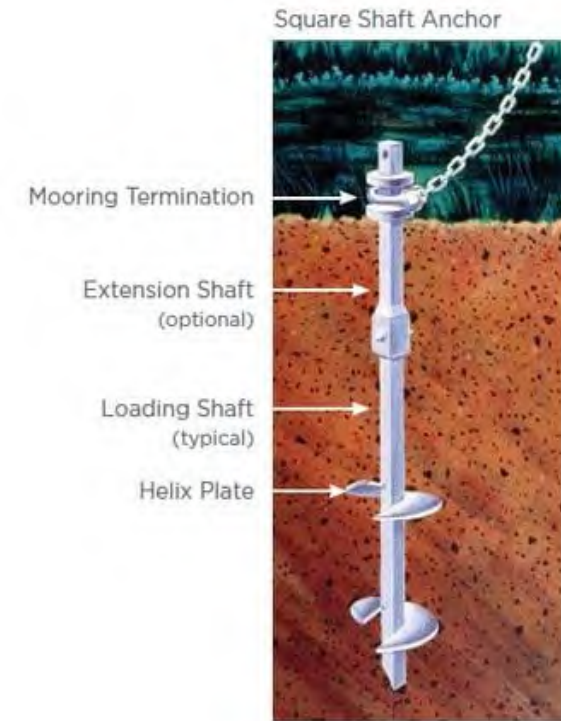
Helical Screw Anchors

Minimal Seafloor Disturbance

- < 1 sq. meter per anchor
- *For 160 anchors in 176 acres, only 0.025% of the seafloor will be disturbed (1/4000th of the total area)*

Expert Installation

- Fielder Marine Services, LTD
- 10 years' experience
- <https://www.fieldermarine.com/>



EC #2: Commercial and Recreational Fisheries Impacts

- **Concern:**
 - Proximity to edge of California halibut trawl grounds (150 feet to boundary)
 - Possible impact on market squid & recreational fisheries
- **Mitigation Plan:**
 - USCG approved aids to navigation (buoys and lights)
 - Fisheries Impact Analysis in EIR
 - Continued engagement with local fishermen

**Southern
California Trawlers
Association
Support (letter
from Mike
McCorkle, former
President, SCTA)**

----- Forwarded message -----

From: **Kim Selkoe** [REDACTED]

Date: Wed, Aug 8, 2018 at 12:12 PM

Subject: From mike

To: [REDACTED]

----- Forwarded Message -----

Subject:mussel farm

Date: Thu, 26 Jul 2018 10:11:55 -0700

From: McCorkle Fishing Enterprises [REDACTED]

To: [REDACTED]

David, Southern Ca. Trawlers Assn has reviewed your proposal to put in a mussel farm off of Hope Ranch, Santa Barbara, inside the one mile line and have no problem with the proposal at this time. we will be glad to work with you on your implementing your farm in the future. Mike Mccorkle, president SCTA.

Sent from my iPhone

Santa Barbara Commercial Fisherman Support

Santa Barbara Recreational Fisherman Support

Steve Escobar (SBSR Partner & Commercial Fisherman)

Board member: Commercial Fishermen of Santa Barbara

August 7, 2018

David Willett

Dear David,

I support your effort to expand Santa Barbara's mussel farming industry for the following reasons. You have selected a location for your farm that minimizes interference with our commercial fisheries. From our conversations and the bio you shared with me, I have confidence at this time that you are capable and have the experience needed to be successful, and you will be a good neighbor to the fishermen.

I have been a commercial fishermen since 1991, working out of the port of Santa Barbara since 2001, and participating in direct marketing of rock crab and other seafood to consumers. The demand for mussels in California and in the U.S. far exceeds the domestic supply. Adding mussel farms to our coast can be a benefit to our fishing community when they are responsibly managed and carefully integrated into our commercial fisheries to minimize conflicts in ocean use.

Sincerely,



Steve Escobar,

Jason Diamond (SBSR Advisory Board)

Owner - Stardust Sportfishing -

<https://www.stardustsportfishing.com/>

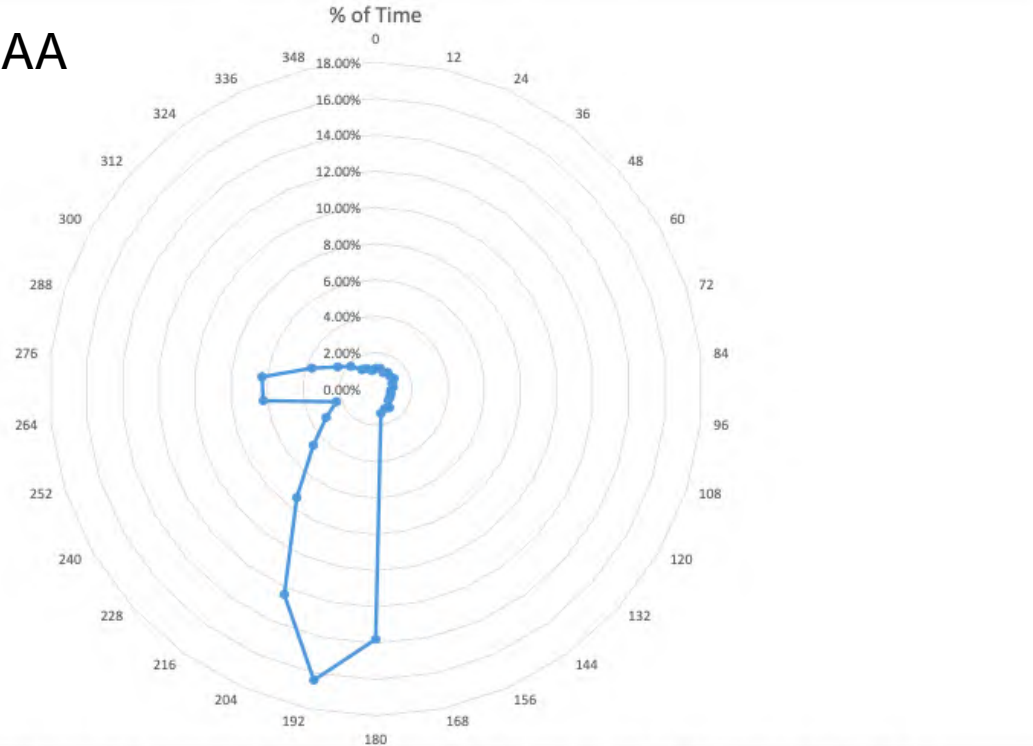


EC #3: Modification of Local Currents

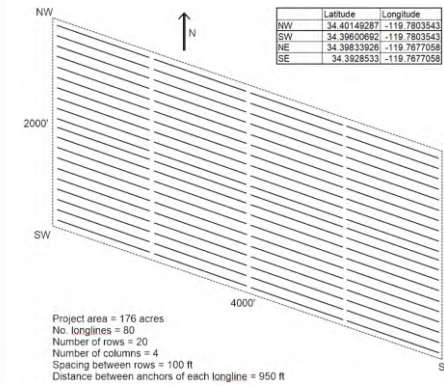
- **Concern:**
 - Potential reduction in current speed affecting larval transport, nutrient & sediment distribution, and potential accumulation of shell debris and bio-deposits on seafloor below the farm
- **Mitigation Plan:**
 - Baseline and ongoing monitoring of current speeds and bottom conditions
 - Longline layout for low frontal area in the direction of the Santa Barbara Mariculture Co.

First-Order Flow Discussion:

Source: NOAA

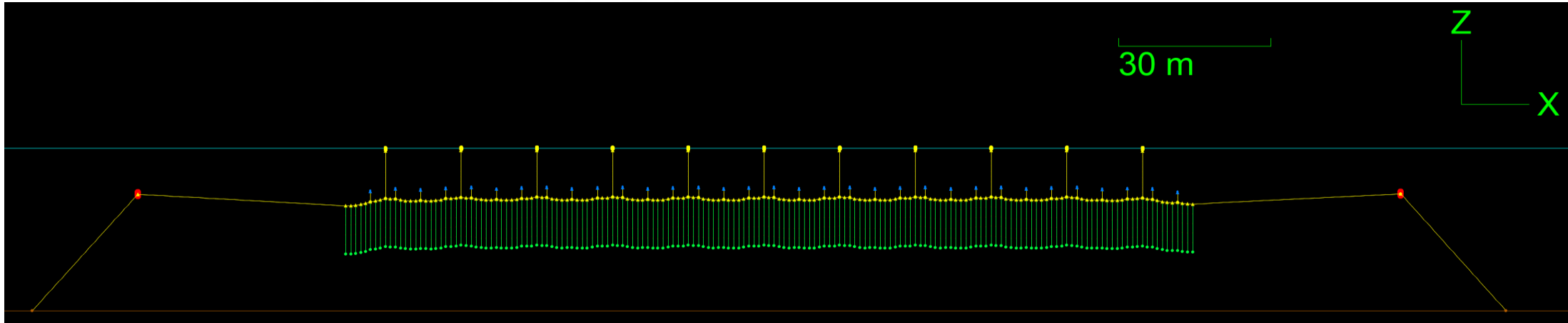
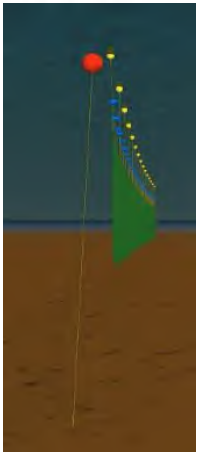


Percent of current direction at 10 m depth offshore Santa Barbara, 2012 - 2019 CA Roms 3 km resolution.



Current from 180 Degrees	
Farm frontal area (sq.ft.)	280,000
Longline Frontal Area (sq.ft.)	43,362
Percent Obstruction:	15%
Current from 270 Degrees	
Farm frontal area (sq.ft.)	140,000
Longline Frontal Area (sq.ft.)	660
Percent Obstruction:	0.47%

Conclusion: Principal flow direction and low-percentage frontal area will have minimal impact on flow and SBMC.



EC #4: Marine Species Entanglement

- **Concern:**
 - Risk of entanglement for whales, sea turtles, and other marine life
- **Mitigation Plan:**
 - Use of breakaway links and non-floating lines
 - Longline design ensures all lines always under tension
 - Entanglement monitoring
 - Annual reporting to agencies (NOAA, USACE, FGC, CDFW, CCC)

EC #5: Marine Debris Management

- **Concern:**
 - Potential for lost equipment contributing to marine debris
- **Mitigation Plan:**
 - Marine Debris Prevention Plan
 - All gear marked with ID tags
 - Regular inspections and retrieval plan
 - Annual reporting to agencies (NOAA, USACE, FGC, CDFW, CCC)

EC #6: Phytoplankton Levels & Water Quality

- **Concern:**
 - Over-harvesting shellfish affecting phytoplankton carrying capacity
 - Potential alteration of nutrient levels
- **Mitigation Plan:**
 - Phytoplankton, sediment, and nutrient level monitoring and annual reporting

Contact:

David A. Siegel, PhD

Director, Earth Research Institute, and

Professor of Marine Science, Department of Geography

University of California, Santa Barbara

A. STATEMENT

Subject: Statement concerning impacts of SB Mariculture expansion on plankton levels in the Santa Barbara Channel

Dear Bernard,

Last April, you asked me what the impacts of the expansion of your mariculture facility could be to phytoplankton in the Santa Barbara Channel. This kind of calculation is something I am well versed at as I have long been assessing the impacts of kelp forests on the pelagic ecology of the Channel as a coPI of the Santa Barbara Coastal Long Term Ecological Research site (<http://sbc.lternet.edu>).

Working with Dr. Bob Miller of the UCSB Marine Science Institute, we estimated what the maximum impacts of the mussel farm could be to the standing stock of phytoplankton biomass flowing past your facility. We assumed that your mussel farm is fully stocked and that the mussels are operating at their maximum clearance rates and ingestion efficiencies to calculate the time scale which sea water will flow through the mussels. We then compared that to an estimate the maximum residence time for water to flow through the farm. We found that these two time scales differ by more than two orders of magnitude and that the mussel farm will have an inconsequential impact on phytoplankton (and for that matter zooplankton populations) in the Channel. Taking it one step further, we calculated the maximum expected reduction in chlorophyll concentrations of water flowing through your facility. We found approximately a 0.06% reduction which corresponds to 0.0012 mg /m³ reduction in chlorophyll concentrations from a baseline value of 2 mg /m³ (a typical value for the Santa Barbara Channel). This decrease is unmeasurable by any techniques I know of. A copy of this calculation is attached.

In summary, I cannot see how your proposed expansion in isolation would have any measurable impact on the plankton distributions of the Santa Barbara Channel. When you first told me about it I thought you were joking. Of course if your proposed expansion were maybe 1000 times larger there would likely be actual impacts that are measurable and need to be considered. But this action in isolation should result in no measurable changes to the plankton communities of the Santa Barbara Channel.

-David Siegel

UCSB Statement: Mariculture Impact on Phytoplankton in the Santa Barbara Channel

LONGLINE DESIGN & SAFETY MARGIN

- SBSR, with the support of Jacob Technologies and Orcina, LTD, conducted **detailed static and dynamic analysis** of the SBSR longlines in **extreme storm conditions** using Orcina's **OrcaFlex** finite element analysis software.
- **Accurate** physical representation of all components.
- Hindcast environmental conditions used in the analysis were **provided by NOAA and USACE**.
- A total of **48 separate load cases** were evaluated for extreme wave, current, and wind conditions with bespoke longline designs optimized for specific water depth.
- Maximum loading is calculated for all lines and **proper safety factors applied**.

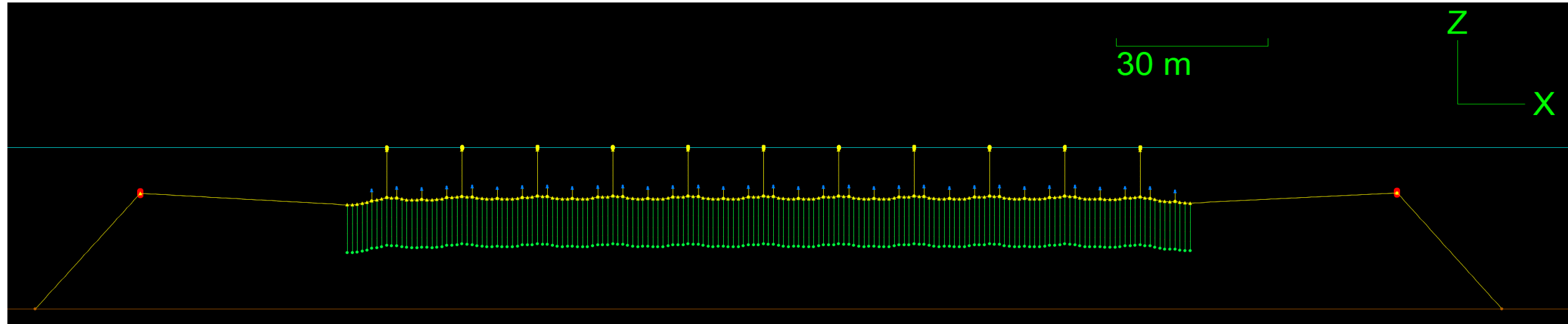
Jacobs



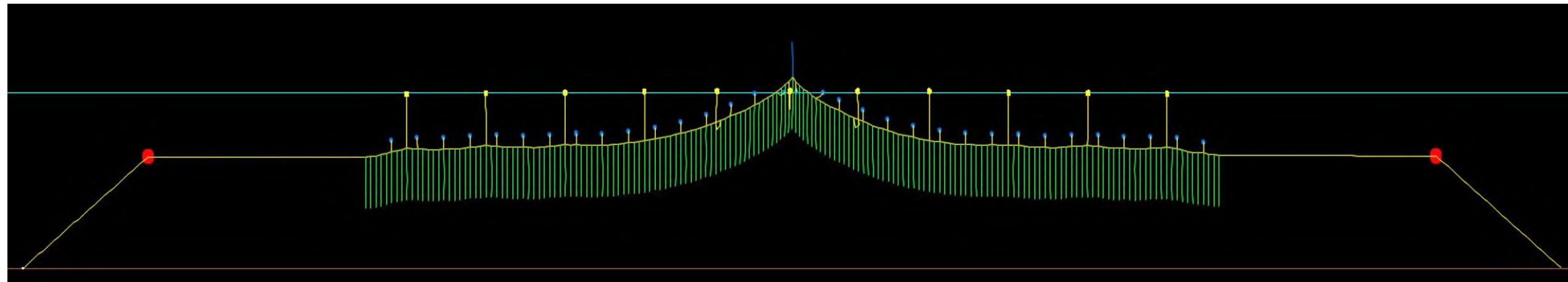
<https://www.orcina.com/orcaflex/>

OrcaFlex is the world's leading package for the dynamic analysis of offshore marine systems.

Accurate Physical Modeling and Safety Margin



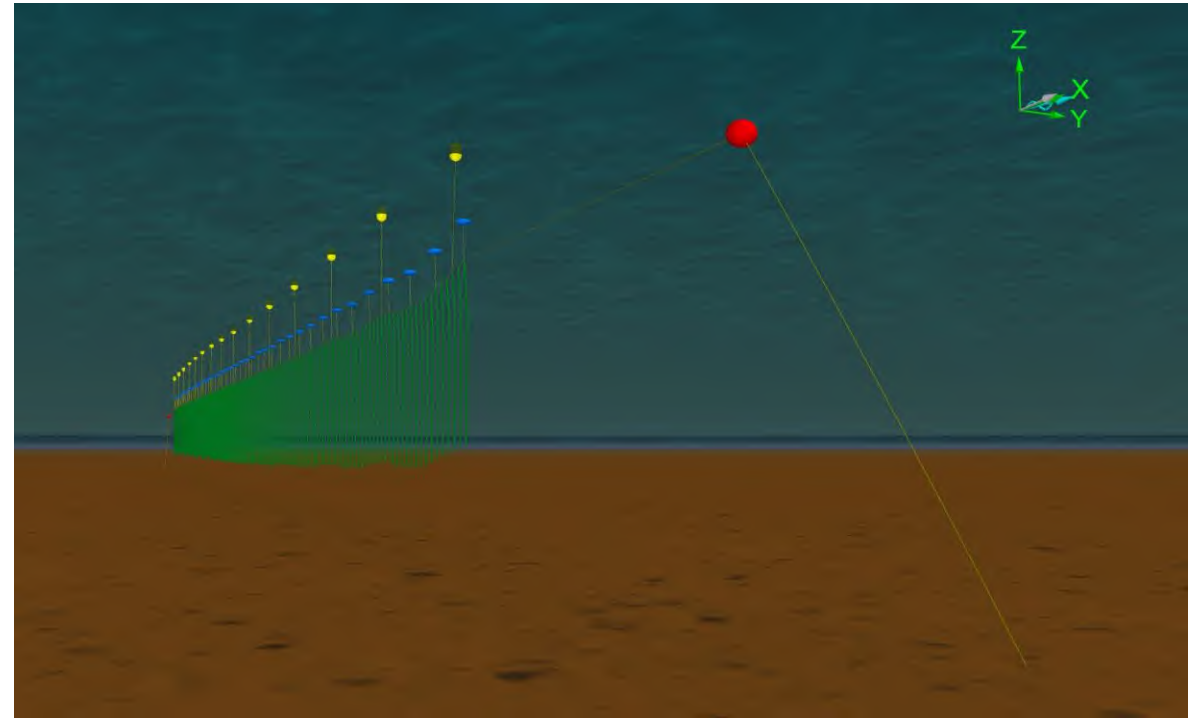
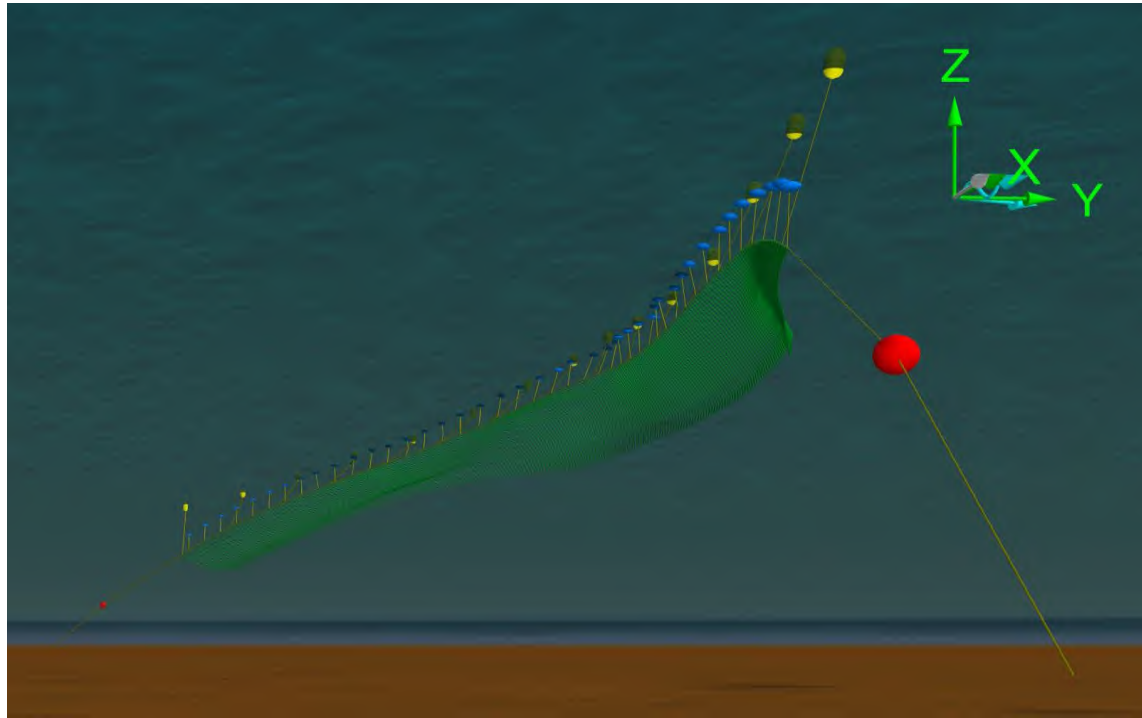
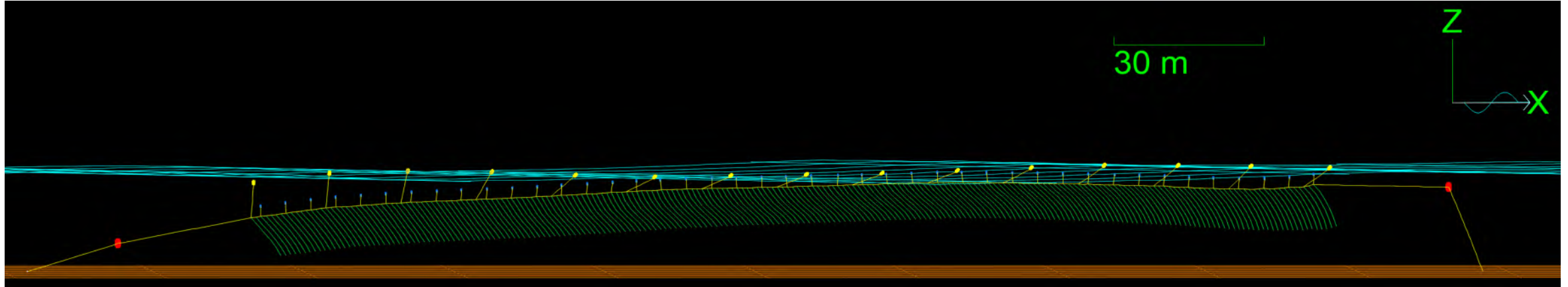
Longline in Still Water



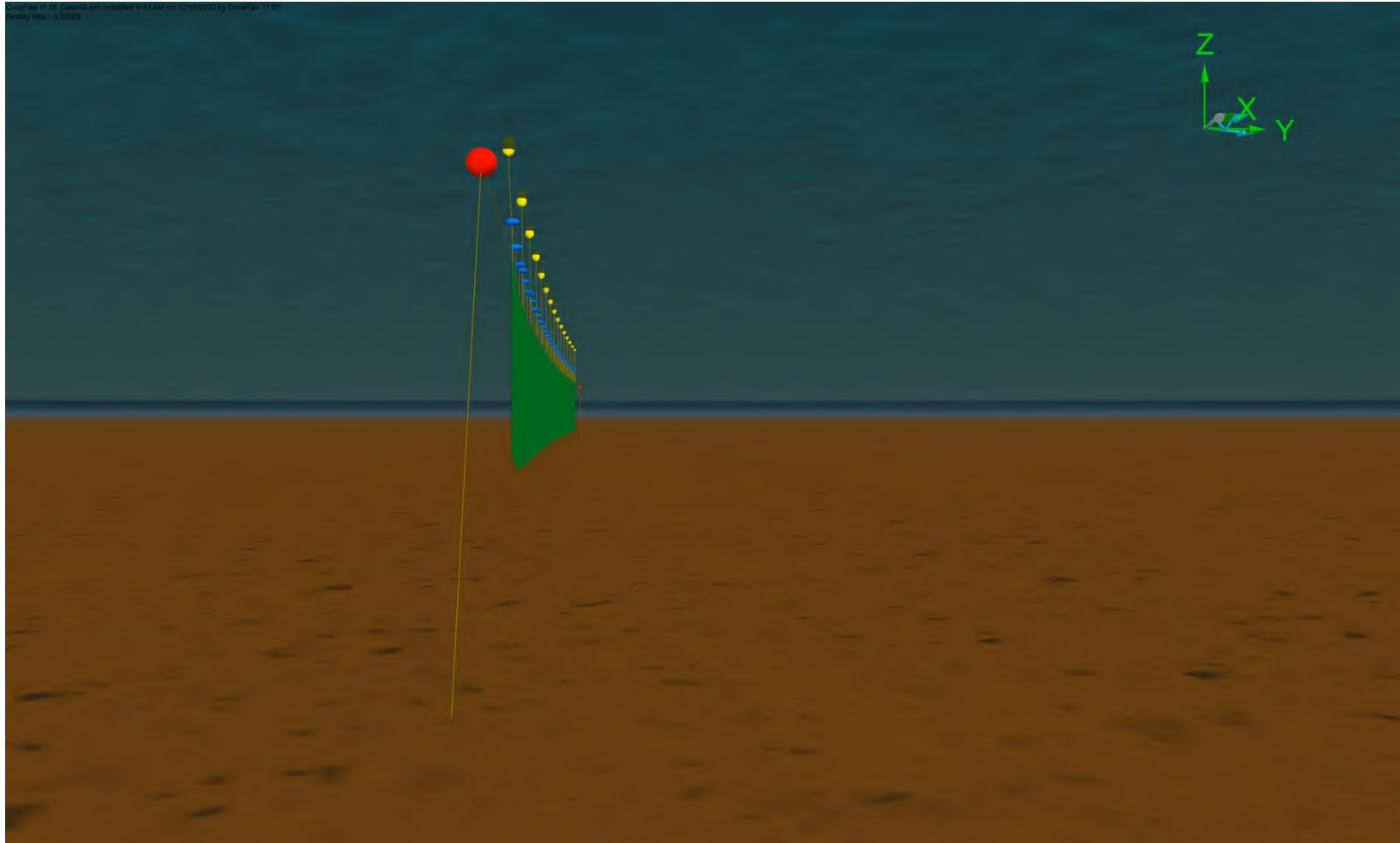
Winch Operation Tension Calculation
3m Lift

* See "Additional Slides"
for More Information

Accurate Physical Modeling and Safety Margin



Stress Analysis in Worst-Case Storm Environment



60-second video: 100-year waves from 273 degrees and 10-year current from 180 degrees (SBSR longlines will lay 286/106 degrees)

* See "Additional Slides" for More Information

Determination of Line Strength Requirements

Maximum Line Loads (N)												
Load Case	Wave Direction (degrees)	Wave Return (years)	Current Direction (degrees)	Current Return (years)	Wind Direction (degrees)	Wind Return (years)	Anchor Line 1 (anchor end)	Anchor Line 1 (top end)	Backbone 1	Backbone 2	Anchor Line 2 (top end)	Anchor Line 2 (anchor end)
1	273	100	273	10	315	10	52,726	54,634	52,932	16,966	15,381	16,895
2	273	10	273	100	315	10	50,764	52,081	50,915	13,389	9,375	12,977
3	273	100	180	10	315	10	67,825	67,838	67,997	53,625	53,503	56,406
4	273	10	180	100	315	10	57,401	58,597	57,574	48,574	48,386	49,955
5	273	1	273	1	315	10	45,555	47,634	45,715	8,103	5,744	9,568
6	273	1	180	1	315	10	56,597	57,880	56,762	42,604	42,429	44,716
7	273	100	225	10	315	10	80,249	80,406	80,394	42,455	42,295	44,725
8	273	10	225	100	315	10	72,022	73,335	72,157	41,359	41,177	43,307
9	303	100	273	10	315	10	49,935	52,477	50,066	15,023	12,802	13,549
10	303	10	273	100	315	10	51,101	52,440	51,249	9,018	7,289	9,500
11	303	100	180	10	315	10	45,624	46,872	45,841	55,613	55,454	57,382
12	303	10	180	100	315	10	39,581	41,197	39,811	51,023	50,852	52,491
13	303	1	273	1	315	10	44,425	46,698	44,583	5,991	4,491	7,408
14	303	1	180	1	315	10	37,582	39,219	37,804	55,086	54,932	56,791
15	303	100	225	10	315	10	58,873	60,422	59,024	41,667	41,464	43,409
16	303	10	225	100	315	10	54,954	57,192	55,090	38,762	38,428	40,248
17	243	100	273	10	315	10	72,591	74,234	72,726	19,845	18,813	20,892
18	243	10	273	100	315	10	58,268	60,123	58,415	13,842	12,592	14,555
19	243	100	180	10	315	10	127,612	128,448	127,692	103,938	103,846	105,841
20	243	10	180	100	315	10	99,894	101,194	99,999	81,263	81,150	82,814
21	243	1	273	1	315	10	47,677	49,466	47,855	8,322	7,141	9,818
22	243	1	180	1	315	10	67,968	69,188	68,100	63,011	62,867	64,444
23	243	100	225	10	315	10	118,316	118,830	118,406	80,939	80,821	82,262
24	243	10	225	100	315	10	102,369	103,575	102,462	72,136	71,983	73,356

TEAM

President and Founder – Capt. David Willett

- 20+ years of senior-level experience in ocean engineering, manufacturing, supply chain management, quality assurance, and business development.
- BSEE, MSEE, MBA.
- USCG Licensed Master



Partner and Commercial Fisherman - Steve Escobar

- Commercial fisherman since 1991
- Worked out of Santa Barbara Harbor since 2001
- Board member: Commercial Fishermen of Santa Barbara
- Owns and operates a 44' Stanley Lobster Boat – the “Ocean Pearl”



ADVISORY BOARD

Carolynn (Carrie) S. Culver, Ph.D.

- Aquatic Resources Specialist/Research Scientist
 - California Sea Grant
 - Scripps Institution of Oceanography, UC San Diego
 - Marine Science Institute, UC Santa Barbara



Michael D. Chambers, Ph.D.

- Marine Aquaculture Specialist
 - UNH Associate Professor, School of Marine Science and Ocean Engineering
 - New Hampshire Sea Grant and Cooperative Extension University of New Hampshire



Jason Diamond

- Owner - Stardust Sportfishing -
<https://www.stardustsportfishing.com/>



Vanessa Willett (Sales and Marketing)

- VP Partnerships and Ecosystems at Demandbase, Inc.
- Responsible for over \$200M in B2B ads and SAAS revenue



Current Project Status

- On the suggestion of FGC and California Coastal Commission Staff, SBSR drafted an Initial Study/Mitigated Negative Declaration.
- CDFW and CCC reviewed the IS/MND draft and CDFW concluded that a full EIR should be conducted.
- SBSR engaged ECORP (<https://www.ecorpc consulting.com/>) and they have provided a suggested plan of action for completion of the EIR which has been reviewed by CDFW and CCC and iterated on multiple times.
- **At this point, nearly SEVEN years since we started, we hope to get everyone on the same page, gather everyone's input and guidance, and be positioned to efficiently move forward with minimal duplication of effort and unnecessary cost or delay.**

Conclusion and Call for Support

- Santa Barbara Sea Ranch is committed to responsible aquaculture.
- Mitigation measures will be put in place to minimize environmental impact.
- We value ongoing engagement with all NGOs & stakeholders.
- Seeking support for approval & implementation.

SUSTAINABLE AQUACULTURE IS KEY

TO A RESILIENT SEAFOOD FUTURE!

Thank you!

Additional Slides

Advisory Board

Carolynn (Carrie) S. Culver, Ph.D.

- Aquatic Resources Specialist/Research Scientist
California Sea Grant
Scripps Institution of Oceanography, UC San Diego and
Marine Science Institute, UC Santa Barbara
- Dr. Culver runs her program from the Santa Barbara Channel region of south-central California. Her program addresses the general vision of California Sea Grant: to promote the sustainable use of marine and coastal resources in support of thriving human and natural communities. She supports this vision by facilitating and conducting research and extending research-based information to help California communities solve coastal and marine issues, especially those related to aquatic invasive species, marine invertebrate fisheries, and shellfish mariculture.
- Culver's research interests include understanding life history characteristics and population dynamics of aquatic organisms and applying this information to improve the management of non-native invasive species and fisheries resources, and to enhance culture technologies of marine species. She was a lead researcher on the successful eradication of a marine pest, and she remains actively engaged in the management of invasive species. She is currently working collaboratively with many groups to minimize the impacts of non-native species, including quagga and zebra mussels and several marine organisms that are transported via boat hulls. Culver also is evaluating ways to assist the state with the management of fisheries resources, through collaborative fisheries research to collect field data and promote its integration into the management process. She continues to gather essential fisheries information on marine resources and those who depend on them to enhance the management of California's fisheries. **Her work in mariculture currently assists those interested in culturing rock scallops and other marine shellfish.** Culver is a UC certified research diver, and SCUBA diving is often a part of her research program.



Advisory Board

Michael D. Chambers, Ph.D.

- Marine Aquaculture Specialist, Associate Professor, School of Marine Science and Ocean Engineering, New Hampshire Sea Grant and Cooperative Extension, University of New Hampshire
- Michael has been advancing open ocean farming technologies for over 25 years in the US and abroad. In the US, he has managed submerged cage culture projects in the Gulf of Mexico, Hawaii, and the North Atlantic. In 2000, he took the role of Project Manager at the University of New Hampshire's (UNH) Open Ocean Aquaculture Project and the Atlantic Marine Aquaculture Center. This project was at the forefront of developing biological, engineering, and environmental technologies for the commercialization of offshore aquaculture in the US. Novel culture systems were evaluated, and numerous species were successfully grown at the farm located 13 km offshore in 52m water depth. In addition, Michael and UNH engineers have developed a floating integrated multi-trophic aquaculture platform to grow steelhead trout, blue mussels, and sugar kelp. The nearshore system is used to train and educate fishermen and students on responsible aquaculture methods. On a national level and funded by the Department of Energy, Michael has been involved with multiple US institutions to develop offshore macroalgae farms for biofuel production. Internationally, he has been engaged with aquaculture projects in the Black Sea (US AID), in Norway (SINTEF Fisheries and Aquaculture), in the Mediterranean (University and private), and Cuba (non-profit). Michael received a BS (Biology) from the University of Wisconsin, an MS (Mariculture) from Texas A&M and a Ph.D. (Zoology) from the University of New Hampshire. Lastly, he maintains a Master Captain's license (100 ton) and has over 5500 hours logged diving in the Pacific, Atlantic, Gulf of Mexico and Caribbean oceans.



Advisory Board

Jason Diamond

- Owner - Stardust Sportfishing
- <https://www.stardustsportfishing.com/>



Vanessa Willett (Sales and Marketing)

- Vanessa Willett has over 15 years of experience in sales and marketing, with an emphasis in B2B where she has helped some of the world's biggest brands drive revenue. Today, as Vice President of Partnerships and Ecosystems at Demandbase, Inc., she and her team are responsible for over \$200M in revenue.



Team

Partner and Commercial Fisherman: Steve Escobar

A board member of Commercial Fishermen of Santa Barbara, Steve has been a commercial fisherman since 1991, working out of the port of Santa Barbara since 2001. While Steve's catch-of-the-day is primarily Rock Crab, he also provides Urchin, Spider Crab, Sea Snails (Whelk) and Lobster direct to the public every Saturday at the Newport Beach 'Dory Fleet' Fisherman's Market. Steve fishes off his 44' Stanley Lobster boat, the Ocean Pearl, which you may see docked in Santa Barbara just down from Brophy's Restaurant on the breakwater.



Team

President and Founder: Capt. David Willett

- 20+ years of experience in manufacturing, ocean engineering, supply chain, and quality systems leadership positions
- MBA and Master of Science, Electrical Engineering
- USCG 25-ton Merchant Mariner Credential
- Exceptional problem-solving skills
- Proven ability to take on difficult and unfamiliar challenges and deliver exceptional results.
- Pragmatic, logical, driven, and tenacious.
- [linkedin.com/in/dwillett](https://www.linkedin.com/in/dwillett)



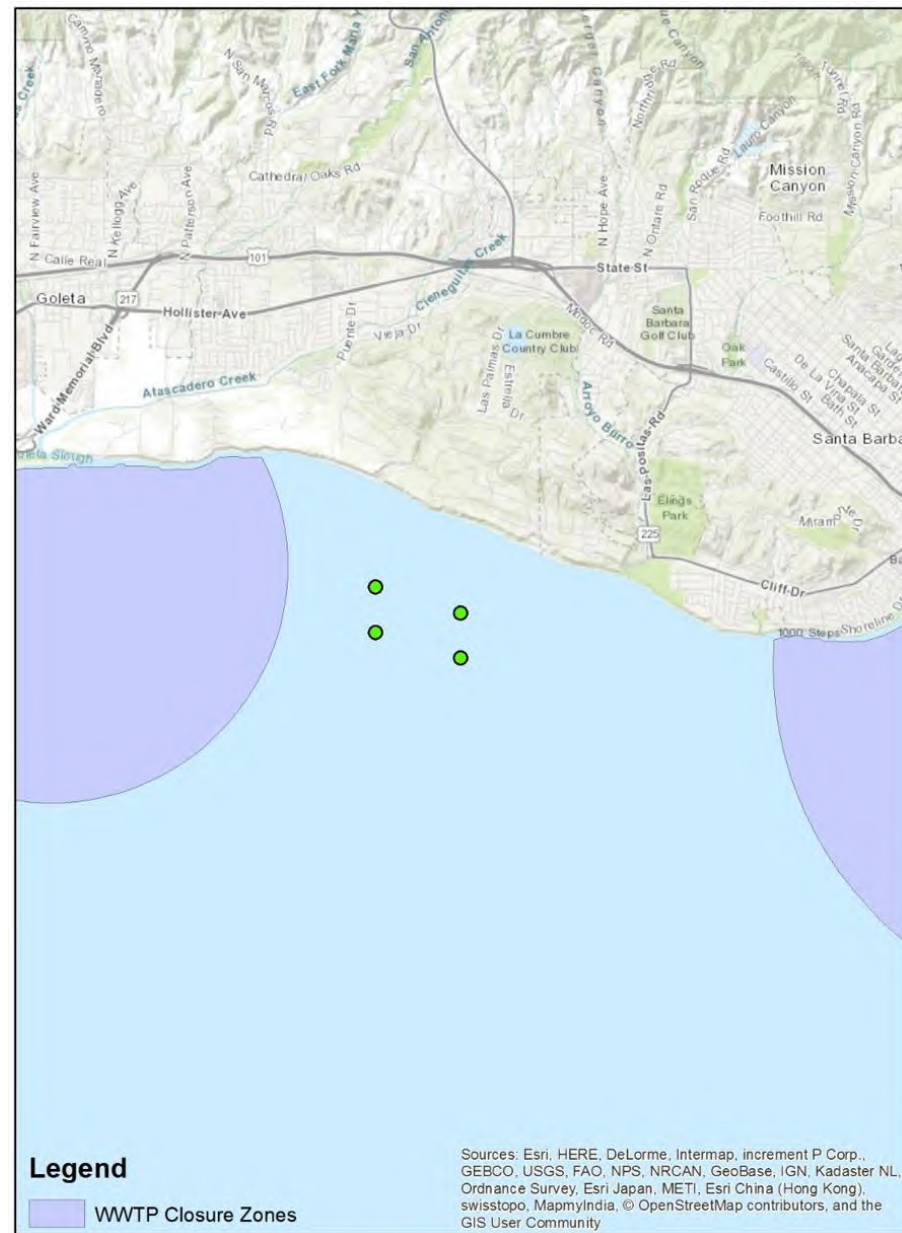
Proposed Lease Area



Google Earth:

<https://earth.google.com/web/@34.40051407,-119.78324028,-3.00654376a,27564.13618836d,35y,0.0000121h,0t,0r/data=CgRCAggBOgMKATBCAggASggl8c-p4QEQA>

Project Location and Wastewater Treatment Plant Closure Zones



Map provided by the California Department of Public Health

Fish and Game Commission Public Interest and Lease Availability Determination (August 22-23, 2018)

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

Valerie Termini, Executive Director
P.O. Box 944209
Sacramento, CA 94244-2090
(916) 653-4899
fgc@fgc.ca.gov
www.fgc.ca.gov

Fish and Game Commission



*Wildlife Heritage and Conservation
Since 1870*

September 10, 2018

David Willett, President and Chief Executive Officer
Santa Barbara Sea Ranch, Inc.
1829 Loma Street
Santa Barbara, CA 93103

Sent via email to dwillett@santabarbarasearanch.com

Dear Mr. Willett:

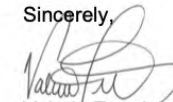
At its August 22-23, 2018 meeting in Fortuna, the California Fish and Game Commission (Commission) made a determination that the 176 acres of state water bottoms applied for leasing by Santa Barbara Sea Ranch, Inc. is available for lease and that the lease would be in the public interest.

Following its determination, the Commission directed staff to publish public notice that the area is being considered by the Commission for leasing, pursuant to Fish and Game Code Section 15404. The attached public notice will be printed in the Santa Barbara News-Press on September 14 and 21.

Further, the Commission directed staff to schedule the lease application for consideration after completion of California Department of Fish and Wildlife (Department) and interagency review; tribal notification; and environmental review conducted by Santa Barbara Sea Ranch, Inc. pursuant to the California Environmental Quality Act. Final Commission consideration will be scheduled following the required steps. Randy Lovell, statewide aquaculture coordinator with the Department, and Susan Ashcraft, marine advisor to the Commission, will be contacting you to discuss how to accomplish the necessary project submissions.

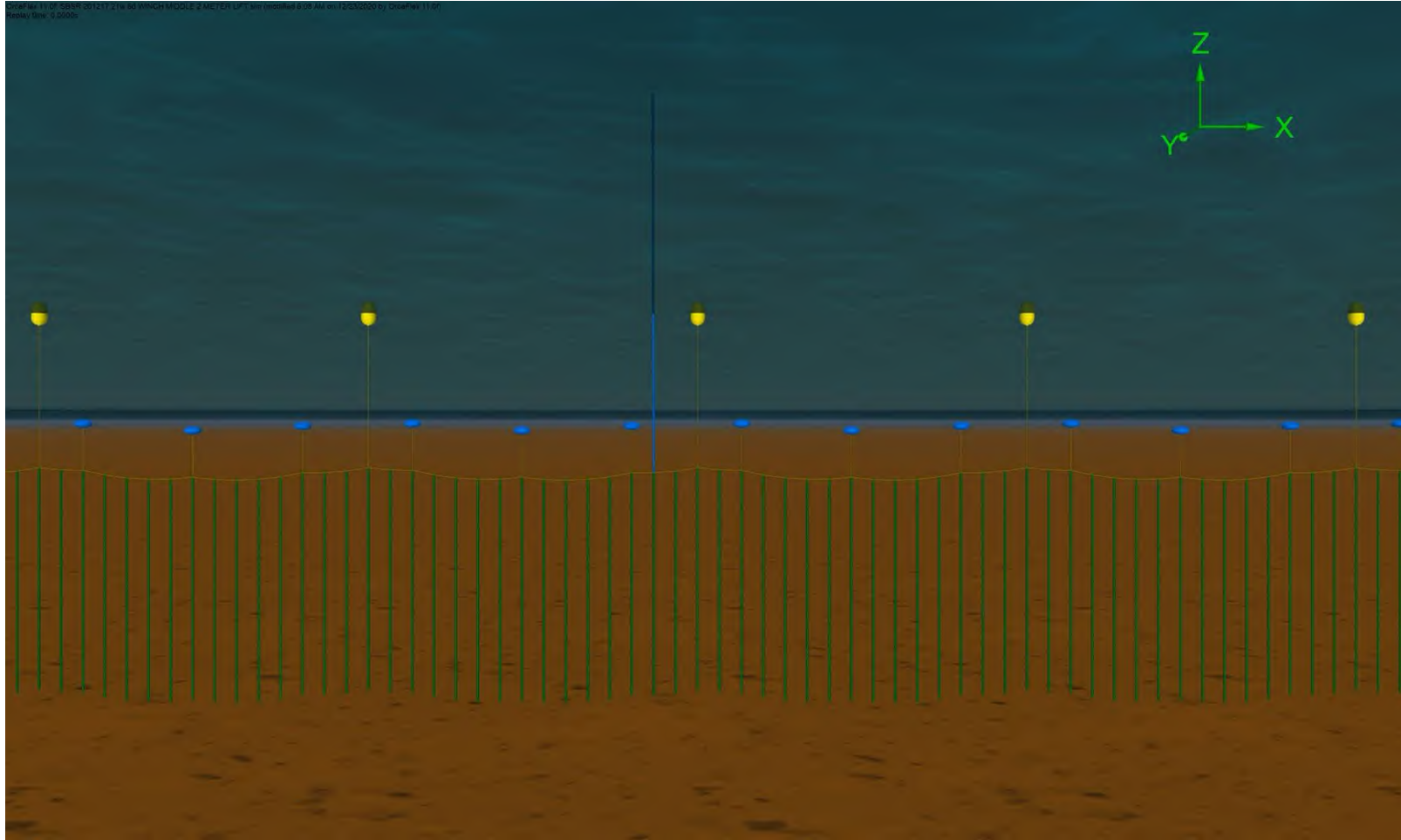
If you have any questions or concerns about your petition, please feel free to contact Susan Ashcraft directly at (916) 653-1803 or fgc@fgc.ca.gov.

Sincerely,



Valerie Termini
Executive Director

Longline Lifting Force Analysis



25-second video: Simulated longline lift to 2m above the surface for determination of lifting requirements along the longline

SBSR Website:



David Willett's vCard:





From: [REDACTED]

Sent: Friday, February 28, 2025 04:58 PM

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

Subject: comments for agenda item 3

Hello FGC

I write these comments in the last hour before the deadline for you to review before the meeting. I am attaching two previous submissions from previous years for your review. I will try to be at this meeting in person for further comment as this topic is my life's work and has the most profound effect on the future of my family.

I have been a shellfish farmer in the Santa Barbara Channel for the past 27 years. This is the only income that I have generated for my family. This income sustains us as a family and keeps us housed and fed. I have a shellfish farm one mile off the coast of Santa Barbara which is solely owned by myself and I have tied my family's health and safety to the productivity of this farm.

One overarching theme is that farming shellfish in the ocean is an extremely difficult undertaking. Farming shellfish in the ocean is very different than farming shellfish in a bay. Do not confuse the two. Over the years I've had to overcome many unknown obstacles and there is still much to be learned to be a successful ocean farmer. I have always farmed methodically and conservatively because the priority is staying in business so I can provide for my family.

It takes a lot of time and experience to learn how to farm shellfish or algae in the ocean. I would say I'm still a novice after all these years because changing ocean conditions make productivity extremely unpredictable. The challenge has always been staying financially viable that is why I am asking for help in getting native mussels and algae added to the lease. I would have attached comments I sent in last month, but I can't find them right now. Hopefully FGC staff can provide them.

I don't have too many details of the farm that is being proposed next to my farm also being discussed on this agenda, but I do know that it is too close, too big, and the applicant does not have any experience in operating a shellfish farm. I would recommend a much smaller size and further away, and a shorter duration lease. Because of numerous sewage outfalls in the area and traditional trawl grounds, there is not much room for future shellfish leases in the area. The establishment of the proposed lease may prohibit future development of the area.

I have spent my life's work farming shellfish in this area and FGC needs to carefully consider the applicant and application to make sure it's a good fit for Santa Barbara. I

would recommend engaging our local fishing community for further vetting of the application and applicant. I would also recommend an overarching aquaculture development plan for the area. We have many talented people knowledgeable about this subject that need to be engaged.

I feel that this application was opportunistic as it was only 5 months after my CEQA document was published and not properly vetted by the aquaculture coordinator. The mechanisms that the department has in place today do not bode well for the future of aquaculture development. Right now it is first come first served and whoever has the most financial resources to stomach the permit gauntlet will win. This is not a desirable outcome for sustainable aquaculture. The more expensive you make the permit, the more intensely one has to farm in order to make a return on investment. The harder the intensity of farming the more likely the environment will be harmed.

To be like me is to be sustainable. I farm lightly and economically with maximum return to my family and community. I am out of time its almost 5 pm. More to be discussed....

Bernard Friedman

Santa Barbara Mariculture

Santa Barbara Mariculture Co.

Bernard Friedman

[REDACTED]

[REDACTED]

[REDACTED]



Bernard Friedman
Santa Barbara Mariculture Co.



July 12, 2020

Dear Fish and Game Commission,

After watching the June 24, 2020 Fish and Game Commission meeting, it has become clear that the Aquaculture information report did not provide enough relevant information. The Aquaculture Coordinator and a Commissioner or two mention at the meeting that no new leases had been approved for over 20 years. I believe this not to be true. As one of your state water bottom lease holders, I feel that I must speak on subjects not being covered. I write this letter to represent myself and my shellfish lease for the State of California. The following is my own informational report to talk about subjects not covered in the AIR.

I did send comments in during the MRC meeting and they were echoed by Dr. Shuman but they were not addressed in the AIR report. I was hoping for a more programmatic vision of the future with a clear plan for how future aquaculture was going to be implemented in the State. What was made clear to me was that the Commission and the Department are going to go ahead with the first 3 application submissions before addressing the larger context. I believe this to be a mistake.

I will be submitting this letter as public comment at future Commission meetings on Aquaculture. I will also be submitting this letter to all the other regulatory agencies that have discretion over my lease. I am my own administrator when it comes to securing regulatory approval and therefore, I am also the coordinator of information for the agencies about anything related to my lease. I feel like I do not have any representation and so I must again do this for myself.

This whole letter will underscore that fact, and it's quite lengthy but hopefully just as enlightening as the AIR. As a major stakeholder in the aquaculture program, I have a lot of relevant information to convey and an interesting story to tell.

Let me refresh your memories and take you back to a letter I wrote to the Fish and Game Commission on November 30, 2017 (See Exhibit A). At that time, I had spent the last 6 years getting the old lease updated and modernized into a new lease. I had written a CEQA document and submitted it for approval in 2014. I had spent a decade working with the Department to modernize my lease and in 2017 I had become completely disenfranchised by the process. I pulled my two children out of school

and drove down through the burning fires to your commission meeting on December 7, 2017 to demand action.

At that Commission meeting I received a heartfelt apology from the Department's Deputy Director. His public apology felt personal and made my family feel relevant and appreciated. After years of my CEQA document being sidelined the document was finalized that same day and ready to be submitted for public comment at your February 2018 commission meeting.

Action by the Department and the Commission should not have had to involve pulling my kids out of school and getting really upset with your program to get respect and action. But it was precisely that action that spurred on the department to finish processing my multiple and repeated requests for due process throughout those years. It was a very pivotal and memorable moment in my career.

On May 19, 2018 I was granted a 15-year state water bottom lease. This very monumental and significant moment should not be omitted from the Department's nor the Commission's records.

This is the only state water bottom lease that successfully grows shellfish in the offshore waters of California. This is the most successful offshore shellfish farm to have ever existed in our history in the United States of America. Your own staff have currently accepted applications which are trying to copy the success of this lease. The future of aquaculture lies off our shores and this farm has broken barriers and shown a light on that future.



This lease is also your first ever state water bottom lease to receive approval from all of California's regulatory agencies to farm shellfish in this new modern-day regulatory era. I have the full approval of every regulatory agency in California to farm shellfish in California. Very few people can say that. This is also information the AIR fails to mention and is valid and important information when discussing aquaculture permitting in California.

The AIR report also fails to mention that the farm grew over 2,500 giant kelp plants in 2019 for a Department of Energy grant funding research for renewable energy. This is monumental achievement for the United States of America. Please validate my achievements. I have worked long and hard to get to where I am today. I am a very unique person with a very unique skill set and a very unique farm.

One of the Commissioner's expressed dismay that a new lease applicant has been waiting 2 years get started on a lease. I have waited too long to address this issue. I was waiting for an appropriate time to do it. I feel that I have no outlet or place to express my concerns and be heard. I realize I may have now missed my chance, but this issue is very important to me and it's time I get this conversation started.

I would like to address the subject of the proposed mussel farm, Santa Barbara Sea Ranch, that was approved to move forward by the Fish and Game Commission back in August 22, 2018. I write to express my concerns with this lease application. My concerns also carry over to the other new lease proposal off of Malibu. Both of these lease applications mimic parts of my lease and mention it in their applications, but I fear the applicants do not have the proper skills to execute such a farm. More on that later.

My first objection is the speed and process that this applicant was selected to be approved in the interest of the public. I should have made my complaints known at that time. To refresh your memory my lease had just been approved by the Fish and Game Commission in April 2018. My lease was then approved at the Coastal Commission in July of 2018. My lease had not yet gotten approval from the US Army Corps of Engineers or the Central Coast California Regional Water Quality Control Board.

At the time, I was still in lease legal limbo. I was also moving my family and getting ready for the new school year in August at the same time this proposal was before the Commission. I was not given any notification that this proposal was on the Commission agenda. Even had I known about it, voicing my concerns at that time may have jeopardized my own chances of getting approved. It was inappropriate for me at the time and possibly harmful for my own chances to get full approval of my own lease.

I do not think you followed procedure as described in the AIR. I didn't feel sufficiently notified about what is going on nor did I know about the second lease application as well. I had to find them by searching your past meetings on the web.

I am really shocked and outraged that after 10 years of working with the Department of Fish and Wildlife and the Commission to keep extending my old lease and getting a new and updated lease that the Department of Fish and Wildlife would accept the first person to copy my farming model with \$500 to apply for a space right next to my farm. Mr. Willet has no mussel farming experience. He has never even been to my farm. The only way he was able to get the information was that he was able to study my CEQA document that was made public in January 2018. Without that document being published on the internet he would not have known what to write because he has not had any mussel farming experience.

The last thing I need after struggling to get my farm permitted for decades is an even bigger mussel farm right next to mine. I have struggled for 18 years to build my business and my brand so that I can make a living and gain acceptance in the Santa Barbara community. My brand of Hope Ranch mussels has taken decades to build and market. Putting another mussel farm right next to mine will undermine my brand and will compete in my markets that I have painstakingly built.

I'm appalled that you would even consider giving a novice farmer 100 acres right next to my 72 acre farm. I have worked extremely hard to get to where I am today, and you just give the first person to apply a larger space right next to mine in the blink of an eye.

People in California will not differentiate between the two farms. All my decades of hard work will immediately be jeopardized by the mistakes of a novice farmer. My farm has large closure periods due to domoic acid and paralytic shellfish poisoning. I get a lot of Scoter duck predation. I have large winter storms and strong currents that I have to constantly manage. Why would you put an inexperienced farmer next to me? All his mistakes will become my problems. I feel that this would majorly burden my livelihood.

The environmental conditions have changed over the past few years. Global warming and ocean acidification are noticeable. My shellfish growth has slowed down considerably and I'm getting a lot of die off. I successfully applied and received two grants to work on mussel breeding to adapt my mussels to these concerning conditions. I have no expansion plans within my own farm until more resilient mussels are produced with the research currently being conducted.

This offshore shellfish farming business is incredibly hard and dangerous. Many people considering entering the profession of offshore farmer do not appreciate this aspect of my business. People are really unaware of the skill sets I have learned and earned throughout my life to be able to do this. Catalina Sea Ranch tried to imitate me and failed miserably.

Catalina Sea Ranch was a very costly lesson for me. When they started selling mussels into the marketplace, they immediately moved into my markets and drove the price down by almost half. Catalina Sea Ranch was operated by a novice farmer that blew through 5 million dollars of investment and went bankrupt with over a million dollars of debt. They were also not in compliance with the regulatory authorities.

The Coastal Commission and the US Army Corps of Engineers should have given a much smaller lease space to a novice farmer. The rules are only as good as they can be followed. It's easy to tell someone not to do something, but much harder to teach them how to do something correctly. Catalina Sea Ranch had no idea how to follow the rules and there was a major tragedy associated with the inexperience of that operation. Guess who gets to pay again for the increase in regulatory oversight due to the completely insufficient permitting vetting? I do. The rules just got tougher to comply with.

The greater tragedy is no one is taking responsibility for all the seafood consumption that goes on in California. Why must foreign environments and foreign governments pay for our seafood consumption. The real cost of producing seafood for American's to eat is entirely unaccounted. Can you imagine how much it would cost if we regulated all the seafood we consumed?

I am the best offshore mussel farmer because of my training and education, and it is not because of my ability to navigate the regulatory authority. I have attached my resume so that you can see what a qualified individual might look like when applying for an offshore lease (Exhibit B). The following is a description of all my accomplishments leading up to becoming a shellfish farmer. It is really a life-long journey.



I would like to tell you a little about myself so you get a sense of who I am and how I came to become an offshore mussel farmer. My hope is that California promotes similar dedicated and experienced people to the future of offshore farming.

My love of farming first expressed itself in my agriculture classes in high school. I joined the Future Farmer's of America. This national organization promotes and supports agriculture education, and I was the president of my high school chapter in my senior year with many awards (see exhibit C). I earned a Biology Degree from UC Santa Cruz. I was taught by some of California's most famous marine ecologists such as John Pearse and James Estes to name a few. Dr. Pearse taught my kelp forest ecology class and Dr. Estes was my adviser for my senior project studying urchins and kelp on a remote Aleutian Island in Alaska.

My scientific diver and dive master training was taught by the legendary and late Don Canestro. He was the diving safety officer at UCSC at the time. I worked as a scientific diver for Dr. Mark Carr, Dr. Steve Gaines, Dr. Pete Ramondi, and Dr. Dan Reed to name a few. These are all some of California's most venerated marine ecologists.

My training and education for working in the marine environment continues when I completed my A.S. in Marine Diving Technologies at the Santa Barbara City College. I learned from Don Bartholomew and Jerry Clauser who are legends in their fields of commercial ROV work and commercial diving respectively. I received my Commercial Diving certificate from that program and went to work for Ecomar Inc. harvesting mussels off of 8 oil platforms in Southern California.

Dr. Bob Meek, the founder and owner of Ecomar is also a legend that should not be forgotten. He is the only person in America or anywhere in the world to successfully harvest edible mussels off of oil platforms, and he did it for decades. We sold mussels all over the United States and people loved them. I joined Ecomar in 1998, and I loved it, and Dr. Meek opened up a whole new world for me and he became a role model. He taught me the nuts and bolts of managing a business on the ocean. I worked for him for a total of 4 years.

I continued my education of the marine environment even further. I went to the University of Ireland and did all my course work for my Master's degree in Fisheries Management, Development, and Conservation. That program was Ireland's answer for being tasked with complying with the European Common Fisheries Policy while trying to keep their local fisherman employed.

After the 10 months of classes, I went back to work for Dr. Meek at Ecomar. He wanted to start growing oysters off one of the oil platforms and we struck a deal that while I was growing the oysters for him, I would also be able to design a Master's thesis with the University of Ireland that would satisfy their requirements to complete my degree. My master's thesis "Developing Oyster Culture in The Santa Barbara Channel" was submitted and accepted a few years later.

All this happened before I started working on my state water bottom lease back in September of 2002. I have worked hard and diligently as a shellfish farmer for the last 18 years supporting myself and now my family with that lease. My family is dependent on this lease for income, it would be disastrous if the lease were taken away. It's not like I can get a job as an offshore shellfish farmer somewhere else.



I hope by now you see why I am so infuriated with how easily and quickly Mr. Willet was able to apply for a lease right next to me. Although I feel honored that he wants to copy me. He even has his yacht parked on the same finger as mine in the Santa Barbara Harbor. I feel Mr. Willets does not even come close to having my training and experience. I have acquired decades of training and education in building up experience and talent so that I can gain the public's trust in allowing me to farm off the coast of Santa Barbara. If you let an inexperienced operator start up next to me, and that person messes up, it will jeopardize and possibly erase decades of my work.

My next point I would like to make is the insanity of taking the first 4 applicants for a state water bottom lease and then closing the process to any new applicants. That's crazy, no organization takes the first 4 applicants that show up for the job. By taking the first 4 applicants, you are now excluding more qualified candidates. You shouldn't take the first person with \$500 and then spend all your time vetting that one application. You should pull from a pool of the most talented people you can find if you want aquaculture to succeed in California. The Commission should change from an open access policy to a more discerning one.

The future ocean farmers that are going to manage these offshore leases need experience in the offshore environments so they can make appropriate decisions. The reality is that there is a very limited number of leases that can be created in State waters. Make sure you have the very best. The people at the top, signing their name on the dotted line need to know how to run offshore farms. The ocean will sort them out for you, so why spend all your time getting weak applicants through the process.

The department's permit counter and the California Shellfish Initiative have not been helpful. I just want to let you know that there has not been any coordinating with other regulatory agencies in regards to my lease. I am responsible for complying with all the rules and coordinating with all the agencies. In effect, I feel aquaculture is not a program of any kind here in California. It is a group of individuals who have somehow managed to find a way to farm in California's State waters. I think it is less than 20 individuals. I would not call this an industry. I don't feel I have any representation. There seems to be no coordination going on. You can clearly see from this letter that I must be my own advocate.

I have been advocating for offshore aquaculture for some time now. I feel I am clearly ahead of my time. I have shown this State it is possible to get an offshore farm permitted in California and that one can be managed and accepted by the local community for 18 years. I really want the best for the future of aquaculture.

Aquaculture does not have to be a race to the bottom like many industries in the world where we suck up the resource faster than the competitor can. The State has invested too little in the future of aquaculture. The State regulatory agencies have made it very clear on what not to do, but I feel that there is no advice on how to farm offshore properly. If you feel aquaculture is in your future, invest in training your future farmers and give them the necessary resources to be successful.

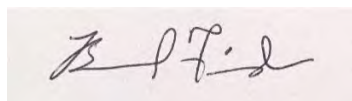
I would like to see aquaculture administered at a more local level. Please welcome any port district involvement. I feel that the ports have more resources for solving local problems and have the knowledge and experience to administer aquaculture in their local district. They will also be invested in marketing aquaculture products so that their constituents are working together to build markets and

not competing against each other for the same market. This is very important to create a thriving industry. California aquaculture needs to be marketed to be competitive with imports.

Please also welcome the Ventura Shellfish Enterprise back into State waters. I think they made a mistake by moving to Federal waters. I'm very certain that the VSE has a much better chance to be successful in State waters.

I feel very deeply about the future of aquaculture here in California. I have put it all on the line. My family's health and upward mobility are directly tied to the success of my State Water Bottom Lease. I am very aware that I operate on public resources and I would like to contribute to keeping those resources available for future generations. For me, farming is all about discovering these deep new relationships. Aquaculture can be a tool to lower our impact on the Earth's resources if put in capable hands. I feel like we are just at the beginning at discovering our relationship with offshore aquaculture.

Yours Truly,

A handwritten signature in black ink on a light pink rectangular background. The signature is cursive and appears to read "Bernard Friedman".

Bernard Friedman

EXHIBIT A

11/30/2017

bernard friedman
[REDACTED]

Californian Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Dear Commissioners,

Regarding AGENDA ITEM 25 for the Commission meeting on December 7, 2017

I will be attending this meeting with my family. I would like to request 5 minutes of speaking time regarding this agenda.

Santa Barbara Mariculture is owned 100 percent by myself. Lease M-653-02 being considered for extension on this agenda provides 90 percent of my family's income. The other 10 percent comes from commercial lobster fishing. We are a fishing family dependent on California's marine resources for our wellbeing.

The process of seeking a lease extension for the past 6 years has eroded my family's upward mobility. I feel that this ultraslow progression has harmed my family's future and retarded any potential growth as I am being required to stagnate in a process with no means of escape except to quit.

My kids are growing up. I'm getting older. Progress is happening all around me except my means to make a living is stuck in an endless permitting cycle. The cost, time, and anxiety created by this dysfunctional bureaucratic procedure has eroded my family's future prosperity as a fishing family.

In 2012, I was informed by the Coastal Commission that this lease was permitted for only one acre in 1985. This notice sparked a cascade of events which mandated that basically all of lease M-653-02 be updated to present day standards.

I have spent hundreds of hours working with the department of fish and wildlife. I have spent \$25,000 getting the farm surveyed and a CEQA document prepared by a third party. I have spent 6 years coming to fish and game commission meetings asking for a lease renewal every year. I have spent thousands of hours worrying about my future and how and if I am going to get through this process and be a fully legitimate and permitted shellfish farmer in California.

After all this time and energy, I have yet to begin the permitting process. The department is again asking for a lease extension, and again, they promise this will be the last extension. During the last commission meeting in which the lease was on the agenda, Director Bonham stated the department was going to "either do this or not". It's now 6 months later, and as you know, the department did not. I am exhausted, angry, and completely disenfranchised with this process.

This lease still has to go through public comment. It still has to go through the Coastal commission process, and then through the army corps of engineer process. This is just what I know. Many unknowns could surface. At this rate, it is quite possible I will retire before this lease is fully permitted.

Not being able to grow my business as it naturally would has impacted me in many ways. No permanent employees. No investment or upgrades in infrastructure. Wasted mussel seed and opportunities because the farm doesn't have enough room to do its business as it was planned and designed many years ago.

I am extremely concerned for my family's future and welfare. I am bringing them to this Commission meeting so that we can hear accountability, get some recourse for the harm that's been done, and find a vision for moving forward so that my family can get back on track with our future.

Earning a living as a fisherman and a farmer is one of the toughest jobs on this planet. The permitting process does not take the difficulties of this job into consideration. There is no empathy displayed for my family. The process is making it really hard and expensive for me to compete with foreign mussels imported into California. Why is it okay to grow mussels in New Zealand and Canada for consumption in the California, but not in California?

There are only 3 mussel farmers in California growing less than 1% of the mussels consumed in California. There are only 14 shellfish farmers in the State. California only has 60 aquaculture registrations making over \$25,000. Registrations are projected to decline. This is the wrong direction for the aquaculture department to be heading. Sixty people in the entire state is not an industry.

Five years ago, Assembly Bill 1886 (Chesbro, 2012) was created and supported by the aquaculture "industry" to add program capacity. The bill increased registration fees by 20%. As a result there are now 14% less registrations. The aquaculture program is estimated to run a deficit in 2017 with future increasing deficits. The aquaculture program is slowly going broke.

Where is my family's future when the department cannot responsibly manage the aquaculture program? Where is the vision for the future? Are we always going to be dependent on foreign countries exporting their seafood to California? Who is going to take responsibility for California's seafood consumption?

How does this Commission envision the future of aquaculture for California? This family wants to know, and would like to hear from you at the commission meeting. I'm taking my kids out of school because it is important for them to hear their future and understand how it is affecting their lives. Please make it a learning experience. We want to hear your thoughts, opinions, and ideas on our future as part of this process. We want to be engaged with respect and dignity that we feel we deserve.

Please hold people accountable and responsible for not moving this process along. Instill some justice. Start the healing so that this family can believe and have faith in this process. We need your help.

Sincerely,

bernard friedman

EXHIBIT B

 PERSONAL QUALIFICATION SUMMARY: **Bernard Friedman**
Contact Information

Santa Barbara Mariculture Company

1. Education and Training

MSc. Fisheries Management, Development, and Conservation from the University of Ireland, June 2002
 B.A. Biology from the University of California, Santa Cruz, June 1995
 A.S. Marine Diving Technologies, Santa Barbara City College, June 1998
 Shellfish Handling and Marketing Certificate from F.D.A. California (Current)
 CA Dept. of Public Health Growing Area Certificate M-653-02 (Current)
 ServSafe Food Protection Certification (Exp. 2021)
 FDA certified offshore wet storage facility (current)
 Certificate of Training for Commercial Diving, Santa Barbara City College (1998)
 Certificate of Training for Research Diving, UC Santa Cruz (1994)
 Certificate of HAACP Course Completion (2003)
 Basic Sea Survival Course Training, Ireland (1999)
 Emergency Medical Technician Certificate, Santa Barbara City College (1998)
 Master of Dendrology Honorary Award, Palm Beach Gardens High School, Florida (1991)
 Agricultural Achievement Award, Palm Beach Gardens High School, Florida (1991)
 National Outdoor Leadership School Certificate, Wind River Range, Wyoming (1988)

2. Employment history

2002-present: President of Santa Barbara Mariculture Company, Santa Barbara, CA.
 2010-2018: Commercial Lobster Fisherman, Santa Barbara, CA.
 2009-present: Offshore Shellfish farming Consultant, North America and Central America.
 2003-2004: Commercial Fishing Deckhand for Lobster and Sea Urchin, Santa Barbara, CA.
 1998-2003: Commercial Diver, Ecomar Inc., Goleta, CA.
 1996-1997: Lab Technician and Scientific Diver for Marine Science Institute, UC Santa Barbara, CA.
 1996: Scientific Diver, National Biological Services, Shemya Island, Alaska.

3. Publications

Cheney, D., Langan, R., Heasman, K., Friedman, B. and J. Davis. 2010. Shellfish Culture in the Open Ocean: Lessons Learned for Offshore Expansion. *Marine Technology Society Journal* 44 n.3: 55-67.

Friedman, B. Developing Offshore Oyster Culture in the Santa Barbara Channel. 2002. Dept. of Zoology. National University of Ireland, Cork.

4. Synergistic activities**5. Collaborators and other affiliations**

Commercial Fisherman of Santa Barbara, Board Member.
 Paso Pacifico Nicaragua, Development and Education Advisor.
 Ventura Shellfish Enterprise, Development and Education Advisor.
 NASA Ocean Research from Space, Business Amplifier panelist.
 Master's Student Advisor at The Bren School of Environmental Science, UCSB.
 California Aquaculture Association, Member.

Filmography

- “The Salty Generations” Independent Film. Shawn Wolf Productions. June 2018.
 “Are you Committed?” Billion Dollar Buyer. Season 2, Episode 2. CNBC. November 2016.
 “Mussel Man” Documentary Santa Barbara Film Festival. Barefoot Productions. February 2015.
 “Oysters on the Half Plate” Storage Wars. Season 4, Episode 7. A&E. May 2013.

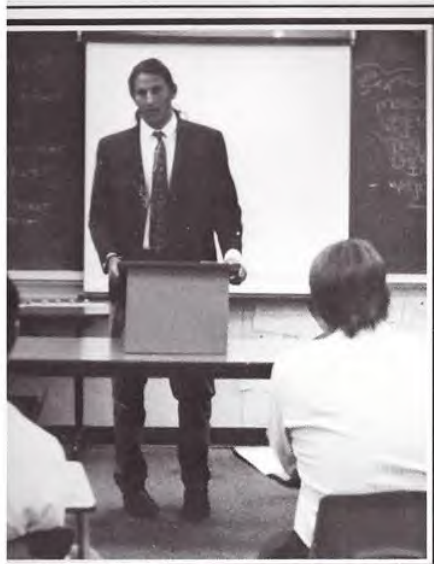
Featured Publications about Santa Barbara Mariculture

- Purveyor of the year (Award). Santa Barbara Independent. August 2019.
 State of California Natural Resources Agency, Fish and Game Commission Mitigated Negative Declaration for Santa Barbara Mariculture Company Continued Shellfish Aquaculture Operations On State Water Bottom Lease Offshore Santa Barbara, California. Prepared by: California Fish and Game Commission Staff. January 2018
 Using Scientific Muscle to Grow Safer Mussels. NASA Earth Observatory. Editorial. January 2018.
 Flexing Mussels Over Mussels. California’s Only Open-Ocean Shellfish Farmer Struggle’s to Grow His Santa Barbara Operation. By Matt Kettmann. Santa Barbara Independent. April 2015.
 Hope Ranch Mussels with Sweet Corn and Chile Vinaigrette from Downey’s. Cover photo by Shelly Vinson. Food and Home Santa Barbara Magazine. Spring 2016.
 Mussel Madness. Dinners on the Central Coast are in Love with this Brilliant Bivalve. By Jenn Kennedy. Cover Photo by Bernd Zeugswetter. Food and Home Santa Barbara Magazine. Fall 2014.
 Hooked on Local Catch. By Shannon Turner Brooks. Santa Barbara Season’s Magazine. Summer 2011.
 The Last Bite. Bernard Friedman, Santa Barbara Mariculture. By Laura Sanchez. Edible Santa Barbara Magazine. Winter 2010.
 Mussel Boat. Cover Photo and editorial. Fisherman’s News. February 2007.
 California Gets Canadian Mussel Rig. Editorial. National Fisherman. March 2007.
 Built to Order Boats Delivered to Two Shellfish Companies. Editorial. Longlines. May 2007.
 Champagne and Shellfish Get Together at The Hotel Del. By Nina McDonald. Coronado Eagle and Journal. March 2007.
 Santa Barbara Mariculture Plying New Waters. Editorial. Longlines. July 2004.
 A Pearl of a Find. Farmer’s Market Report. By Diane Rodgers. April 2004
 Up from the Deep. Cover photo by Mehosh Dziadzio. Food and Home Santa Barbara Magazine. Winter 2003.
 Picks of the Week. Pacific oysters. Editorial. Santa Barbara News Press. October 2003.
 Food for Thought: Fresh Fish for the Eating. By Sally Scappon. The Beacon. September 2003.

Grant research on the farm

- USDA SBIR. Investigating the California Mussel as a new species for aquaculture production. May 2019,
 Pacific States Marine Fisheries Commission. Developing Locally Adapted mussel varieties for aquaculture production the Southern California Bight. July 2019.
 ARPA-E Mariner program. Genome-Wide Association of Studoes for Breeding M. Pyrifera. March 2018,

EXIBIT C



The club with a

Green Thumb

The Future Farmers of America originated from the Horticulture class. The organization was for people who were interested in the Agriculture field and may possibly be seeking a job in the future in this area. FFA participated in many different contests throughout the year such as plant and vegetable identification- both

held at the South Florida Fair, Forestry Field Day, and numerous others. The main purpose why many joined this club was to develop and learn more about plants, the environment in which they grow, and learning skills which will help them in future Agricultural career choices.

-Jennifer Hanson



Front row: Jason Schmidt-Secretary, Joy Gray-Vice President, Mr. Culbert-Sponsor, Susie Hahn, Aaron Rhodes-Sentinel. Back row: Mike Doran, Evan Weilage-Treasurer, Rick Embray, Bernie Friedman-President, Tim Wallace-Reporter, Kris Franzen. Not Pictured George May and Calvin Wright-Parliamentarian. *Photo by: Bryn Alan*

President, Bernie Friedman gives his speech to the judges in an extemporaneous speaking competition. *Photo by: Susie Hahn*

Tim Wallace, George May, Rick Embray, Bernie Friedman, and Kris Franzen pose while attending an Agricultural leadership school. *Photo by: Susie Hahn*



rom: "

Sent: Tuesday, October 27, 2020 8:56 PM

To: FGC@fgc.ca.gov

Subject: FGC MRC Meeting Nov. 10, 2020 Agenda Item 5. New Marine Aquaculture Leases in California

FGC MRC Meeting Nov. 10, 2020

Agenda Item 5. New Marine Aquaculture Leases in California

I am a major proponent for offshore aquaculture. I have made it my life's work to develop and promote it. Please, for the future of aquaculture, **do not create any new leases** until you have created a vision and a comprehensive management program for implementation of new state water bottom leases.

Please direct all new applicants (including the ones that are already in the queue) to port districts that are willing to do the heavy lifting for training and vetting of new offshore leases. I am lobbying the Ventura Shellfish Enterprise to head back into State waters. They will be able to have more success as offshore mussel farmers in more protected waters. I will be applying for one of those leases when their operations plan is more comprehensive and realistic.

Your permit counter does not work. How can you accept any applicants when it does not work for your current State water bottom lessees.

Right now, applicants will still be going through the permit process sequentially for each agency. **I will be voicing my opposition of your first applicant throughout this process.** My reasons have been detailed in a letter I sent to the department and the commission dated July 2, 2020.

The last offshore mussel farm to copy my farm was a complete disaster. Catalina Sea Ranch was non-compliant to the permit conditions of their lease and ended up in bankruptcy with major liabilities. It still hasn't been made clear to why a non-compliant and bankrupt company can be bought at a private auction for \$1.75 million so the next unqualified lease holder can get another chance. That lease should be going back into the public trust. What message does this send to the people of California?

This state is not ready to manage individual leases at the State level. The last 20 years should be proof of that. The Fish and Wildlife department has accepted an application for 100 acres right next to my farm by an unqualified candidate. **This minimizes my life's work and is completely disrespectful to all my success which I have worked so hard for.**

There is only enough room for about 3 shellfish farms off the coast of Santa Barbara in State Waters. I would love an experienced and capable neighbor to contribute to what I have already built to make a stronger group of shellfish farmers. Seaweed and scallop farming would be very good compliments. This applicant that has applied to be next to me will only compete with what I have already created. The applicant adds nothing to the future of aquaculture. It is such a slap in the face for the Department to allow for someone to completely rip me off.

By giving a lease to an unqualified farmer, you are sacrificing future opportunities for more qualified applicants. Applicants that will contribute significant contributions to offshore aquaculture. **Please do not sacrifice what little that is available to such a weak applicant.**

Bernard Friedman
Santa Barbara Mariculture Company

Existing Leases and Pending Requests Under Review

Status Update

*Marine Resources Committee
California Fish and Game Commission
March 13, 2025*

Randy Lovell
State Aquaculture Coordinator
California Department of Fish and Wildlife



Existing State Water Bottom Leases

- 17 state water bottom leases
 - 15 in Tomales Bay and Morro Bay
 - 2 in ocean waters (Santa Barbara Channel)
- Approximately 900 acres of state-owned aquatic lands
- Operated by 11 commercial businesses



2024 Statewide Production (*state leases and local jurisdictions*)

- Oysters (*seed and market size*)
 - Pacific, Kumamoto, Eastern, European Flat, Olympia (native)
- Manila Clams (*seed and market size*)
- Mussels

<i>'singles' produced (2024)</i>	<u>All Oysters</u>	<u>Manila Clams</u>	<u>Mussels</u>
Tomales Bay	6,041,165	20,160	147,080
Morro Bay	426,792	9,180	0
Santa Barbara Channel	7,974	0	1,405,060
<i>State Leases:</i>	6,475,931	29,340	1,552,140
Humboldt Bay	8,195,122	<i>(seed: unreported)</i>	0
Total:	14,671,053	-	1,552,140

Successful seed production in Humboldt Bay

- 'high-health' location = approved for import by other states/provinces
- major seed source for North American west coast shellfish industry (~ \$100M value)
- offshore wind terminal in Humboldt Bay could potentially jeopardize biosecurity

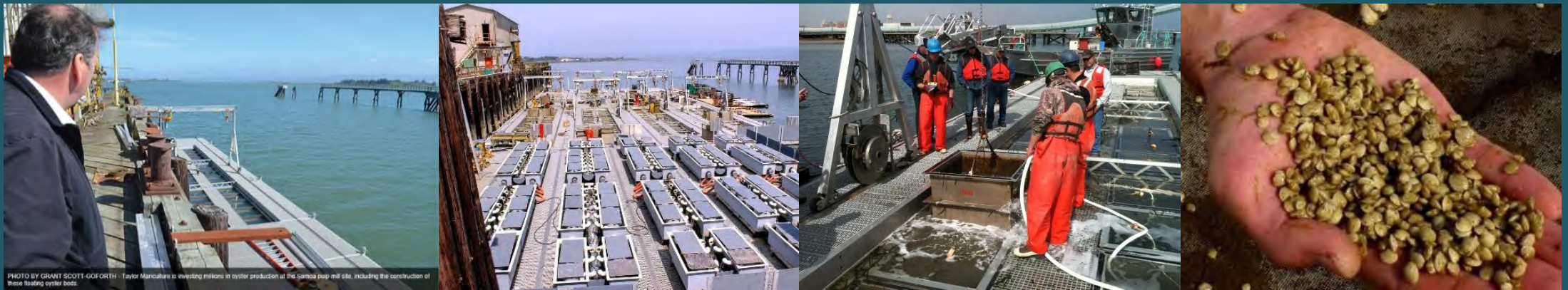


PHOTO BY GRANT SCOTT-GOFORTH - Taylor Manufacturing is investing millions in oyster production at the Sisson pump mill site, including the construction of these floating oyster beds.

photo: CA Sea Grant / Humboldt State Now

New Lease Applications & Amendment Requests

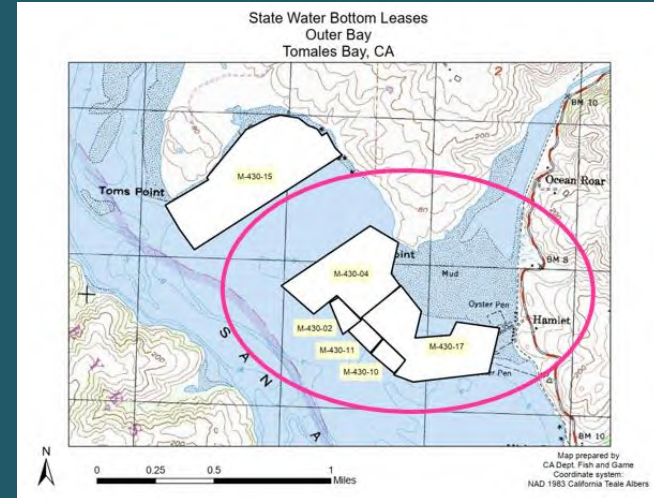
New Leases proposed (3)	2 active applicants addressing CEQA 1 dormant (per applicant)	
Species additions (6)	CEQA efforts and/or lease agreements execution	
Culture method changes (1)	administrative review	
Boundary reconciliations (5)	Tomales Bay (Walker Creek area) shared boundaries	coordinating growers and CDFW surveyor

Lease Boundary Reconciliations

Tomales Bay

- Marconi area completed
- Walker Creek area next

Walker Creek area



Plat

CDFW Aquaculture Program
State Water Bottoms for Aquaculture Leases
Tomales Bay
March 15, 2021

LEGAL DESCRIPTION

All that certain real property situate in the State Water Bottoms of Tomales Bay, County of Marin, State of California being all that portion of the following describedwater bottom area:

M-430-05

COMMENCING at metal rod in monument well, being a National Geodetic Survey monument stamped "X 1395 1987" and Permanent Identifier (PID) of JT9483, from which point a brass disk in boulder, also being a National Geodetic Survey monument stamped "Hans 1906" and Permanent Identifier (PID) of JT2551, bears North 34° 06' 08" West 7357.50 feet; thence from said Point of Commencement South 14° 55' 47" West 382.58 feet to the Point of Beginning;

THENCE FROM SAID POINT OF BEGINNING the following fourteen (14) courses:

- 1) South 40° 00' 00" East 650.00 feet;
- 2) South 17° 00' 00" West 1,875.00 feet;
- 3) South 25° 40' 37" East 804.08 feet;
- 4) South 49° 35' 00" West 190.27 feet;
- 5) North 40° 00' 00" West 6,810.86 feet;
- 6) North 09° 00' 00" West 756.03 feet;
- 7) North 74° 40' 00" East 1,189.23 feet;
- 8) South 01° 15' 00" East 725.00 feet;
- 9) South 60° 15' 00" West 725.00 feet;
- 10) South 36° 15' 00" East 950.00 feet;
- 11) South 59° 30' 00" East 1,500.00 feet;
- 12) South 40° 00' 00" East 475.00 feet;
- 13) North 69° 35' 00" East 950.00 feet;
- 14) South 59° 29' 00" East 975.00 feet to the POINT OF BEGINNING.

Containing 160.49 Acres, more or less.

Coordinates and Bearings are based upon the California Coordinate System of 1983, CCS83, Zone 3, (2011). Distances shown hereon are ground distances. To approximate CCS83 grid distances multiply the distances by the combination factor 0.99995347.

End of Description

Exhibit attached hereto and by this reference made a part hereof.

Page 1 of 2

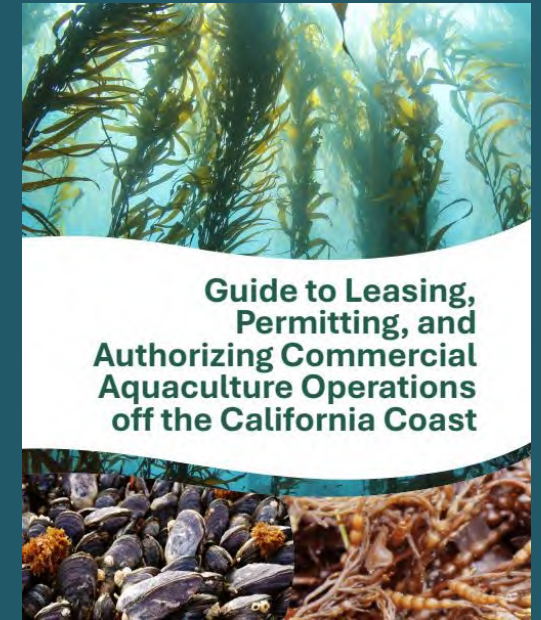
Legal Description



Exhibit

Achievements

- improved early coordination – all agencies (new leases, compliance)
- guide for marine aquaculture permitting (federal and state waters)
- grant proposal: marine debris removal (under review, NOAA)
 - includes removal of legacy gear at 2 sites (SB & Tomales)
 - financial surety review and reform
 - study of gear use & removal impacts
- lease assignment approved, (Cove – Starbird, Feb 2025)
 - financial surety and lease agreements forthcoming for execution



Additional Marine Aquaculture Projects & Policies

- Aquaculture Opportunity Area - programmatic environmental review & spatial planning
- Biosecurity at Humboldt Heavy Lift (Offshore Wind) Terminal – Aquaculture Disease Committee
- Proposed seaweed farm - federal waters within proposed AOA (Ocean Rainforest)
- Marine Aquaculture Action Plan – led by Ocean Protection Council
- Shellfish Best Management Practice Plans – desired outcomes / performance standards to be defined
- Wild Broodstock Collection – as applied to seaweeds
- Sustainable Aquaculture Program revenues and capacity needs

Thank You

Randy Lovell
State Aquaculture Coordinator
aquaculturecoord@wildlife.ca.gov



STAFF SUMMARY FOR AUGUST 22-23, 2018
For Background Purposes Only

12. RED ABALONE

Today's Item

Information

Action

Consider authorizing publication of notice of intent to amend regulations to extend the fishery closure sunset date for the recreational red abalone fishery.

Summary of Previous/Future Actions

- | | |
|---------------------------------|---------------------------------|
| • Today's notice hearing | Aug 22-23, 2018; Fortuna |
| • Discussion hearing | Oct 17-18, 2018; Fresno |
| • Adoption hearing | Dec 12-13, 2018; Oceanside |

Background

In Sep 2017, DFW identified sweeping changes in density, occurrence, depth distribution, size and health of red abalone as well as the kelp upon which it depends for food. In addition, DFW found that the average density of red abalone populations has declined below the Abalone Recovery and Management Plan (ARMP) fishery closure trigger of 0.30 abalone per square meter, indicating that the stock could no longer support a fishery.

In response to the DFW findings of a dramatic fishery-wide decline of red abalone populations from severe starvation conditions, in Dec 2017 FGC adopted regulations to close the recreational abalone fishery consistent with the ARMP. FGC also adopted a sunset provision for the closure based on significant public comments received during the rulemaking process to address concerns about having a fishery closure for an indeterminate period. Under existing regulations, the fishery would re-open on Apr 1, 2019, or upon adoption of a red abalone fishery management plan (FMP) and the guidance it provides for fishery reopening, whichever comes first.

The regulations closing the recreational abalone fishery became effective on Mar 29, 2018. If the existing regulations are not amended to delete or extend the sunset date (subsection 29.15(j)), the fishery will re-open on Apr 1, 2019, which will allow for the recreational take of abalone in open fishing areas during the open season (subsections 29.15(a), (b), and (c)).

Since the closure of the recreational fishery, DFW has found no meaningful changes in the abalone resource conditions described in the Sep 2017 initial statement of reasons. DFW received documented reports from the public of dead and dying abalone washed ashore at various locations in Sonoma and Mendocino counties over the 2017/18 winter and spring seasons. This information suggests that abalone continue to be weak and die due to current environmental conditions and, thus, there are no substantial positive population changes since last year. DFW concludes that re-opening the fishery at this time would be inconsistent with the ARMP and would be detrimental to the recovery of red abalone populations.

Proposed Amendment

DFW proposes to extend the closure of the abalone fishery beyond the current Apr 1, 2019 sunset date for another two years, until Apr 1, 2021. Effective dates for take and possession

STAFF SUMMARY FOR AUGUST 22-23, 2018
For Background Purposes Only

contained in the abalone fishing regulations would be updated as well to reflect the proposed change.

DFW's proposal allows for consideration of a fishery re-opening prior to reaching full recovery (i.e., re-opening the fishery before density standards are fully realized under the ARMP or a red abalone FMP upon adoption by FGC). DFW recommends, however, considering the management triggers in the ARMP or a red abalone FMP once adopted by FGC to determine whether re-opening the fishery to recreational harvesting is warranted. The proposed regulation change is necessary to facilitate recovery of the red abalone population while preparation of the red abalone FMP is currently underway.

Public Comments (N/A)

Recommendation

FGC staff: Authorize publication of the notice as recommended by DFW.

DFW: Authorize publication of the notice as detailed in the draft initial statement of reasons (ISOR).

Exhibits

1. DFW memo, received Jul 30, 2018
2. Draft ISOR

Motion/Direction

Moved by _____ and seconded by _____ that the Fish and Game Commission authorizes publication of a notice of its intent to amend Section 29.15, related to recreational red abalone fishing regulations.



Abalone Harvest Risk Tolerance

March 13, 2025

Presented to:

Marine Resources Committee
CA Fish and Game Commission

Presented by:

Joanna Grebel
Invertebrate Program Manager
Marine Region



Outline

- History of Commercial Abalone Harvest
- Current Status of Abalone
- Red Abalone Recreational Fishery
- San Miguel Island
- Department Recommendations
- Next Steps



Commercial Harvest History

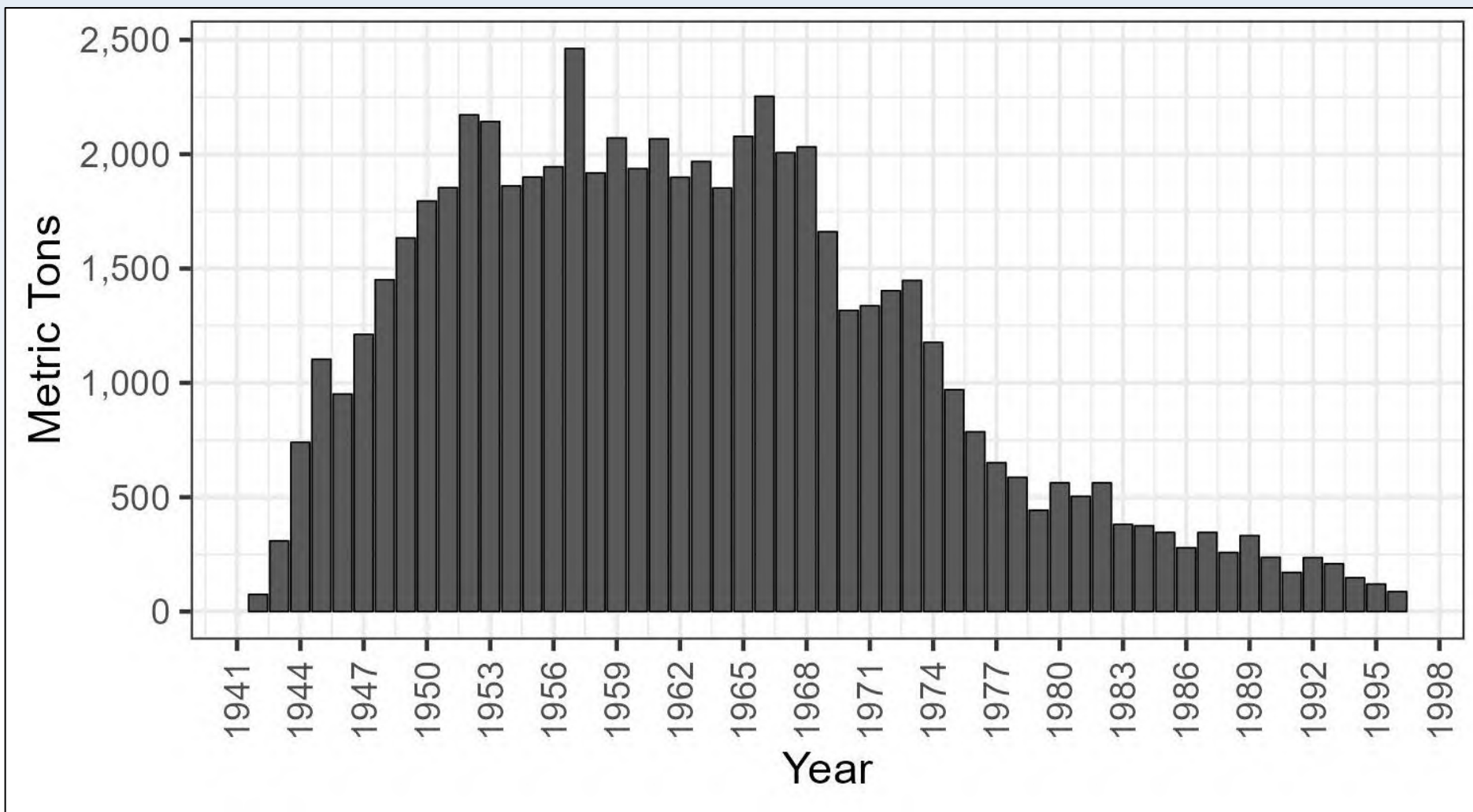
- Late 1800's-1940's: Beginning and growth of commercial fishery
- 50's-60's: Height of commercial fishery, steady landings
- 70's: Rapid decline in landings and serial depletion
- 80's-90's: Low, declining landings and closure of fishery in 1997



Abalone Shell Dump, Seaside, Calif. April 15, 1921. Photo: Monterey County Historical Society.

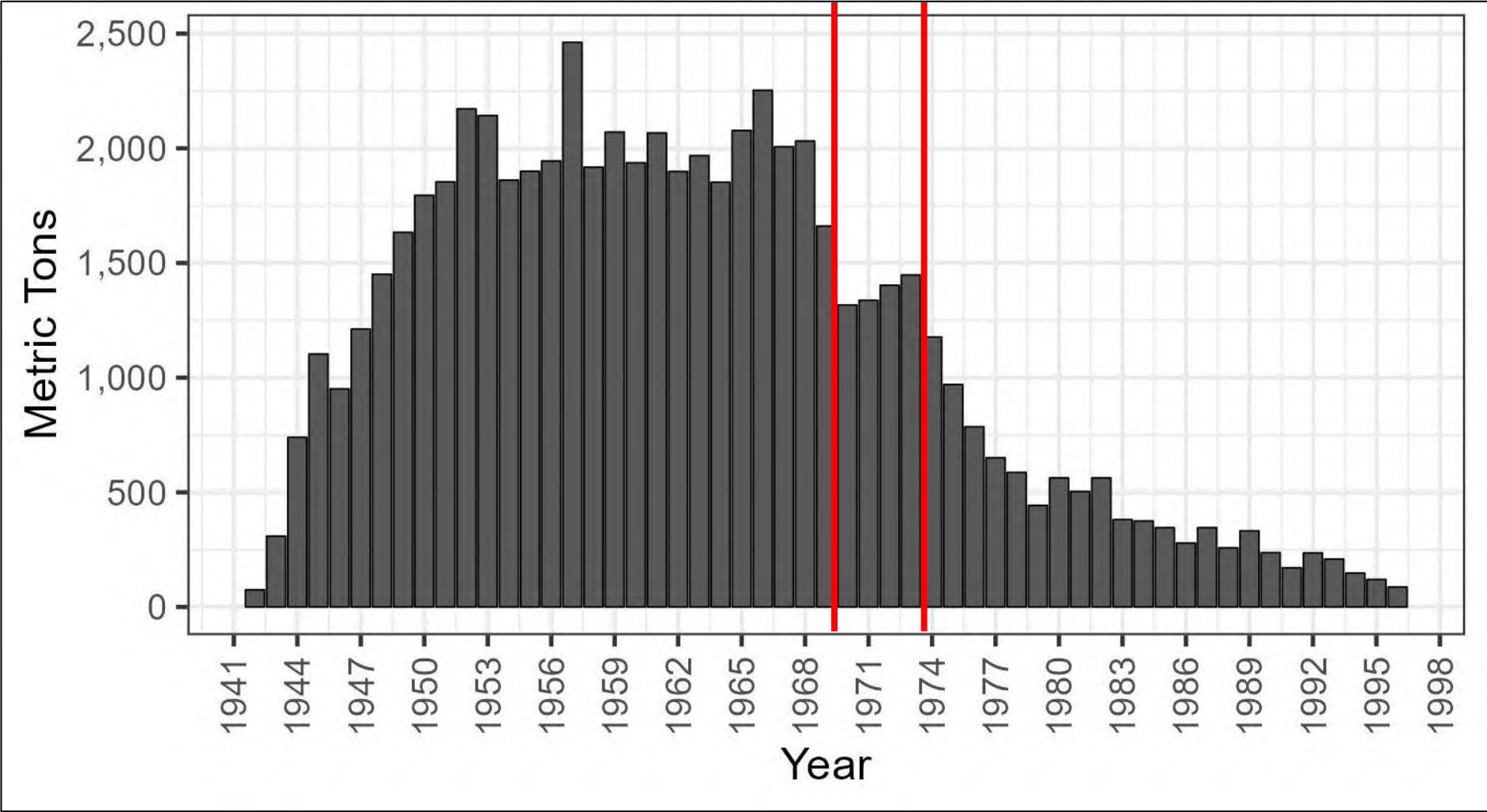


Commercial Abalone Landings



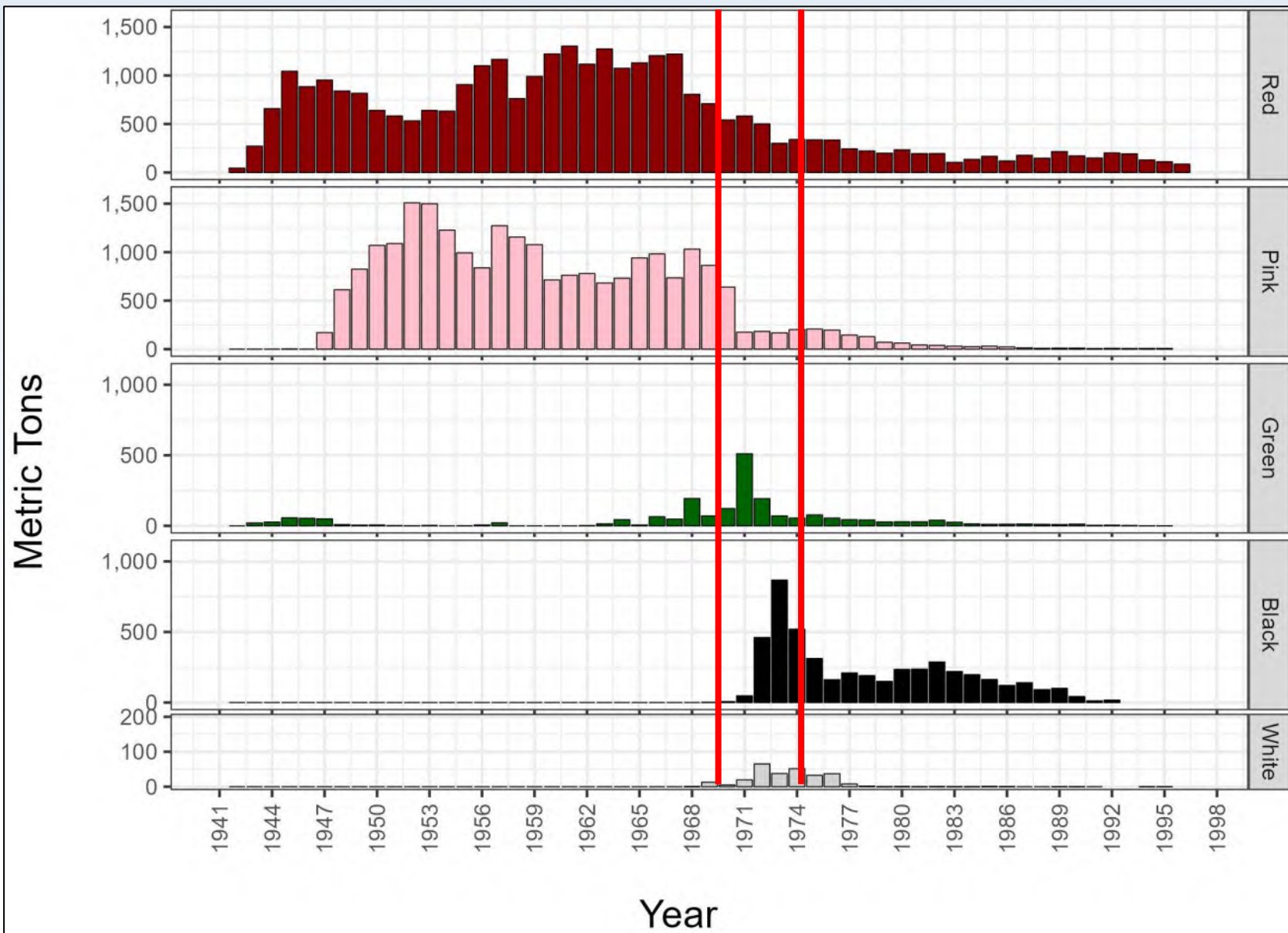


Commercial Abalone Landings- Cont.





Serial Depletion





Current Status

- All 7 CA abalone species remain depleted
- White and black abalone are federally endangered and have federal recovery plans
- CDFW is a key partner supporting Section 6 grants for both species



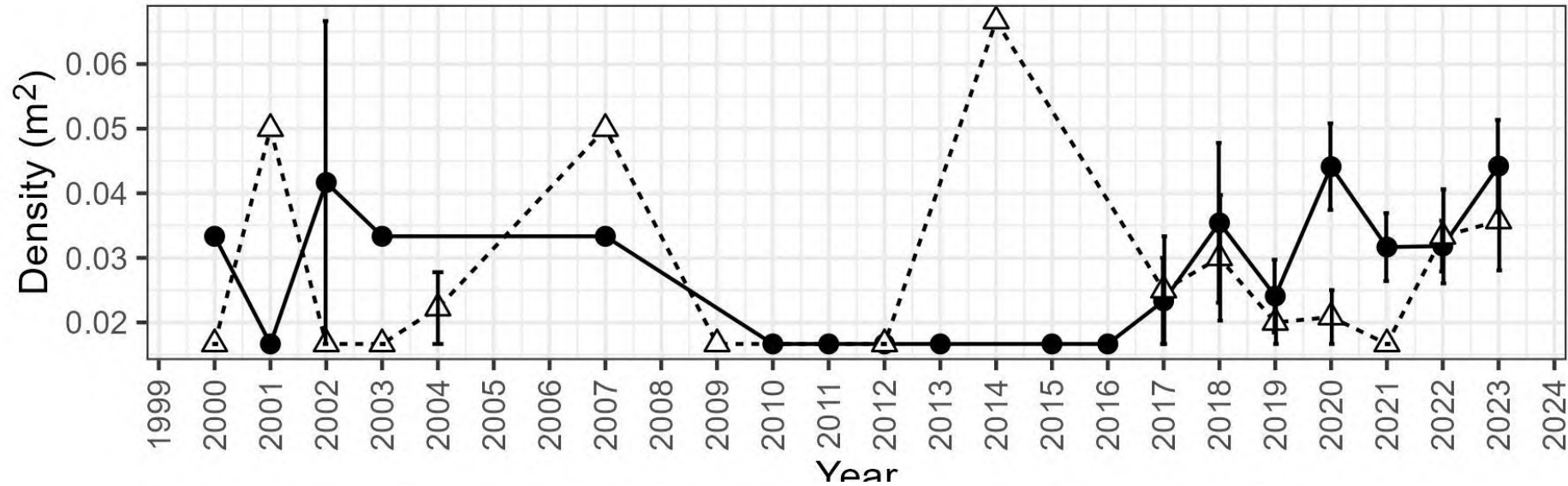
Photo Credit: A. Maguire



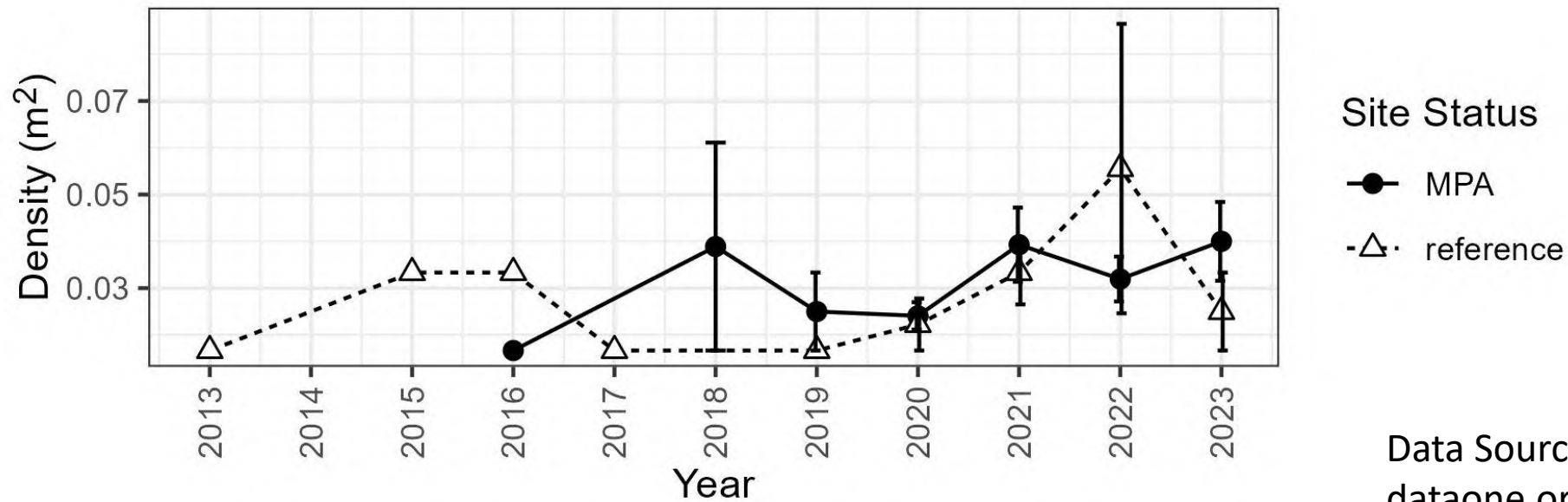
Photo Credit: D. Stein



Current Status - Pink and Green Abalone



Pink



Green

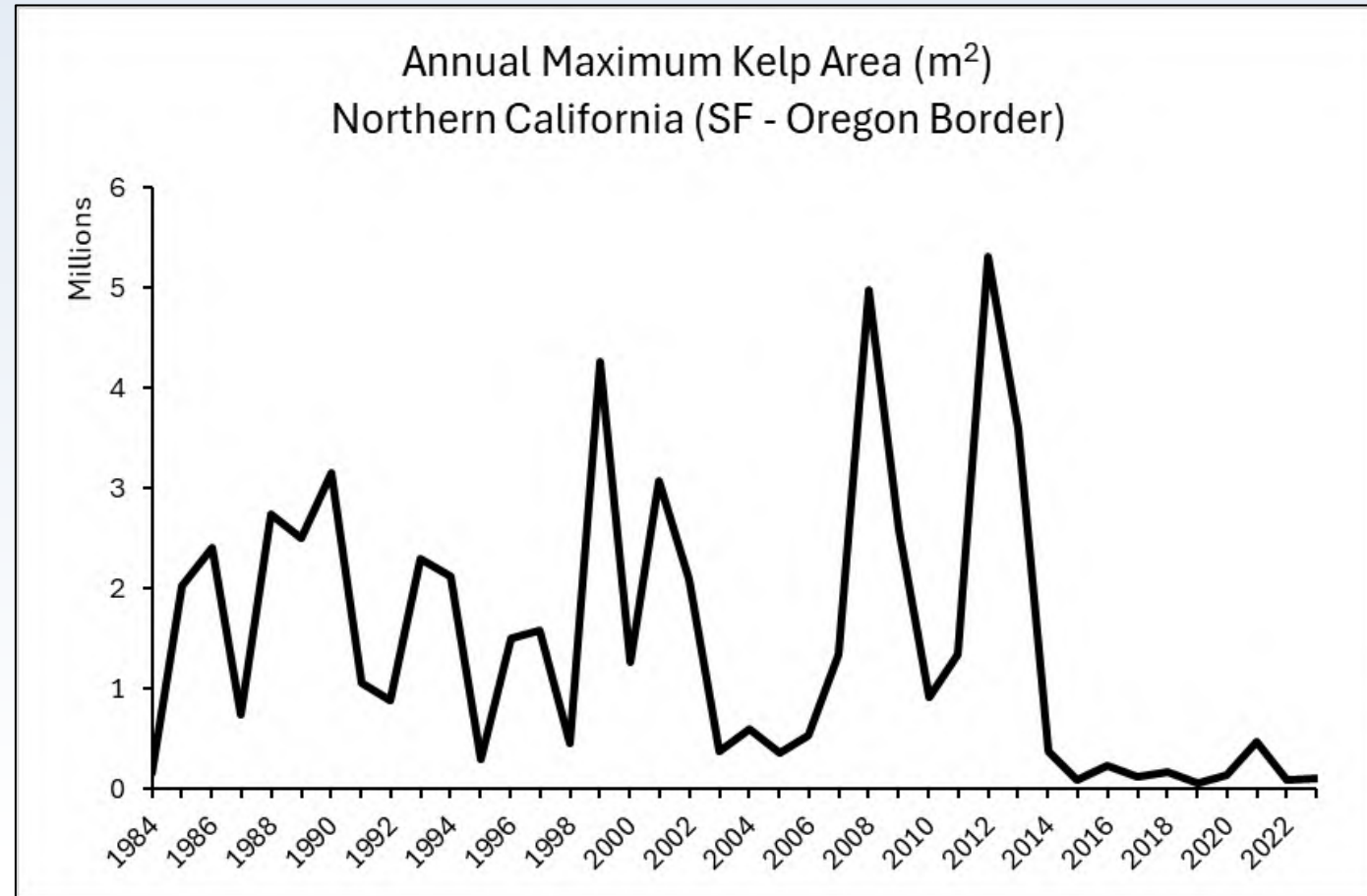
Site Status
● MPA
-△- reference

Data Source: PISCO,
dataone.org



Current Status - Environmental Conditions

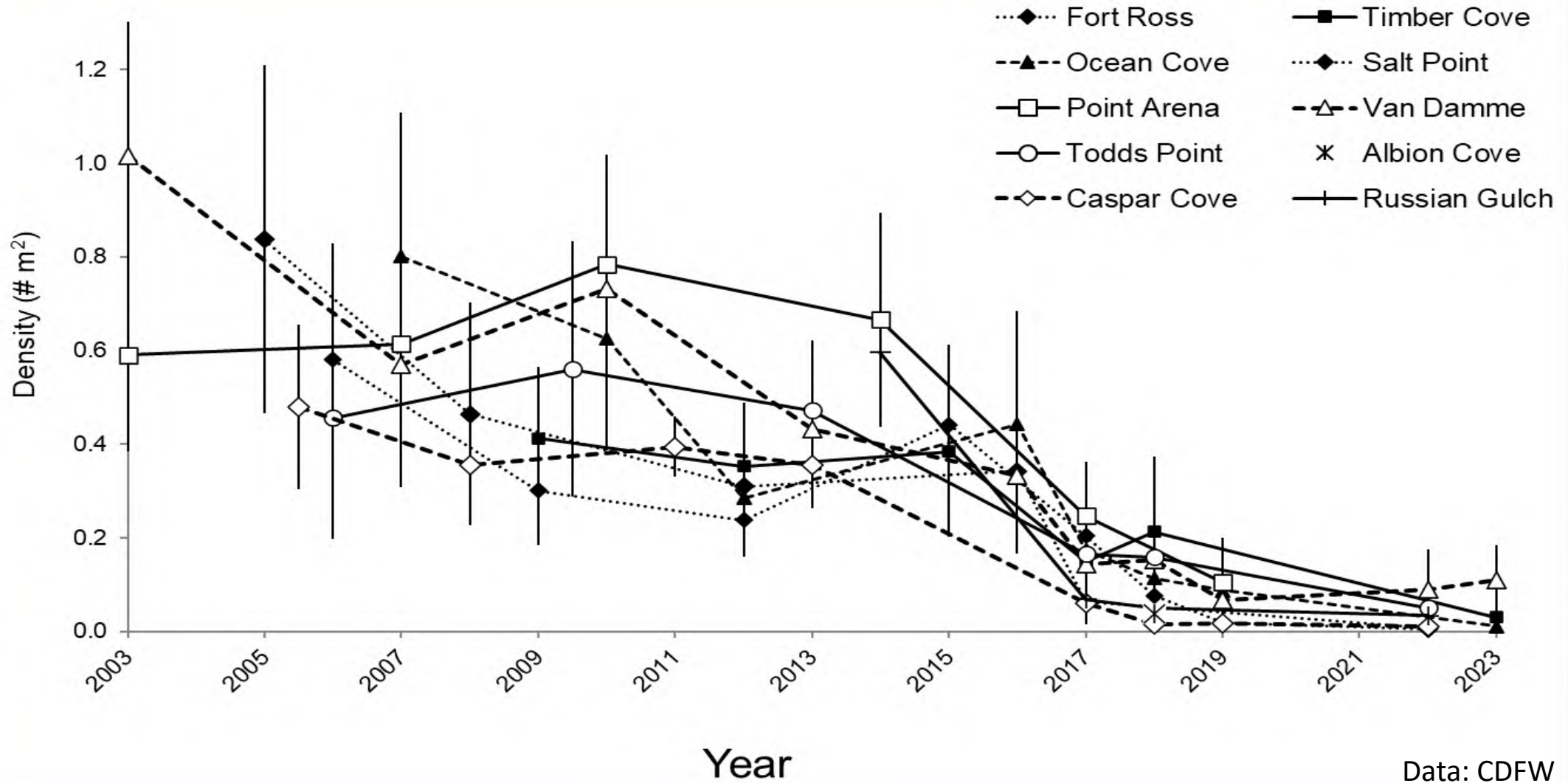
- Greater environmental variability
- Minimal kelp recovery



Data: Kelpwatch.org



Red Abalone Recreational Fishery



Data: CDFW



San Miguel Island

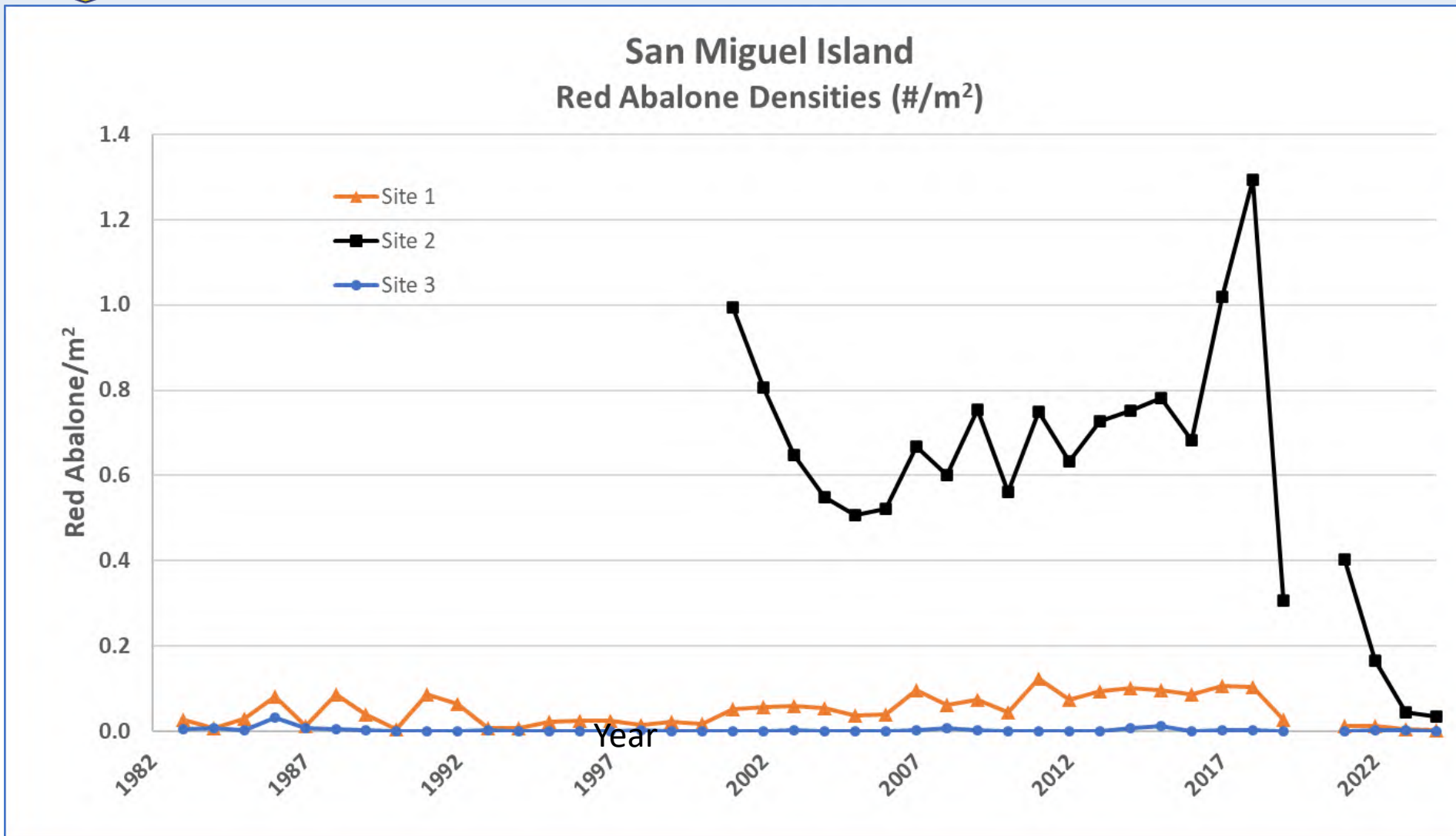
- Refuge for red abalone in Southern California
- Area of interest for test fishery



Photo: ESA



San Miguel Island - Abalone Status

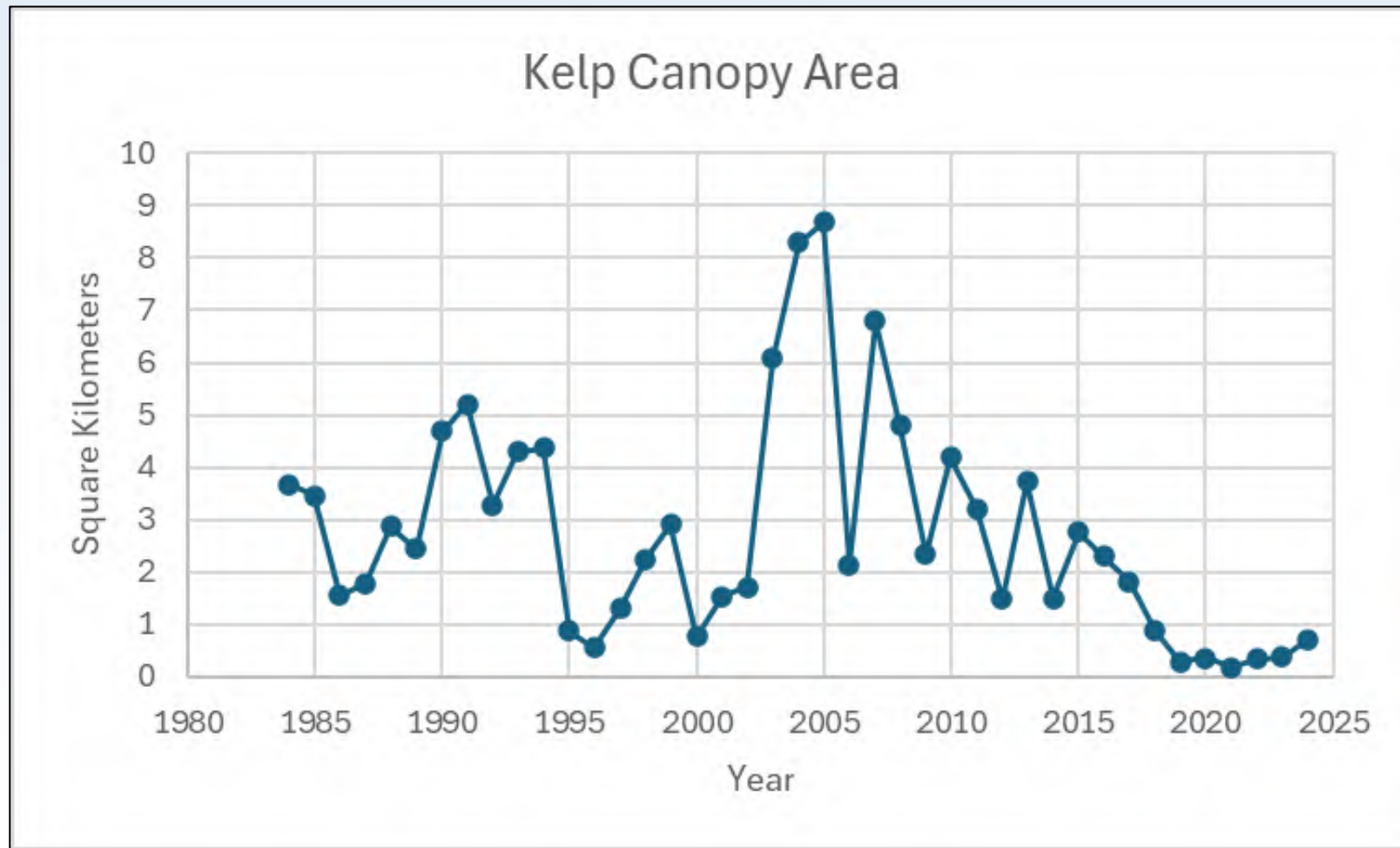


- Abalone density low at all locations

Data: National Park Service Kelp Forest Monitoring Program



San Miguel Island – Kelp Status

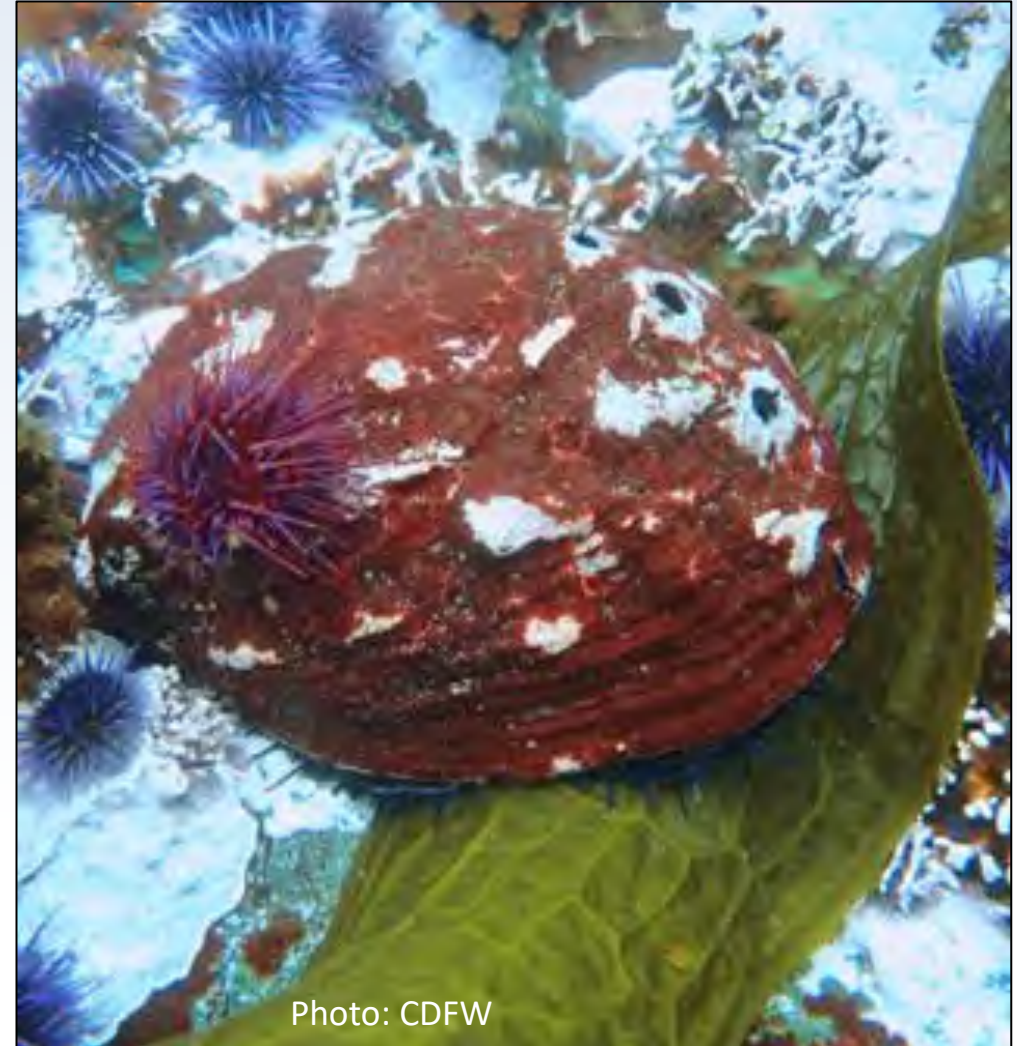


Kelp forest conditions at SMI have been poor over the past 8 years

Data: kelpwatch.org

Summary

- Abalone species statewide remain depleted
- Some signs of recovery
- Environmental variability expected to continue in the future





Department Recommendations

- Focus on species recovery, not harvest opportunities
- Continue to monitor Kelp Recovery Management Plan (KRMP) process
- Build partnerships for abalone monitoring and recovery

Next Steps

- Discuss Recreational Red Abalone Fishery (next presentation)
- July MRC Meeting
 - Update on Red Abalone Recovery Planning Process
 - Future Data Collections



Thank You



Questions: Abalone@wildlife.ca.gov



Recreational Red Abalone Fishing Moratorium

March 13, 2025

Presented to:

Marine Resources Committee
CA Fish and Game Commission

Presented by:

Joanna Grebel
Invertebrate Program Manager
Marine Region



Overview

- Background on Fishery Closures
- Current Status
- Department Recommendation

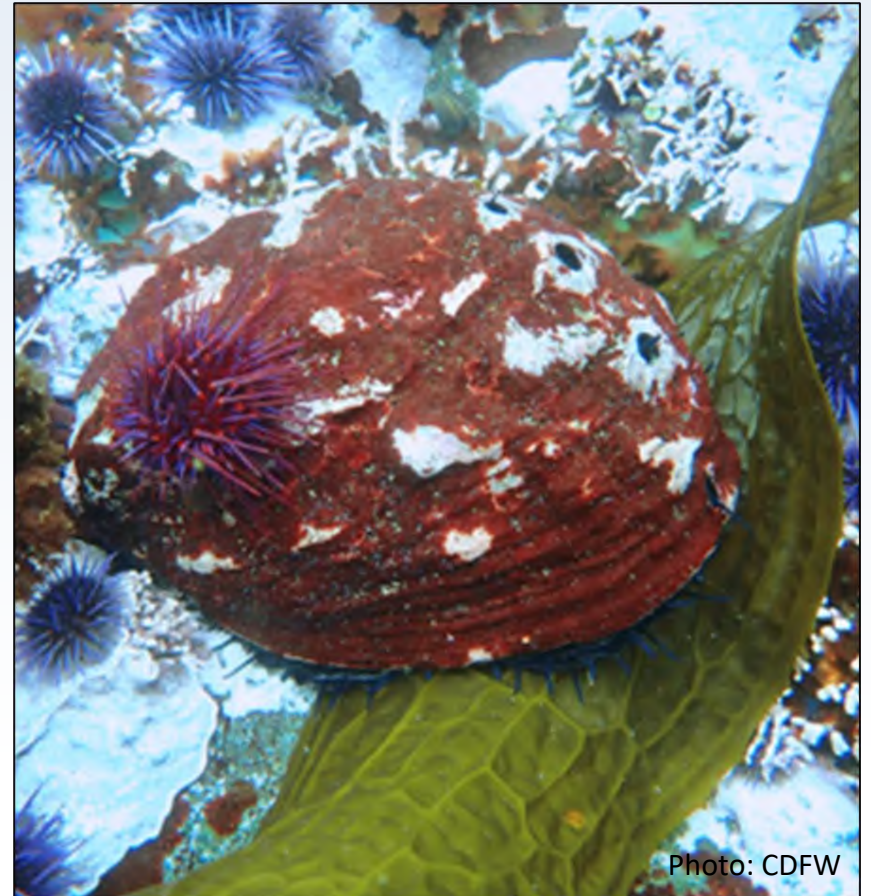


Photo: CDFW



Background – Red Abalone

- Fishery closed in 2018 (one year)
- Second sunset implemented in 2019 (two years)
- Last sunset implemented in 2021 (five years)
- Fishery to automatically reopen on April 1, 2026



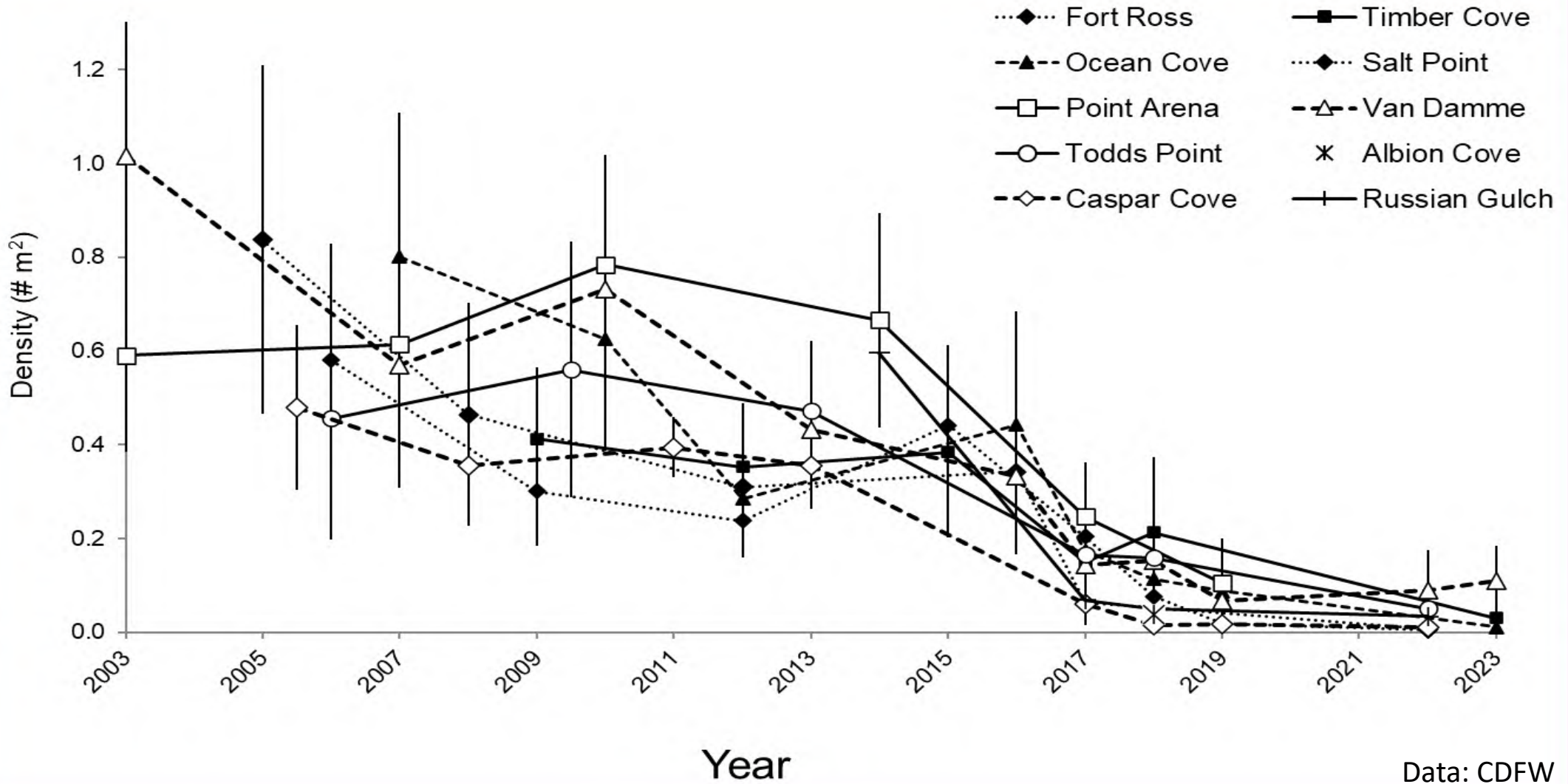
Current State of Knowledge

- Red abalone
- Kelp
- Purple Sea Urchin
- *Pycnopodia sp.*





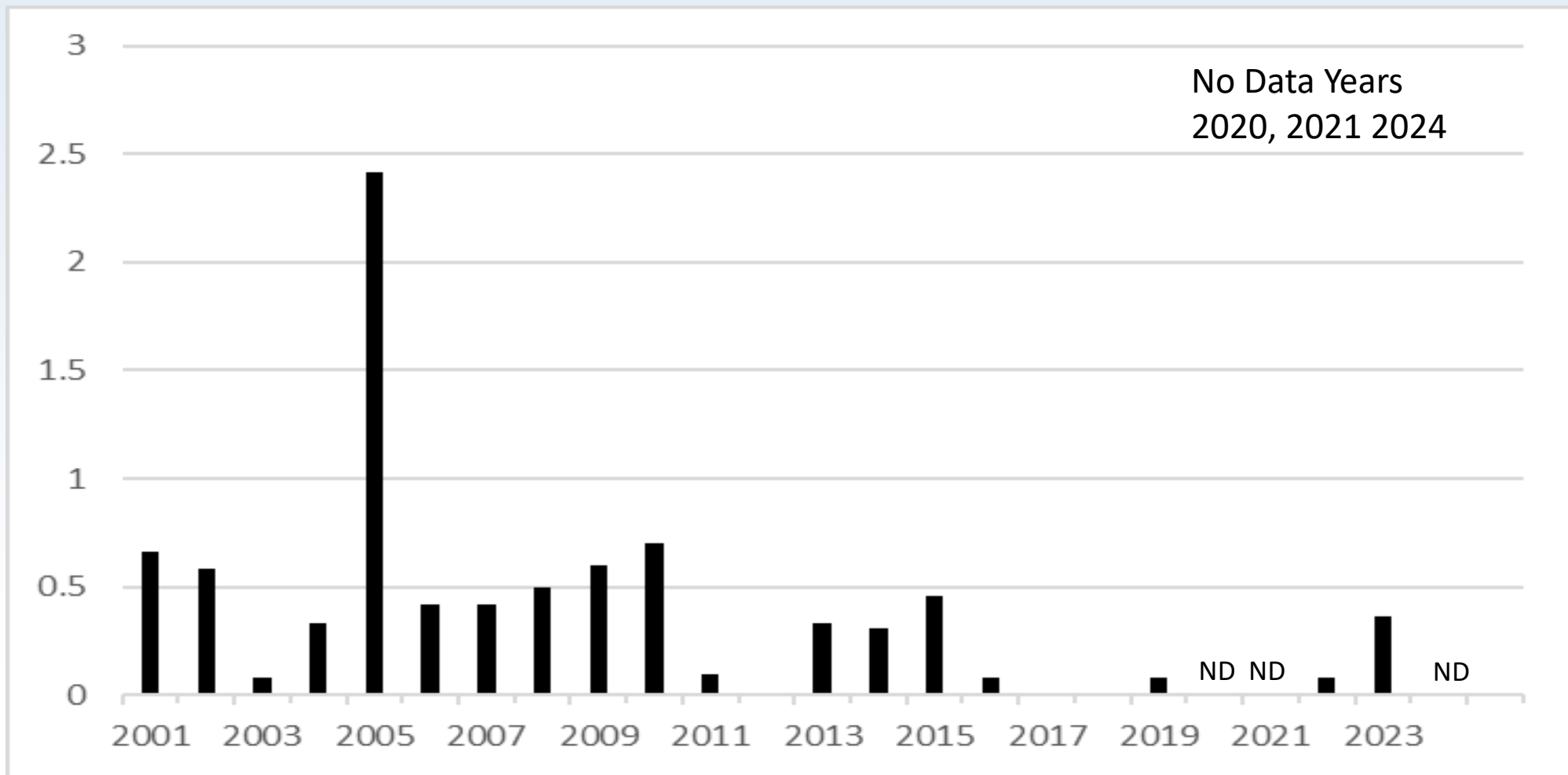
Current Status – Red Abalone Density



Data: CDFW



Current Status – Red Abalone Recruitment

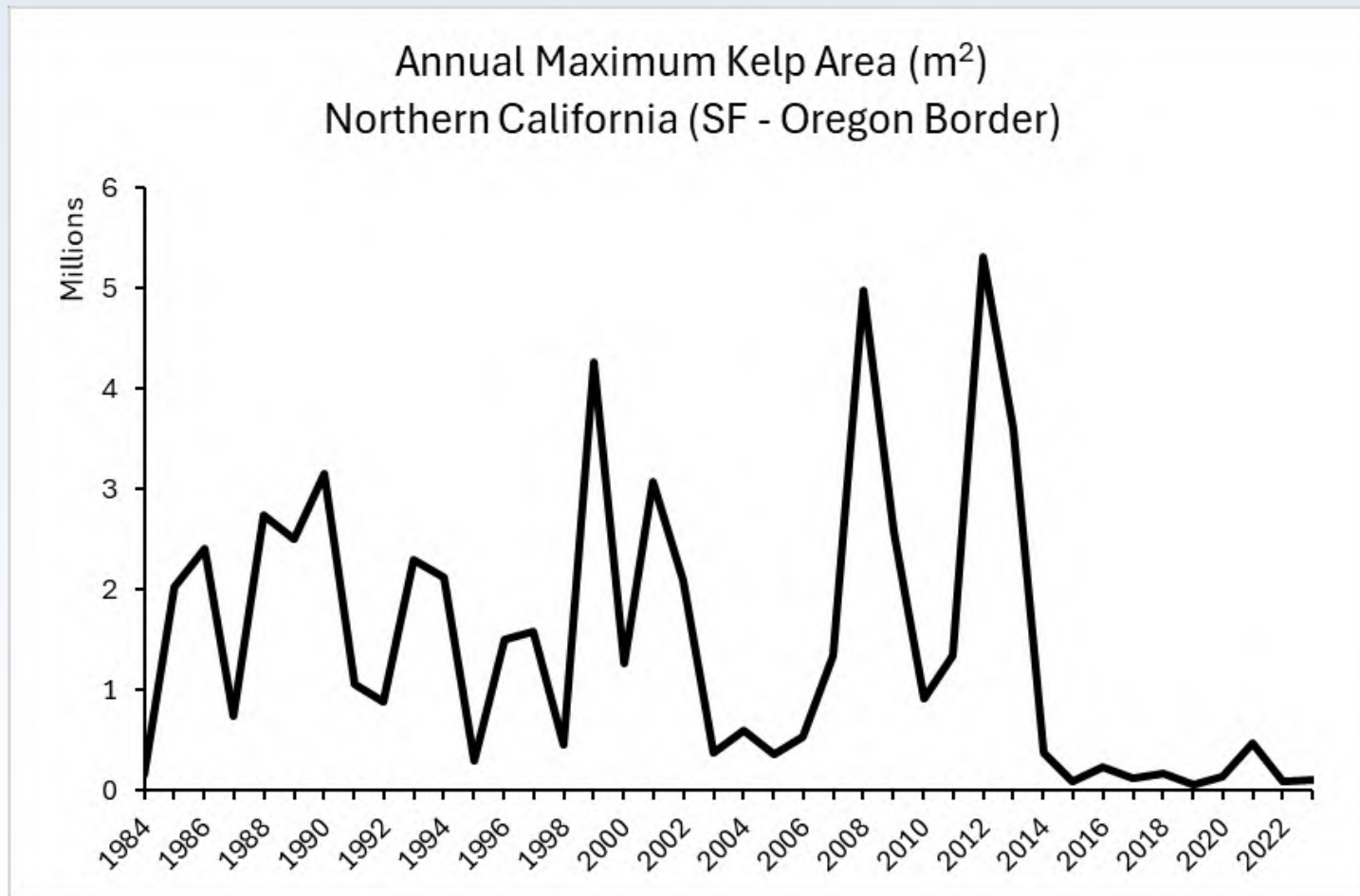


Data: CDFW



Current Status - Kelp

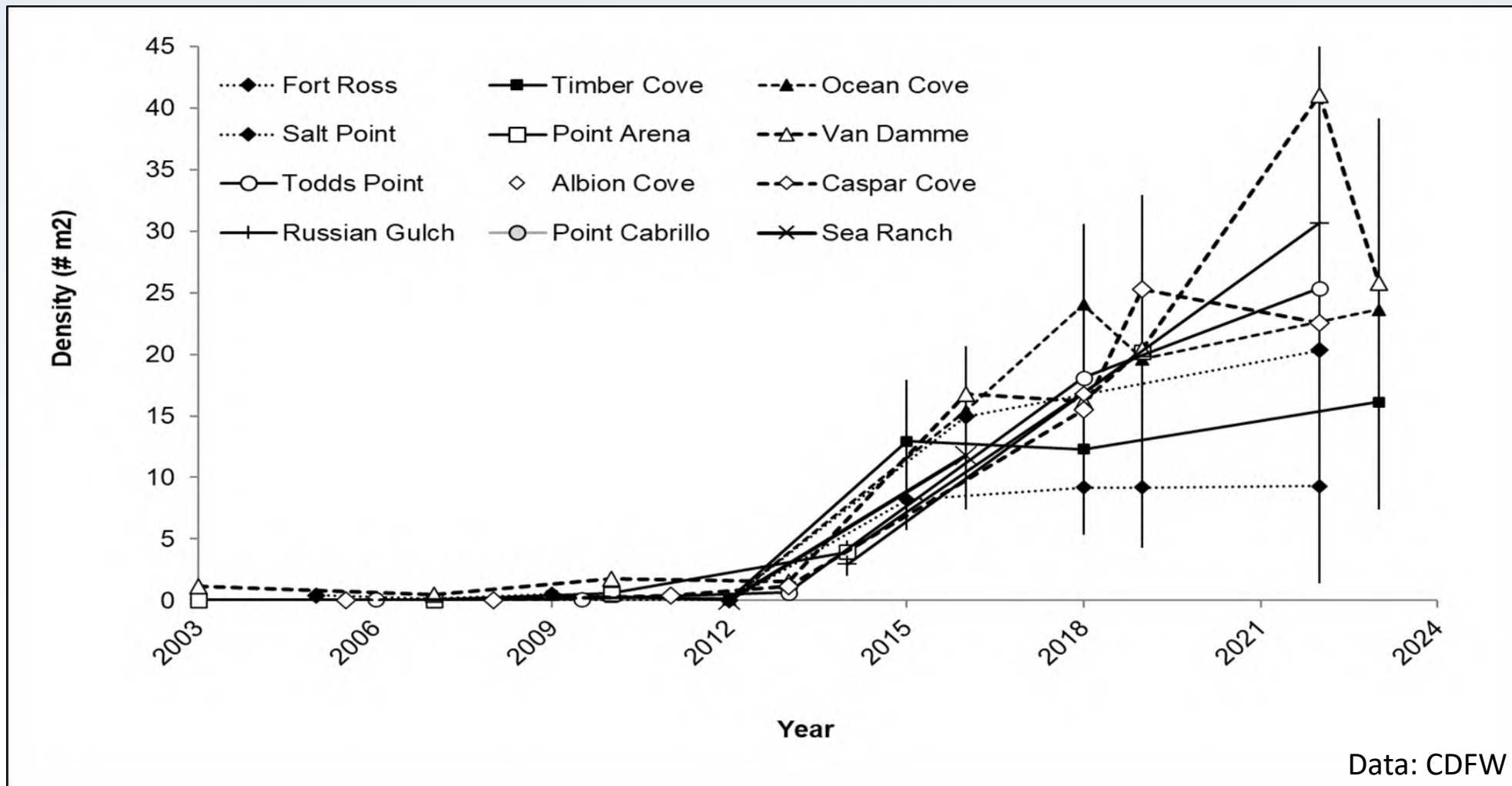
- Over 90% loss of bull kelp canopy in Sonoma and Mendocino
- Minimal recovery since kelp die-off events began in 2014



Data: Kelpwatch.org



Current Status – Purple Sea Urchin



Data: CDFW



Current Status – *Pycnopodia sp.*

- *Pycnopodia sp.* are functionally extinct in California waters due to disease
- Only 5 observed in CA in 2023





Summary

- Abalone: No widescale recovery.
- Kelp: No widescale recovery.
- Purple Sea Urchin: Continued increases.
- *Pycnopodia*: No recovery.



Photo: CDFW

Recommendation

- Continue fishery closure
- Implement indefinite moratorium





Regulatory Timeline

- Tribal Notification Letter: Late March 2025
- Tribal Committee Meeting: April 2025
- Notice: Aug 2025
- Discussion: October 2025
- Adoption: December 2025
- Target effective date for regulation: March 31, 2026

Thank You



Photo: CDFW

Questions: Abalone@wildlife.ca.gov

From: Zoe Collins <[REDACTED]>

Sent: Friday, February 28, 2025 04:27 PM

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

Cc: [REDACTED]
[REDACTED]

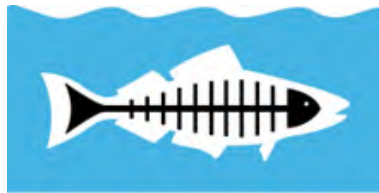
Subject: Red Abalone Recovery NGO Comment Letter

Good afternoon!

Please see the attached document as comments for the March 13th Fish and Game Commission Marine Resources Committee meeting. This letter is one of two submissions and includes comments on agenda item 4 addressing red abalone recovery. Thank you for the opportunity; we look forward to hearing more at the upcoming meeting.

Best,

Zoë Collins



Heal the Bay

ZOË RAELYN COLLINS | MARINE PROTECTED AREA PROGRAM
COORDINATOR

She/Her/Hers ([What does this mean?](#))

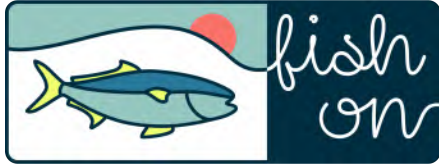
Heal the Bay

1444 9th Street

Santa Monica, CA 90401

T: 310.451.1500 x 151 | **F:** 310.496.1902 | **M:** 310.422.2790

Confidentiality Note: The information contained in this e-mail and any attachments to it may be legally privileged and include confidential information. If you have received this e-mail in error, please notify the sender immediately of that fact by return e-mail and permanently delete the e-mail and any attachments. Thank you.



February 28, 2025

California Fish and Game Commission
Marine Resources Committee
P.O. Box 944209
Sacramento, CA 94244-2090

Submitted electronically to fgc@fgc.ca.gov

RE: Comments on Fish and Game Commission Marine Resource Committee March 2025 Meeting Agenda Item 4: Red Abalone Recovery

Dear Vice President Murrery and Commissioner Sklar:

We want to first thank the Fish and Game Commission (FGC) Marine Resource Committee (MRC) and the California Department of Fish and Wildlife (CDFW) staff for their dedication to the effective management of species in California waters based on best available science. The undersigned organizations – representing the public interest, marine science and environmental justice advocates, and recreational and subsistence fishing interests – in collaboration with FGC and CDFW, are working to ensure that marine species and resources in California are resilient to increasing stressors.

We recommend that science be carefully evaluated to ensure that any harvest will not harm the recovery of the red abalone population and urge you to take a precautionary approach to managing this vulnerable and beloved species. The red abalone fishery was closed to prevent its irreversible loss. Any consideration to reopen the fishery needs to be supported by scientific information to confirm that the abalone population is at a level capable of withstanding additional extractive pressure in addition to increasing environmental stressors, like climate change and ocean acidification, that this species now faces. Strong scientific evidence needs to demonstrate that red abalone has recovered sufficiently before opening up the fishery to prevent future collapse of the species and ensure red abalone can be harvested from a stable population for generations to come.

Thank you for your consideration,

Anupa Asokan
Founder and Executive Director
Fish On

Katie O'Donnell
US Ocean Conservation Manager
WILDCOAST

Rikki Eriksen, PhD
Chief Marine Scientist
California Marine Sanctuary Foundation

Ella Merkle
Marine Scientist
California Marine Sanctuary Foundation

Zoë Collins
Marine Protected Area Program Coordinator
Heal the Bay

Laura Deehan
State Director
Environment California

From: Steve Rebuck [REDACTED]
Sent: Monday, December 23, 2024 09:43 AM
To: Miller-Henson, Melissa [REDACTED]; Ashcraft, Susan [REDACTED]
[REDACTED]; Rogers, Kimberly [REDACTED]; FGC
<FGC@fgc.ca.gov>; Bob Treanor [REDACTED]; Shuman, Craig [REDACTED]
[REDACTED]
Cc: TRENT ROBERT PETERSEN [REDACTED]; JONATHAN5685 [REDACTED]
[REDACTED]; Generic Bonnette [REDACTED]
JEFFBALDWIN39 [REDACTED]; Robert Duncan
[REDACTED]; UNIDIVERSE [REDACTED]
Bobby McKinley [REDACTED]; Ed Pierce [REDACTED]
KITAHARA [REDACTED]; Bob_McMillen [REDACTED]
LEONARD.MARCUS [REDACTED]; Bill Bernard
[REDACTED]; SEAPETT [REDACTED]
Arapawabluepearls Co Info [REDACTED]; JBECKERSUP [REDACTED]
[REDACTED]; Mark Becker [REDACTED]; DANV [REDACTED]
[REDACTED]; CHRISJVOSS [REDACTED]; Verhagen
[REDACTED]
Subject: Red Abalone Conservation Plan

To: California Fish and Game Commission
From: Steven L. Rebuck
Date: December 23, 2024
RE: Red Abalone Conservation Plan

Dear Ms. Miller-Henson:

Concerning your Red Abalone Recovery/Conservation Plan. It was my understanding this plan was to be heard at the next meeting, following the one in November 2024. Apparently this Marine Resources Committee (MRC) agenda item is postponed.

This may be a good thing. In preparation for this meeting, I watched the FGC meetings on abalone conducted in 2005. These meetings are conveniently available on your Fish and Game Commission (FGC) website. The dates are:

- * July 12, 2005, Santa Barbara
- * August 16, 2005, San Diego
- * August 19, 2005, San Luis Obispo
- * September 30, 2005 Susanville
- * November 3, 2005 Santa Barbara
- * December 8, 2005 Concord

Of these, July 12, August 19, September 30, and November 3, are the more important meetings. I suggest your staff and Commissioners view these meetings over the next couple months. There are

important differences between how the FGC currently operates in comparison to how Mr. Treanor and President Kellogg previously conducted meetings.

At the 2005 meetings on abalone, speakers were not rushed. Speakers were given adequate time to express their concerns and opinions. Some speakers were allowed 10 minutes or more to make their comments. The benefits were obvious. These professional divers have considerable years of experience. In comparison, the Department of Fish and Game (Department) representatives could not answer questions asked by the Commissioners. Their incompetence was obvious. Lead Department biologist Peter Haaker was embarrassing in his lack of preparation. There was a very useful exchange of information between the divers and Commissioners who were very patient and respectful.

In comparison, our experience with the current Commissions during the last 5 years of testimony has been extremely difficult and unfair. For example, at the April FGC meeting in San Jose, I thought we had negotiated at minimum, 2 minutes per speaker opportunity. Immediately, President Samantha Murray cut our speaker time to 1 minute. Several former divers had driven hundreds of miles, spent considerable dollars on fuel, hotels etc to speak for 1 minutes. Not very gracious nor kind.

One of our speakers, Ed Pierce was not called to speak. We were later told his speaker card was "lost." None of us believed that. Some of the Commissioners typically gush over Native Californians. Besides being a former abalone diver and processor, Ed Pierce is an elder in the California Salinan Tribe. While he did get to speak, it was an hour late and out of context with our previous agenda item. Many people watching online asked me later what had taken place.

Next was the Mammoth Lakes meeting in June. Ed Pierce and I attended and were the only civilians in the room. President Murray limited our time and at the end told me to. "Take your seat!" In my opinion, President Murray is in constant violation of the FGC Code of Conduct. Yet she continually gets away with this behavior. She treats fishermen like they are just so much clutter to be dismissed as soon as possible. She asked no questions concerning the health of the abalone resource, instead read a list of what we cannot fish: Need for a risk assessment, a new survey, and even used my own words against me. And, no mention of the video evidence of resource health at San Miguel Island we showed the FGC at the April meeting.

Then there was the rude behavior of Dr. Craig Shuman in San Jose. He lectured me from the dias: "Why are you here again? We told you before you could not do this" (go fishing again?)! I reminded him it is our US Constitution Right: "...Petition the Government for redress of grievance."

1st Amendment, Bill of Rights, US Constitution.

Again, continued arrogance, ridicule and disrespect by a government agent.

There is considerable evidence that the commercial and recreational abalone divers were told by the Department, the abalone closure of 1997 would be for 2 years. It has now been 28 years with no return to fishing in sight. No surveys. Cancelled cruises. Estimated \$24.million in annual poaching (Department RAFMP, 2014),

Lastly, at the Mammoth Lakes meeting, I raised the issue of Abalone Recovery and Management Plan (ARMP) Alternative 8. This is where we found reference that Alternative 8 had been the "Preferred Alternative" when the 2005 FGC voted to approve the ARMP. I asked the question twice of the Attorney General (AG) representative, but got no answer. Marine Advisor Susan Ashcroft raised the question and she got no answer. I again asked by letter in July 2024. Still no answer. It is now been over 180 days. Why no answer from the AG? In addition, I went online and looked up Alternative 8 again, but could not find the reference to "Preferred Alternative." It appears this phrase has been deleted. How is this possible? Tampering with evidence? I hope I am wrong about this last one. I had eye surgery recently and maybe it is just my failing eye sight. But, maybe not. Nothing about the Department surprises me anymore.

END



Staff Recommendation

March 3, 2025

Item 9

Action Item:

**Consideration and Approval of Disbursement of Funds to Advance
Climate-Ready Fisheries Management**

Katie Cieri, Sustainable Fisheries and Aquaculture Program Manager

Recommended Action: Authorization to disburse up to \$2,400,000 to the Resources Legacy Fund (RLF) to administer and support two projects that will modernize data collection to advance climate-ready fisheries management:

- 9.a Up to \$2,095,000 to conduct an electronic reporting and electronic monitoring pilot project for four fisheries
- 9.b Up to \$305,000 to implement electronic data collection for the California Recreational Fisheries Survey

Location: Statewide

Strategic Plan Goals and Objectives: Goal 3: Enhance Coastal and Marine Biodiversity, Objective 3.3: Support Sustainable Marine Fisheries and Thriving Fish and Wildlife Populations; Goal 4: Support Ocean Health Through a Sustainable Blue Economy, Objective 4.1: Advance Sustainable Seafood and Thriving Fishing Communities

Equity and Environmental Justice Benefits:

By engaging with members of the fishing community and modernizing data used to manage the state’s fisheries, these projects advance the following goals of [OPC’s Equity Plan](#): Goal 1 (Establish and implement more equitable and sustainable community engagement and funding); Goal 3 (Lead equitable ocean and coastal policymaking in California).

Findings and Resolution:

Staff recommends that the Ocean Protection Council (OPC) adopt the following findings:

“Based on the accompanying staff report and attached exhibit(s), OPC hereby finds that:

1. The proposed projects are consistent with the purposes of Division 26.5 of the Public Resources Code, the California Ocean Protection Act;
2. The proposed projects are consistent with the Budget Act of 2024, which included a \$27 million Greenhouse Gas Reduction Fund appropriation for ocean protection and resilience to climate change; and
3. The proposed projects are not ‘legal projects’ that trigger the California Environmental Quality Act (CEQA) pursuant to Public Resources Code section, section 15378.”

Staff further recommends that OPC adopt the following resolution pursuant to Sections 35500 *et seq.* of the Public Resources Code:

“OPC hereby approves the disbursement of up to \$2,400,000 to the Resources Legacy Fund (RLF) to administer and support two projects that will modernize data collection to advance climate-ready fisheries management.

This authorization is subject to the condition that prior to disbursement of funds, Resources Legacy Fund shall submit for the review and approval of the Executive Director of the OPC detailed work plans, schedules, staff requirements, budgets, and the names of any contractors intended to be used to complete the projects, as well as discrete deliverables that can be produced in intervals to ensure the projects are on target for successful completion. All projects will be developed under a shared understanding of process, management, and delivery.”

Executive Summary:

California’s inherently dynamic ocean and coastal ecosystems are becoming increasingly variable as the effects of anthropogenic climate change progress. This rapidly changing marine environment requires a dynamic management approach to fisheries management supported by rapid and efficient data collection. Modernizing catch reporting and data collection systems is essential to prepare California’s fisheries management for the challenges of climate change.

Staff recommends that the Ocean Protection Council authorize the disbursement of up to \$2,400,000 to the Resources Legacy Fund (RLF) to support two projects that will modernize data collection to advance climate-ready fisheries management: 1) conduct an electronic reporting and electronic monitoring pilot project for four fisheries, and 2) implement electronic data collection for the California Recreational Fisheries Survey (CRFS). These projects were identified in coordination with California Department of Fish and Wildlife (CDFW) staff as key next steps in a phased approach towards modernizing fisheries data collection to inform climate-resilient fisheries management.

Project Summary:

Background:

Due to increased environmental variability and impacts from rapidly changing oceans, there is a critical need for proactive and data-driven decisions on shorter timelines. To adaptively manage fisheries resources in the face of climate change, fisheries and ecosystem data must be collected and analyzed as quickly and efficiently as possible. Modernizing and optimizing catch reporting and data collection systems was highlighted in the [2018 MLMA Master Plan for Fisheries](#) as essential to future-proofing fisheries management in California against the challenges of climate change.

Historically, the California Department of Fish and Wildlife (CDFW) has collected fishing activity records through paper landing receipts (or fish tickets) and paper logbooks. In 2018, CDFW implemented an electronic fish ticket program for landing receipts in partnership with the Pacific States Marine Fisheries Commission. The next step in implementing electronic reporting in California is the development of electronic logbooks. There are thirteen approved logbook forms in California; currently, fishermen fill out logbooks by hand each time they fish and then submit them by mail monthly to CDFW. Over the decades of logbook use, forms have become more complex, which has increased the burden on fishermen as well as the time required for data entry and review. Currently, only the Commercial Passenger Fishing Vessel fleet uses voluntary digital logbook forms to submit daily catch information, but this logbook needs improvements to meet the needs of fishermen and managers.

Transitioning to electronic logbooks streamline reporting for fishermen, better align data collection with management priorities, and reduce the time needed to record, transmit, and review data. Furthermore, electronic monitoring tools such as sensors, location trackers, and onboard cameras provide additional spatial information on fishing activity as well improved tracking of catches and discards. Pairing electronic logbooks with electronic monitoring will improve data that is available to support management decisions; reliable and timely data is essential for more responsive and adaptive fishery management, particularly in the face of rapidly changing environmental conditions.

Target Fisheries:

This project will target four commercial fisheries in California to test electronic monitoring and electronic reporting: Commercial Passenger Fishing Vessel (CPFV), Market Squid, Set Gill Net, and Dungeness Crab. This project will also improve data collection for California's Recreational Fisheries through the California Recreational Fisheries Survey (CRFS).

- **Commercial Passenger Fishing Vessels (CPFV):** CPFVs (i.e. charter fishing or sport fishing boats) take recreational anglers out on fishing trips for a variety of species. Currently, captains are required to submit monthly logbooks. A web-based logbook was implemented in 2015, however, improvements are necessary. CDFW surveys of fishermen in 2023 provided recommended electronic logbook improvements. An improved electronic logbook will increase fisher participation and provide finer-scale catch and effort data for management.
- **Market Squid Fishery:** The market squid fishery is the largest commercial fishery in California. Squid are particularly vulnerable to climate impacts because their reproduction and distribution are influenced by environmental factors. Past [OPC funding](#) supported the Squid Fishery Advisory Committee (SFAC), a group of stakeholders convened to provide recommendations to CDFW on potential changes to market squid fishery management. Implementing electronic logbooks was a key SFAC [recommendation](#).
- **Set Gillnet Fishery:** The fishery targets California Halibut and White Seabass, however, has high potential for bycatch. CDFW's 2023 [bycatch evaluation of the California halibut set gill net fishery](#) recommended implementing an electronic logbook and electronic monitoring to provide critical information on fishery catch and bycatch and enable more effective management
- **Dungeness Crab Fishery:** Dungeness Crab gear can pose entanglement risk to whales and sea turtles. CDFW assesses entanglement risk based on best available science through the [Risk Assessment Mitigation Program \(RAMP\)](#). Pairing an electronic logbook with existing electronic monitoring devices will enable better management and entanglement risk mitigation.
- **Recreational Fisheries:** The [CRFS](#) collects fishery-dependent data on California's recreational fisheries. Electronic data collection will improve the accuracy and efficiency of monthly catch estimates and enable more responsive management.

Project Summary:

9.a. Electronic Reporting and Electronic Monitoring Pilot

In partnership with OPC and CDFW, RLF will conduct workshops and outreach to target fleets to demonstrate different electronic reporting platforms and electronic monitoring systems prior to initiating the pilot. This initial work will ensure that the project integrates the perspectives of the

fishing community. Following this initial outreach, RLF will work closely with OPC and CDFW staff, as well as members of the fishing community, to accomplish the following objectives:

A subset of vessels in the CPFV, Market Squid, Dungeness Crab, and Set Gill Net fisheries will be outfitted with electronic reporting platforms and electronic monitoring systems, which vary in terms of user interface, capabilities, and potential for integration into the existing data management framework, and complete field testing to optimize features for the fishing fleets and CDFW.

- Up to 30 CPFV vessels will be included in testing three separate electronic logbook platforms. These platforms will represent a significant improvement on the current digital logbook and will allow fishers to report vessel position with each fishing event, thereby enabling fine-scale resolution of catch data.
- Up to 30 Market Squid vessels will be included in testing three separate electronic logbook platforms.
- Up to 20 Dungeness Crab vessels will be included in testing two separate electronic logbook platforms alongside vessel positioning and sensors to identify specific fishing activity.
 - An additional 5 vessels using experimental ropeless fishing gear will test an electronic logbook platform coupled with vessel positioning and sensors.
- Up to 10 Set Gillnet Vessels will be included in testing two electronic logbook platforms and electronic monitoring systems including vessel positioning, sensors to identify specific fishing activity, and cameras to record vessel catch and bycatch.

After field testing concludes, data and fisher feedback will be synthesized to develop a report on proof of concept and next steps to scale electronic reporting and electronic monitoring fleetwide and across other California fisheries.

9.b. CRFS Electronic Data Collection

This project will transition CRFS data entry from paper forms to electronic data collection with tablets. This will enable real-time entry of CRFS data, and result in significant data quality improvements. Alongside improvements to the CPFV electronic logbook, this project will decrease the processing time required for CDFW staff to develop monthly catch and effort estimates.

By testing electronic reporting and electronic monitoring options as well as implementing electronic data collection, these two projects will streamline reporting for fishermen, improve data quality, better align data collection with management objectives, and reduce the time needed to record, transmit, and review data. Reliable and timely data is essential for more responsive and adaptive fishery management, particularly in the face of rapidly changing environmental conditions.

Equity and Environmental Justice Benefits:

The proposed projects will test electronic reporting solutions developed with feedback from commercial fishermen and enhance data collection for recreational fishermen. By integrating input from the fishing community, the project will ensure that data collected is timely and accurate, which is crucial for sustainable fisheries management and ocean conservation. The use of electronic reporting technology enhances transparency, improves data accuracy, and enables more effective management of marine resources, fostering collaboration between diverse groups and advancing the shared goal of protecting California’s marine environment.

The projects will provide critical benefits by addressing the needs of underserved communities in both the commercial and recreational fishing sectors. By developing electronic reporting solutions that are accessible and easy to use, the project reduces barriers to participation in fisheries management and enhances these communities' ability to engage in the conservation process. This project will support [OPC’s Equity Plan](#), which emphasizes addressing historical and ongoing inequities, as well as providing opportunities for communities that have been historically excluded to participate in decision-making. The project also aligns with strategies to increase access to ocean-related benefits for marginalized communities and fosters environmental justice by ensuring that all groups, especially those facing environmental or economic hardship, are included in efforts to sustain marine resources. By engaging with members of the fishing community and modernizing data used to manage the state’s fisheries, these projects will address the following goals of [OPC’s Equity Plan](#): Goal 1 (Establish and implement more equitable and sustainable community engagement and funding) ; Goal 3 (Lead equitable ocean and coastal policymaking in California).

About the Grantee:

Resources Legacy Fund (RLF) is a 501(c)(3) nonprofit organization that works at the intersection of conservation, climate change, and communities. RLF partners with donors and diverse stakeholders to support environment-oriented strategic initiatives and fiscally sponsored projects that create durable, transformative outcomes for people and nature. RLF has partnered closely with OPC for years and brings deep experience, expertise, and connections to the goal of promoting sustainable and resilient fisheries and fishing communities. To advance these shared goals, RLF has provided expertise and philanthropic resources related the revision of the Master Plan for Fisheries by conducting climate vulnerability analyses, improving understanding of socioeconomic impacts to fishing communities, enhancing CDFW technical capacity, and supporting fishery-specific stakeholder processes. This work is guided by an MOU between OPC, CDFW, and RLF that identifies opportunities for collaboration and coordinated partnership to

simultaneously advance OPC’s strategic goals and those of the Marine Life Management Act (MLMA).

Project Timeline:

These projects will run for 3 years, from June 2025 to June 2028. Each fishery will undergo 12-18 months of on-water testing. The timing of outfitting and on-water testing will vary depending on fishing season for each fishery but will occur in Fall and Winter of 2025, throughout 2026, and in Fall of 2027. Electronic forms for CRFS will be developed throughout 2025 and 2027, and implemented in the field in 2027. Data will be synthesized on a rolling basis for each fishery throughout 2027 with a final report will be completed Summer of 2028.

Project Financing:

Staff recommends that the Ocean Protection Council (OPC) authorize encumbrance of up to \$2,400,000 to the Resources Legacy Fund to administer and support two projects that will modernize data collection to advance climate-ready fisheries management.

Ocean Protection Council	\$2,400,000
9.a. Electronic Reporting and Electronic Monitoring Pilot Project	\$2,095,000
9.b. CRFS Electronic Data Collection	\$305,000
TOTAL	\$2,400,000

The anticipated source of funds will be from the Budget Act of 2024, Greenhouse Gas Reduction Fund appropriation to OPC (Fiscal Year 2024/2025) for projects that advance ocean protection and resilience to climate change. The proposed project supports the purpose of this appropriation to increase the resilience of marine wildlife and ocean and coastal ecosystems by improving data collection to inform climate-ready fisheries management and support sustainable fisheries.

Consistency with California Ocean Protection Act:

The proposed project is consistent with the Ocean Protection Act, Division 26.5 of the Public Resources Code, because it is consistent with trust-fund allowable projects, defined in Public Resources Code Section 35650(b)(2) as projects which:

- Eliminate or reduce threats to coastal and ocean ecosystems, habitats, and species.
- Improve the management of fisheries and/or foster sustainable fisheries.
- Improve management, conservation, and protection of coastal waters and ocean ecosystems.
- Provide monitoring and scientific data to improve state efforts to protect and conserve ocean resources.
- Protect, conserve, and restore coastal waters and ocean ecosystems.
- Provide funding for adaptive management, planning coordination, monitoring, research, and other necessary activities to minimize the adverse impacts of climate change on California's ocean ecosystem.

Compliance with the California Environmental Quality Act (CEQA):

The proposed projects are categorically exempt from review under the California Environmental Quality Act (“CEQA”) pursuant to 14 Cal. Code of Regulations Section 15306 because the projects involve information collection, consisting of data collection, research, and resource evaluation activities that will not result in a serious or major disturbance to an environmental resource.



Marine Region 2024 By the Numbers Report



2024
Marine Region
By The Numbers

Commercial Fishing

Weight and Ex-Vessel Value¹ of Commercial Landings by Port Area²

Port Area	Pounds	Ex-Vessel Value
Santa Barbara	81,517,823	\$64,983,615
Los Angeles	50,566,187	\$37,451,989
San Francisco	7,722,825	\$26,515,641
Eureka	7,359,938	\$20,018,255
San Diego	4,556,133	\$12,110,114
Bodega Bay	3,276,381	\$10,939,611
Monterey	16,123,299	\$7,930,496
Fort Bragg	4,953,436	\$5,423,659
Morro Bay	1,608,502	\$3,678,279
Totals	117,684,528	\$189,051,663

¹Ex-Vessel Value is the amount paid to the fishermen of the dock.
²Port Area includes multiple ports in the same geographic region. A full list of the ports included in a given Port Area can be found in the Port Reference Table.
Data as of 02/14/2025. Data Source: Department's Marine Region, Marine Fisheries Statistical Unit



Top 2024 Commercial Fishery Numbers

Total Commercial Landing Fees Collected for all Fisheries: **\$1,373,425**

Top Ex-Vessel Value: **\$67,854,320** Market squid

Top Weight: **126,430,905** lbs Market squid



Dungeness crab, *Metacarcinus magister*, and market squid, *Loligo opalescens*
Illustrations by CDFW Environmental Scientist (ES) Cloudia Mokoyev



<https://wildlife.ca.gov/Regions/Marine/By-the-Numbers>



2024
Marine Region
By The Numbers

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Message from the Regional Manager

As I reflect back on another year, I find myself embracing the highs and lows that come from managing California's marine resources in an ever-changing world. While our salmon continued to struggle and the recreational and commercial ocean salmon fisheries remained closed for a second year in a row, I remain optimistic.

In early 2024, Governor Newsom launched [California's Salmon Strategy for a Hotter, Drier Future](#) and for the first time in a generation, we saw salmon [return to historic habitat in the upper Klamath River Basin](#) – just months after completion of the historic dam removal. Although large-scale recovery will take time, the Salmon Strategy offers hope for restoring California's salmon populations and iconic fisheries.

Despite the heavy toll of a closed salmon season for the second year, we had a number of high points throughout 2024. The groundfish boat-based season kicked off in April and remained open through the end of the year throughout the entire state. Anglers in southern California had the opportunity to target rockfish in the previously closed waters of the Cowcod Conservation Areas for the first time in more than 20 years. These waters produced some spectacular catches while still protecting the sensitive and abundant coral and sponge populations within eight smaller [Groundfish Exclusion Areas](#).

We celebrated the 75th anniversary of the California Cooperative Oceanic Fisheries Investigations. Known as [CalCOFI](#), this program has collected marine samples and data off California's coast longer than any other marine ecosystem field research initiative in the world, marking three quarters of a century dedicated to understanding our ocean.

In partnership with the California Fish and Game Commission and Ocean Protection Council, we embarked on a process to receive and evaluate petitions aimed at improving California's network of Marine Protected Areas. To ensure transparency and public engagement, we created an [MPA Story Map](#) which provides detailed information about the petitions and the review process.

Finally, a true highlight for me was a surprise gift of marine-themed artwork from the students of Herron House Preschool Center in Selma, CA. This simple, yet heartfelt gesture, was a poignant reminder of how deeply connected all Californians are to the ocean and how future generations depend on us.

Looking ahead, I see both challenges and opportunities. Regardless of the obstacles, I am confident that CDFW staff, California Tribes, stakeholders, policymakers, and partners will come together, driven by our shared love for the ocean, to ensure the sustainable management of California's ocean resources and a healthy future.

Dr. Craig Shuman





2024 Marine Region

The California Department of Fish and Wildlife's Region 7 is known as the Marine Region. It encompasses approximately **5,767** square statute miles of state waters, including San Francisco Bay and San Pablo Bay to the Carquinez Bridge.

For the 2023-2024 fiscal year, the Marine Region budget was **\$30,380,049**.

152 permanent staff as of December 31, 2024.

Temporary Positions:

7 Permanent Intermittent Fish and Wildlife Technicians

75 Fish & Wildlife Scientific Aids





Commercial Fishing

Weight and Ex-Vessel Value¹ of Commercial Landings by Port Area²

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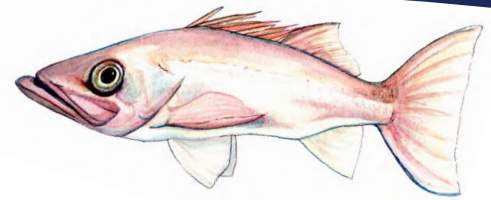
Top Weight: **126,430,905 lbs** Market squid



Dungeness crab, *Metacarcinus magister*, and market squid, *Doryteuthis (Loligo) opalescens*
illustrations by CDFW Environmental Scientist (ES) Claudia Makeyev



Commercial Fishing



Vessel Registration and Fishing License Revenue

Type	Numbers Sold	Revenue
Resident Vessel	2,587	\$1,228,825
Non-Resident Vessel	270	\$376,785
Total Vessels	2,857	\$1,605,610
Resident License	4,829	\$898,387
Non-Resident License	537	\$289,711
Total Licenses	5,366	\$1,188,098

Data as of 02/14/2025. Commercial Passenger Fishing Vessel (CPFV permit) is a subset of the Resident and Non-Resident Vessel total. There were 575 Registered Commercial Passenger Fishing Vessels with a total value of \$273,125. Data Source: Department's License and Revenue Branch. *Note that landings and value reported over the calendar year (January 1 – December 31) This may differ from seasonal landings for specific fisheries reported elsewhere.

Top Fisheries Landed by Weight

Fishery	Pounds	Ex-Vessel Value
Market Squid	126,430,905	\$67,854,320
Dungeness Crab	14,173,812	\$49,744,975
Northern Anchovy	9,718,850	\$627,641
Pacific Sardine	3,258,365	\$667,149
Pacific Mackerel	3,056,272	\$800,895
Sablefish	2,879,288	\$4,734,080
Chilipepper Rockfish	2,216,886	\$1,420,034
Red Sea Urchin	2,130,789	\$7,476,765
Bocaccio Rockfish	1,538,767	\$935,183
Petrale Sole	1,492,852	\$1,788,001
Totals	166,896,789	\$136,049,046

Data as of 02/14/2025. *Note that landings and value are reported for the calendar year (January 1 – December 31). This may differ from seasonal landings for specific fisheries reported elsewhere. Data source: Department's Marine Region, Marine Fisheries Statistical Unit.

Bocaccio, *Sebastes paucispinus*, illustration by CDFW ES C. Makeyev



Commercial Fishing



Top Fisheries by Ex-Vessel Value

Fishery	Pounds	Ex-Vessel Value
Market Squid	126,430,905	\$67,854,320
Dungeness Crab	14,173,811	\$49,744,974
California Spiny Lobster	1,080,004	\$20,893,435
Red Sea Urchin	2,130,789	\$7,476,765
California Halibut	1,014,939	\$5,756,950
Sablefish	2,879,288	\$4,734,080
Spot Prawn	176,968	\$3,942,641
Yellow Rock Crab	765,516	\$1,801,066
Petrale Sole	1,492,852	\$1,788,001
Bluefin Tuna	288,453	\$1,712,489
Totals	150,433,530	\$165,704,725

Data as of 02/14/2025. *Note that landings and value reported over the calendar year (January 1 – December 31) This may differ from seasonal landings for specific fisheries reported elsewhere. Data source: Department's Marine Region, Marine Fisheries Statistical Unit



Top Groundfish Landings

Species	Pounds	Ex-Vessel Value
Nearshore ¹	393,809	\$2,472,275
Shelf and slope rockfish	4,804,414	\$4,210,159
Dover sole, thornyheads, sablefish (black cod)	4,193,491	\$6,919,095
Remaining flatfish ²	1,712,487	\$1,891,300
Other ³	421,814	\$442,516
Totals	11,526,014	\$15,935,345

¹ Includes nearshore rockfish, California scorpionfish, cabezon, greenlings and California sheephead.

² Includes arrowtooth flounder (turbot), butter sole, curfin sole, English sole, Pacific sanddab, petrale sole, rex sole, sand sole and starry flounder.

³ Includes all remaining species in the federal groundfish Fishery Management Plan.

Data Source: Department's Marine Landings Database System and includes landings reported through 02/14/2025. *Note that landings and value reported over the calendar year (January 1 – December 31) This may differ from seasonal landings for specific fisheries reported elsewhere

California spot prawn, *Pandalus platyceros*, and sablefish, *Anoplopoma fimbria* illustration by CDFW ES C. Makeyev



California Recreational Fisheries Survey Sampling

Data Collected from: 76,952 angler trips

Estimated Recreational Fishing Trips in Marine Waters: 2.1 million

Estimated Total Fish Caught: 4.2 million

Measurements Collected from: 78,450 fish

Data Source: Department's Marine Region, California Recreational Fisheries Survey. Data as of 02/11/2025.

Top Types of Fish Targeted by Recreational Anglers Based on Pounds of Fish Caught¹

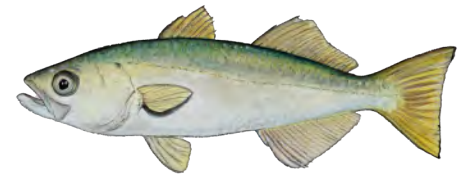
Rank	Type of Fish	Estimated Pounds of Fish Caught ¹
1	Tunas (bluefin, yellowfin, & albacore)	5,138,000
2	Rockfish, greenlings, and cabezon	2,144,000
3	Flatfish (California halibut, Pacific sanddab, Pacific halibut, soles, & starry flounder)	747,000
4	Lingcod	459,000
5	California scorpionfish	332,000
6	Sea Bass (barred sandbass, kelp bass, & spotted sand bass)	312,000
7	Striped bass	227,000
8	Yellowtail	164,000
9	Ocean whitefish	136,000
10	Croakers (White seabass, spotfin, white, & yellowfin croakers)	82,000

¹Fish Caught = fish kept and fish released dead, estimates are preliminary and may differ from what is used for fisheries management. Data source: CRFS estimates and data were extracted from RecFIN database at www.recfin.org and supplemented by CDFW Fisheries Analytics Project and Ocean Salmon Project. Highly Migratory catch from Commercial Passenger Fishing Vessels were summed from the Marine Log System. Data as of 02/11/2025.





Recreational Fishing



Total Recreational Licenses Sold and Fees Collected

License Type	Numbers Sold	Value
All Recreational Fishing Licenses ¹	1,550,979	\$71,326,100
Ocean Enhancement Validation ²	251,703	\$1,636,070
Spiny Lobster Report Card	33,593	\$377,921
Recreational Crab Trap Validation Stamps	36,663	\$100,823

¹Note that recreational fishing licenses are valid for ocean and inland fishing in California. ²Ocean Enhancement Validation stamps are required for ocean fishing south of Point Conception, Santa Barbara County. Data Source: Department's License and Revenue Branch, as of 2/11/2025. <https://wildlife.ca.gov/licensing/Statistics>

Top Types of Fish Targeted by Recreational Anglers Based on Fishing Trips

Rank	Trip-Type and Top Species Targeted ¹	Estimated Number of Angler Trips
1	Bottomfish: Rockfish, lingcod, California scorpionfish and ocean whitefish	603,000
2	Highly Migratory: Bluefin tuna, yellowfin tuna, albacore and dolphinfish (dorado)	417,000
3	Inshore: California halibut, barred surfperch, spotfin croaker, and redbtail surfperch	342,000
4	Coastal Migratory: Yellowtail, chub (Pacific) mackerel, Pacific barracuda and Pacific bonito	91,000
5	Other Anadromous: Striped bass, white sturgeon	69,000

¹For each trip target: the top species are listed based on the estimated total catch in pounds. Data source: CRFS estimates and data were extracted from RecFIN database at www.recfin.org and supplemented by CDFW Fisheries Analytics Project and Ocean Salmon Project. Highly Migratory effort and catch from Commercial Passenger Fishing Vessels were summed from the Marine Log System. Data as of 02/11/2025.



Top: Queenfish, *Seriphus politus*. Bottom: Pacific hake, *Merluccius productus*, illustrations by CDFW ES C. Makeyev



Marine Region Highlights

Permitting

- A new Marine Permitting Project was established to improve efficiency and consistency of developing and implementing Experimental Fishing and Scientific Collecting Permits.

State Experimental Fishing Permits (EFPs)

- Total active EFPs: **5**
- Total EFP Amendments: **7**

Marine Scientific Collecting Permits (SCPs)

- Total SCPs Issued: **181**; Of those issued, for work within MPAs: **58**

Other Permits Issued

- Aquaculture Registrations: **41**
- Letters of Authorization (LOA): **10**
- Aquaria Permits: **137**
- Restricted species permits: **11**
- Incidental Take Permits issued: **2**
- Sea Otter Game Refuge Flyover Request LOAs issued: **10**

Artificial Reefs

- Secured **\$550,000** in funding from Ocean Protection Council to begin development of the California Artificial Reef Program (CARP) Plan, a programmatic guidance document that will direct the implementation of the CARP providing science-based direction on materials, design, siting function and performance standards. <https://wildlife.ca.gov/Conservation/Marine/Artificial-Reefs>

California Endangered Species Act (CESA) Memoranda of Understanding (MOU)

- ESA 2081(a) MOUs to permit take of CESA-listed marine species for scientific, educational or management purposes: **40** issued
- CESA 2081(a) MOU Amendments: **7** issued

Regulatory Activity

- State regulatory packages completed: **11**
- Reports submitted in support of federal regulatory activities: **56**

Dive Program

Total Dives: 816 **Total Dive Hours: 511**

Marine Region Vessels

The State Managed Finfish and Nearshore Ecosystem Program recently acquired a new research vessel (R/V), the R/V Nereocystis (“Nereo” for short). The R/V Nereo is a 14-foot Achilles inflatable vessel, based at the Marine Region’s Santa Rosa Field Office. The vessel will support field needs, primarily with efforts in Northern California to conduct research diving operations on collaborative kelp restoration projects and monitor commercial and recreational kelp harvest. Additionally, R/V Nereo will be deployed to inspect state water bottom aquaculture leases and other high priority bay and estuary resource needs, such as eelgrass and invasive species surveys.

The Marine Enforcement District in central California took delivery of Patrol Boat (P/B) Barracuda, a 74 x 27 ft aluminum catamaran patrol vessel. The vessel is equipped to handle a wide range of near coastal and offshore missions and will support partner agencies. An onboard air compressor and 500+ mile range will help support resource management programs. Missions will include multi-day patrols, commercial gear inspection and recovery, fishery enforcement, and marine protected area patrols. The new vessel replaces its 21-year old predecessor, P/B Steelhead. P/B Barracuda is home ported in Half Moon Bay.

Total days at sea for all Marine Region vessels: 189

• Goby	12 ft	• Surf Scoter	19 ft
• Sanddab	12 ft	• Megathura	21 ft
• Chilipepper	14 ft	• Smoothhound	25 ft
• Remora	18 ft	• Irish Lord	26 ft
• Ronquil	19 ft	• Mystinus	29 ft
• Roncador	19 ft	• Garibaldi	45 ft
• Pinto	19 ft		

P/B Barracuda on patrol. Photo courtesy of All American Marine.



Data Collection

- Staff read **2,449** coded wire tags and assigned ages to salmon collected from **6** surveys of inland spawning escapement across the Central Valley.
- Groundfish and Pacific halibut otoliths collected for use in future stock assessments: **1,281**
- Sardine, anchovy, Pacific mackerel, and jack mackerel samples collected and processed: **3,779**
- Sardin otolith pairs examined for age determination: **175**
- Market squid sampled collected and processed for biological data/to populate the egg escapement assessment: **4,735** across **158** landings sampled.
- Juvenile white abalone outplanted: **2,637**
- Pismo clam surveys counted **1,437** clammers and **986** measured.
- Barred sand bass dive survey transects: **202**
- Barred sand bass counted: **753**
- White seabass measured and scanned for coded-wire tags: **2,750**
- California halibut trawl surveys for spring and fall covered **9** sites, **79** tows, and **842** halibut measured.
- California halibut in Central California, **44** samples representing **1,082** fish
- California halibut in Southern California, **28** samples representing **223** fish

Marine Region Information Sharing

General Outreach

- Marine Region Related CDFW Press Releases: **22**
- Social Media Posts: **52**
- Responses to Public Inquiries Sent via email: **1,600+**
- Public Events Attended: **40**
- New Species-at-a-Glance Summaries: **6**

Marine Management News Blog

- Visits (Shares are not included): **80,000+**
- Blog post views: **114,000+**

Marine Protected Area Project

- Published **1** interactive [MPA Petitions StoryMap webpage](#)
- MPA Collaborative Meeting Presentations: **23**
- Distributed MPA outreach resources: **2,900+**



Data Sharing

- Confidential Data Sharing Agreements: **13**
- Non-Confidential Data Sharing Requests: **12**

Publications

- Perkins, N. R., Lauermann, A., Prall, M., Hosack, G. R., & Foster, S. D. (2024). [Diving deep into the network: Quantifying protection effects across California's marine protected area network using a remotely operated vehicle.](#) Conservation Science and Practice, 6(9), e13190.
- Haggerty, M. B., and C. Valle. 2024. [Incidental take of Giant Sea Bass in the gill net fishery.](#) California Fish and Wildlife Journal
- The [Pacific Herring Enhanced Species Report](#) (02/01/24).
- California Marine Species Information available at: <https://marinespecies.wildlife.ca.gov/>

The California Department of Fish and Wildlife receives federal financial assistance from the U.S. Fish and Wildlife Service. Under Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972, the U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, age, sex, or disability. If you believe that you have been discriminated against in any program, activity, or facility, or if you need more information, please write to: Office of Diversity, Inclusion and Civil Rights U.S. Department of the Interior 1849 C Street, NW Washington, D.C. 20240





Marine Protected Area Petition Evaluation Status and Next Steps

13 March 2025

Presented to:

Marine Resources Committee
California Fish and Game Commission

Presented by:

Claire Waggoner
Marine Region Habitat
Conservation Program Manager



Recap: Decadal Management Review and Petition Timeline

2023

- Release of DMR
- Public meetings to discuss DMR results and recommendations



2023-2024

- MPA Petitions submitted to CFGC and referred to CDFW for evaluation



2024

- Petition evaluation framework developed
- Bin 1 petition evaluation completed
- StoryMap released



2025

- Bin 2 petition amendments
- Bin 2 evaluation framework
- CDFW develop recommendations

Common acronyms:

CFGC=California Fish and Game Commission
CDFW=California Department of Fish and Wildlife
DMR=Decadal Management Review
MRC=Marine Resources Committee



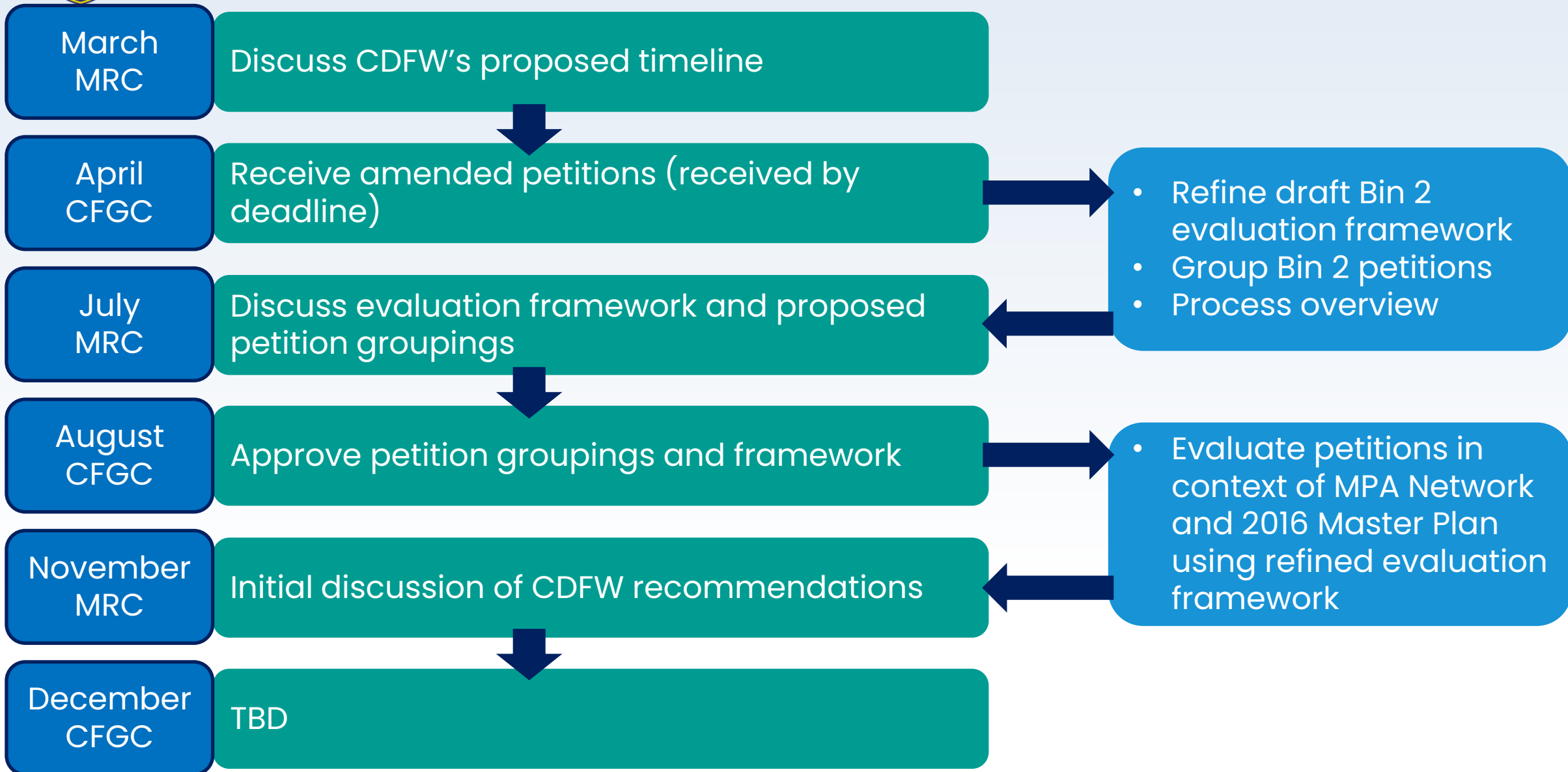


Petition Evaluation Framework: Status





Proposed Bin 2 Petition Milestones and Timeline





MPA Petition Updates: StoryMap



Marine Protected Areas (MPA) Petition Process

California Department of Fish and Wildlife

Click through the collection to:

→ See an **overview** of the petition process, petition evaluation framework, and anticipated timeline

→ Dive into an **interactive map** to visualize proposed changes

→ Explore **petitions sorted** by numerical order, change category, or county, and click the links to learn more about each petition. Any petition proposing a change that can be visualized on a map (e.g., boundary or designation change) will have an image with a slider to swipe between the existing network and the proposed change. Any petition proposing a non-spatial change (e.g., take allowance or regulatory language change) will have a static image showing the location of the affected MPA(s).



Current status:

- o CDFW is in Phase 2 of its 3-phased petition evaluation framework and splitting each petition into individual action items
- o At the December Commission meeting, CDFW provided its annual report on MPA Management Program accomplishments for 2024; next steps for Bin 2 petition evaluation were discussed, including setting a timeline for accepting amendments to Bin 2 petitions; and, as recommended by the MRC, the Commission adopted a slightly modified version of CDFW's draft recommendations for Bin 1 petitions

Up next:

- o For Bin 2 petitioners who submitted a notice to amend their petition, the full amendment package is due March 14, 2025



Stay up to date!





Next Steps: Implement DMR Recommendations

Near-Term (ongoing – 2 years)

- Rec 1: Improve state agencies tribal engagement
- Rec 4: Apply Review knowledge to Network/Management changes
- Rec 7: Expand outreach and education materials
- Rec 9: Continue OPC coordination
- Rec 10: Improve coordination across Management Program pillars
- Rec 11: Update Action Plan
- Rec 16: More targeted outreach to specific audiences
- Rec 17: Improve SCP process
- Rec 18: Use policy to review MPA restoration/mitigation efforts
- Rec 20: Increase enforcement capacity
- Rec 21: Enhance citation record keeping and management
- Rec 25: Implement MPA climate change research
- Rec 27: Improve understanding of MPA effects on fisheries

Mid-Term (2 – 5 years)

- Rec 2: Create pathway to tribal MPA management
- Rec 3: Build tribal capacity to participate in MPA management
- Rec 6: Include and fund more diverse researchers and stakeholders
- Rec 8: Evaluate MPA accessibility
- Rec 12: Improve understanding of human dimensions
- Rec 13: Explore innovative technologies
- Rec 14: Develop MPA community science strategy
- Rec 15: Evaluate Outreach needs and resource effectiveness
- Rec 22: Increase knowledge on MPA judicial outcomes
- Rec 23: Examine MPA Network design attribute more effectively
- Rec 26: Consider climate change in human dimensions monitoring
- Rec 28: Integrate influencing factors into MPA performance evaluations

Long-Term (5- 10 years)

- Rec 5: Establish targets to meet MLPA goals
- Rec 19: Create MPA Enforcement Plan
- Rec 24: Better incorporate marine cultural heritage into MPA Network





Thank You

Questions?

fgc@fgc.ca.gov

mpamanagementreview@wildlife.ca.gov



From: Blake Hermann [REDACTED]
Sent: Wednesday, February 26, 2025 8:18 AM
To: FGC <FGC@fgc.ca.gov>; Ashcraft, Susan [REDACTED]
Shuman, Craig [REDACTED]
Subject: Comment on Bin 2 MPA Petition evaluation process

Hello all,

See attached comment letter requesting and supporting previous comments that petition be evaluated under the MPA Master Plan(s), most notably the guiding regional objectives under the MLPA goals from the Master Plans. Letter additionally breaks down the Master Plan's objectives in the scope of Petition2023-15MPA specifically, highlighting why petition should be considered. This is all referencing the most recent revised version of the petition submitted in January.

Thank you,

Blake Hermann

Petitioner - Petition2023-15MPA

Guiding the Petition process through the MPA Master Plan's Regional Objectives under the MLPA Goals, and Petition 2023-15 MPA's support under said Goals and Objectives

To the FGC and MRC,

The adaptive management process of the MPA network through the petition process has been an all encompassing process stretching nearly two years and has consisted of many meetings with stakeholders from a multitude of backgrounds across the State.

Currently, several stakeholders have differing views on and are determining under what venues to discuss bin 2 petitions. Personally, I do not mind MRC or full commission discussions, but do see benefits to possibly holding discussions at both. This way we could benefit from the more casual open floor of the MRC and still keep all commissioners involved and informed on these petitions to gain the best final actions on these petitions from the full commission.

That being said, one commonality throughout this process from all groups has been the calling for the analysis process to be explicitly guided by the existing MPA Master Plan's (MMP) adaptive management process. This calling has come from all sides, from recreational and commercial fishing organizations such as AllWaters, CFSB, CCA, and the American Sportfishing Anglers (ASA), to environmental NGOs like Azul, Environment California, Environmental Defence Center, the NRDC, and WILD COAST. The latter eNGOs were among 17 groups who jointly signed and sent a letter to the FGC explicitly stating to guide the process through the MMP and its objectives in January.

The MMPs are a framework that guides the adaptive management process of the MPAs as that was part of their original intention. The process guided by the MMP lays out a clear analysis path through lists of "objectives" that fall under the six broader goals of the MLPA. These objectives under the six MLPA goals are what the MMP uses to determine if an MLPA goal is met, as the objectives are, "more specific and measurable than the broader MLPA goals," according to the MMP. In order to best determine if an MLPA goal is met, we look at these objectives stated under the regional MMP and determine if the objective is satisfied using the best available science/data. This process is laid out in Chapter 4.5 of the 2016 MMP, and the measurable objectives under each MLPA goal can be found in the regional appendices (C-F) in the suitably named "Regional Goals and Objectives" sections of the MMP.

I would not only like to echo all comments from both sides of the aisle to guide the process through the MMP(s) and their objectives, but to also bring up that Petition2023-15MPA is one of, if not, the only petition with explicitly stated support in the MMP objectives (see Goal 2 Objective 4 (2.4) below). This stated support of Petition2023-15MPA is laid out by not only the more-modern 2016 MMP, but even the original MMP from 2008, showing a historic, scientifically based rationale for Petition2023-15MPA, that came after the designation of the Northern Channel Islands Network. This shows our obligation to update this pre-MMP island network to modern standards we see in our coastal network that better follows these underlining MMP objectives.

The remaining sections of this document will go through all of the six goals of the MLPA (bold), the guiding MMP regional objectives under each MLPA goal (numbers), and provide a breakdown response of the specific objective through the scope of Petition2023-15MPA (letters). For context, Petition2023-15MPA is requesting 3 SMRs at the Northern Channel Islands be modified to SMCAs to allow for the limited take of Highly Migratory Species (HMS) or pelagic finfish, listing a variety of different allowable gear options, 6 in total not including additional possible nearshore/offshore MPA configurations. The core rationale of the petition is, we know the benefits of MPAs on HMS/pelagic species are very low compared to the high burden certain local MPA networks, in this case the Channel Islands, place on HMS/pelagic fisheries, and that we see pelagic allowances everywhere else but not in the older Channel Islands network where pelagic allowed areas should arguably be the most prevalent.

MLPA Goal 1. To protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems.

1. Protect and maintain species diversity and abundance consistent with natural fluctuations, including areas of high native species diversity and representative habitats.
 - a. The three MPAs in the petition and their locations are not intrinsically unique to HMS/pelagic finfish due to their highly migratory nature. The migratory nature of these species and the vast area of water they cover shows clear evidence that any take of HMS or pelagic finfish within these MPAs will not significantly affect HMS or pelagic finfish abundance any more than what existing fishery pressure already exerts on these species outside of the MPAs. Additionally, pelagic and HMS fisheries are all offshore, open-water fisheries, and are non-bottom contact. This means any effect on representative habitats containing a diverse spread of species on bottom reefs or nearshore kelp forests will be minimal due to

fishing simply not occurring there, still protecting those species that benefit from MPAs the most.

We already see this in use outside of the Channel Islands Network in the more-modern coastal network that came under the state driven MLPA implementation process. Nearly 40% of the coastal network allows for some form of limited, mostly pelagic, take and still protects those species and habitats that benefit from the protection, the pre-MMP/MLPA Channel Islands only has 3.5%.

2. Protect areas with diverse habitat types in close proximity to each other.
 - a. As the petition prefers only HMS take being allowed, the alternative being a pelagic finfish allowance, the only habitat type affected by this change will be open water. Pelagics and HMS are open water targeted species, one rarely sees billfish or tunas targeted even remotely nearshore let alone in a kelp forest or shallow reef. The unique habitats inside the three MPAs such as kelp forests or rocky reefs will see little to no change in relative level of protection. Even the bottom areas of the three MPAs, which consists of mostly empty mud flats thousands of feet deep, will see no meaningful change in its protection as nearly all HMS or pelagic effort is done at or near the surface or in the mid-water, rarely deeper than 100ft. If needed, the petition also includes options further restricting bottom contact gears outright, but again HMS and pelagic effort mostly avoids the bottom in general.

3. Protect natural size and age structure and genetic diversity of populations in representative habitats.
 - a. The species that live inside these MPAs year-round that gain the most from them are nearshore species living in the shallow-nearshore sections of the MPAs, or are groundfish frequenting the bottom habitat nearshore and offshore on rocky reefs. This fact is stated in the 2008 MMP appendix G which describes what species benefit the most from MPAs and why. As these non-pelagic, local species are predominantly found in these nearshore habitats, and not in open water where HMS and pelagics are found, all of these local, non-pelagic species can expect their populations and genetic diversities to be unaffected by this change. HMS or pelagic species would of course experience some form of take; however, as previously mentioned, levels of take within these areas would not be any different from the surrounding open area and would not be in levels affecting their population structures within the MPA.

4. Protect biodiversity, natural trophic structure, and food webs in representative habitats.
 - a. The amount of HMS or pelagic finfish in these areas is not expected to be significantly higher than the surrounding open area due to their migratory nature. Because of this, the overall trophic structure and food webs of the area will not be significantly affected as any interactions with these HMS or pelagic species will still be present as they move in and out of the area on the currents. The existing protections on local, non-pelagics will remain, leaving the remaining levels of the web unchanged. While some argue pelagic fisheries can just work around the closures, around the Channel Islands because of the higher closure rates, the federal offshore expansions, naval closures, and weather restrictions around the islands make pelagic fisheries are significantly more constricted. Allowing limited pelagic access inside these MPAs will benefit the fisheries not because they contain more pelagic or HMS, but because the added total available area is locally significant.
5. Promote recovery of natural communities from disturbances, both natural and human induced, including water quality.
 - a. HMS and pelagic finfish are well managed groups of fish that are in no need of recovery. In fact, the HMS fishery is one state and federal managers are actively trying to grow due to domestic lack of participation. The water quality protections within the three Channel Islands MPAs in the petition will of course still remain even if the petition is accepted in-part or fully. Additionally the Channel Islands National Marine Sanctuary water quality regulations in the entire area in and out of the MPAs will remain in effect.

MLPA Goal 2. To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.

1. Help protect or rebuild populations of rare, threatened, endangered, depressed, depleted, or overfished species, and the habitats and ecosystem functions upon which they rely.
 - a. As mentioned under Goal 1.5a, none of the HMS or pelagic finfish species that would be targeted in these three MPAs are rare, threatened, endangered, depressed, depleted, or overfished. The open water habitats they live inside will still have existing protections on the habitat. Currently, an overwhelming percentage of HMS consumed in this State are longline imports versus our cleaner hook-and-line fleets. Local swordfish and tuna

fishermen locally pick from the same stocks international longline fleets do, taking only a fraction of the stock and offering a superior grade of seafood both commercially and recreationally for personal consumption. Allowing access to these areas offers a way to meaningfully impact local fleets around the Channel Islands by providing them more water to cover while also not significantly impacting the HMS or pelagic stocks which are currently significantly more affected by international fisheries.

2. Sustain or increase reproduction by species likely to benefit from MPAs, with emphasis on those species identified as more likely to benefit from MPAs, and promote retention of large, mature individuals.
 - a. Appendix G of the 2008 MMP breaks down, on a species level, fish that benefit from MPAs the most and fish that benefit the least. The MMP states that, species benefiting from MPAs the most are local, non-pelagic species:

“MPAs are likely to have their greatest direct benefits on residential species. In general, MPAs offer direct protection to less mobile or sedentary species that locally aggregate in specific habitats (e.g., many of the rockfish species).” -Appendix G of the 2008 MMP

These local, non-pelagic species would still be protected even if this petition was accepted, still allowing for these species to benefit the most from the MPAs, and retain populations of large, mature individuals. The 2008 MMP additionally states that HMS and pelagic finfish are species that receive less if any benefits from MPAs due to sheer amount of water they cover:

“Species with a strong tendency to move will not benefit significantly from the establishment of MPAs [...] Direct benefits of MPAs are expected to be much reduced for highly migratory species (e.g., swordfish, tunas, some sharks) that likely spend relatively little time inside local coastal MPAs. Protection of these mobile species and their contributions to local marine ecosystems may best be addressed by larger-scale regulatory measures.” -Appendix G of the 2008 MMP

With the above guiding information, there is no scientifically supporting rationale to leave the three MPAs in Petition2023-15MPA completely closed to pelagics or HMS. Rather, due to the area traveled by HMS or pelagic finfish, best protective practices are seasonal restrictions, and

size/length requirements, something we already use Stateside with pelagic finfish and federally with HMS. The primary driver this petition only applies to three MPAs and not others was, unlike other no-take areas, pelagic or HMS can more than reasonably be targeted whilst meeting our protection goals in these three MPAs specifically (see Goal 2.4a below). For example, there is no reason to request pelagic or HMS access in MPAs simply too far offshore due to lack of total effort or areas too nearshore that would reasonably never offer significant amounts of pelagic or HMS opportunities because they are too shallow.

3. Sustain or increase reproduction by species likely to benefit from MPAs with emphasis on those species identified as more likely to benefit from MPAs through protection of breeding, spawning, foraging, rearing or nursery areas or other areas where species congregate.
 - a. As mentioned above in Goal 2.2a those species “likely to benefit from MPAs,” non-pelagics/groundfish, will continue to be protected including their breeding, spawning, foraging, rearing and nursery areas, including other areas where species congregate, kelp forests/rocky reefs. These respective habitats will also see little to no effect as pelagic or HMS fishing efforts rarely overlap nearshore areas, shallow, or deep water reefs. These protections still being in effect will allow individuals to grow and mature, increasing local reproduction of the species.
4. Protect selected species and the habitats on which they depend, while allowing some commercial and/or recreational harvest of migratory, highly mobile, or other species; and other activities.
 - a. This MMP objective displays the central ideas of Petition2023-15MPA, clearly stating areas like those requested in the petition be provided. The Channel Islands MPAs (which contain the three MPAs in the petition) are the oldest in the modern network and expand the furthest offshore, yet they provide the least amount of pelagic allowance in the State. The original intentions for these MPAs was protecting local, non-pelagic species, namely groundfish. The Footprint Reserve is a glowing example of this, disconnected from any mainland or island and over a deepwater reef that once was a groundfish fishing area. The MPA went in to specifically rebuild overfished groundfish populations, yet it provides no pelagic allowance. In fact, the Footprint is the only MPA in the State that is disconnected from land that does not have any type of limited pelagic allowance.

Broadly speaking, the Channel Islands network exceeds the State Network in terms of percent area in MPAs, 21% of island waters are protected compared to the State as a whole which has 16% of its waters protected. The Channel Islands are also the only network of MPAs in the State that extend 6 nautical miles offshore, twice the normal 3 nm distance offshore we see. This offshore expansion interferes more with HMS/pelagic fisheries compared to the other State MPAs that are more nearshore.

One would assume that with the higher percent of protection locally and twice the offshore interference that reasonable amounts of pelagic or HMS access would be given, yet the Channel Islands network offers the least pelagic access in the entire MPA network. Where 40% of the State MPAs have some form of pelagic allowance the Channel Islands network only provides 3.5%. While these protections were justifiable over 20 years ago when MPAs were newer, the coastal network didn't exist, the MMPs didn't exist, and less was known about MPAs and pelagic species; the two more-modern MMPs and this objective specifically are glowing examples of why we must adaptively manage the network and provide reasonable amounts of pelagic access where it is realistic as touched on above in Goal 2.2a.

MLPA Goal 3. To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbances, and to manage these uses in a manner consistent with protecting biodiversity.

1. Sustain or enhance cultural, recreational, and educational experiences and uses (for example, by improving catch rates, maintaining high scenic value, lowering congestion, increasing size or abundance of species, and protecting submerged sites).
 - a. The allowance of this petition would certainly provide decongestion of HMS or pelagic fishing areas, especially around Santa Cruz Island during Naval Activity days when most areas beyond 3nm of the island are closed and pelagic opportunity is extremely limited. Catch rates would increase relatively proportional to the included area as the MPAs do not hold significantly more or less HMS or pelagic finfish than the already open waters do. Scenic value of land based and submerged sites would not change, as HMS or pelagic fishing activity has little to no bottom contact interference and is done offshore away from the more biodiverse nearshore areas. Lastly, as mentioned, the size and abundance of local species will not change as they will still be protected, even the size and

abundance of HMS or pelagics should not vary beyond normal fluctuations due to the species covering so much area.

2. Provide opportunities for scientifically valid studies, including studies on MPA effectiveness and other research that benefits from areas with minimal or restricted human disturbance.
 - a. Within the three MPAs the petition looks at there are currently no scientific studies occurring in the midwater where limited take will be present. Occasional bottom surveys of deep water reefs occur inside and outside of these MPAs and the broader Channel Islands; however, a pelagic allowance will not affect these ROV trips or the abundance/diversities of species researchers observe on said trips (we already interact with them when they are outside of the MPAs).
3. Provide opportunities for collaborative scientific monitoring and research projects that evaluate MPAs that promote adaptive management and link with fisheries management, seabird and mammals information needs, classroom science curricula, cooperative fisheries research and volunteer efforts, and identifies participants.
 - a. If granted, this petition does open some doors for scientific monitoring of an area previously closed to everything being opened to HMS or pelagic finfish. This information could be used as part of future adaptive management cycles of the network. While ties between MPAs and fishery management still do exist, these ties have decreased in the pelagic arena for smaller MPAs and nearshore MPA networks, which is what we currently have. The key reason for this is in order for an MPA to have impact on HMS it would have to cover significant amounts of offshore ocean over multiple jurisdictions and international waters, not the nearshore waters most of our network covers. Enforcement alone of an area of that size is simply unreasonable which is why HMS fisheries are managed under size, quantity, and quota limits, not MPAs.

MLPA Goal 4. To protect marine natural heritage, including protection of representative and unique marine life habitats in South Coast California waters, for their intrinsic value.

1. Include within MPAs key and unique habitats identified by the SAT for this region.
 - a. The SAT identified several key and unique habitats to be included in the Southern California section. All of these habitats concern unique bottom structures or substrates and nearshore features like kelp forests. The primary habitat HMS fishing will occur is away from these habitats in open

water. Any of these unique habitats will still remain protected as HMS or pelagic effort never occurs there enough.

2. Include and replicate, to the extent possible [practicable], representatives of all marine habitats identified in the MLPA or the California Marine Life Protection Act Master Plan for Marine Protected Areas across a range of depths.
 - a. This object mirrors the previous Goal 4.1 and requests protections exist across the listed unique habitats in a variety of depth ranges. The three MPAs in Petition2023-15MPA will still have the same protections on the habitat and local, non-pelagic species that live in said habitat.

MLPA Goal 5. To ensure that South Coast California's MPAs have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines.

1. Minimize negative socioeconomic impacts and optimize positive socioeconomic impacts for all users including coastal dependent entities, communities, and interests, to the extent possible, and if consistent with the MLPA and its goals and guidelines.
 - a. Opening these areas, to the requested levels of HMS or pelagic take the petition requests, would minimize the negative socioeconomic impacts these areas currently have while they are no-take. While total take of HMS will not increase by magnitudes, allowance of HMS take inside of the three MPAs will offer alternatives to fishermen on poor weather days due to the MPAs covering most of the consistently calm waters around the Channel Islands. This will not only help to increase local and cleaner commercial fisheries, but also offer benefits to recreational pelagic fisheries, especially catch-and-release marlin fisheries. All of this could be accomplished whilst still meeting the objectives of the MMP and protecting the species that these MPAs are meant for.
2. Provide opportunities for interested parties to help develop objectives, a long-term monitoring plan that includes standardized biological and socioeconomic monitoring protocols, a long-term education and outreach plan, and a strategy for MPA evaluation.
 - a. This objective is somewhat out of the scope of Petition2023-15MPA in this analysis; however, any possible long term monitoring of the MPAs after a change like this is encouraged to validate the claims made in this petition, and that what we see as an effect of making this change is what we expect.

3. Effectively use scientific guidelines in the California Marine Life Protection Act Master Plan for Marine Protected Areas.
 - a. I urge the department and commission to follow these guidelines and MMP objectives for this petition process, as their is their entire purpose, and to understand that Petition2023-15MPA does in fact have explicit support from the MMP and by extension the MLPA. This analysis is meant to show that Petition2023-15MPA is adhering to most, if not all, of these scientific guidelines/objectives.

4. Ensure public understanding of, compliance with, and stakeholder support for MPA boundaries and regulations.
 - a. While any limited-take area offers more complexity than a completely open or closed area, similar existing MPAs in the State that allow for pelagic take show the public can understand and follow regulations allowing take of a set list of species, pelagic finfish or HMS. Outside of MPAs, groundfish exclusion areas (GEAs), established federally, also mirror this petition by restricting only non-pelagic species take (groundfish take) but still allowing for all pelagic take displaying public understanding and enforcement feasibility.

It goes without saying that among those that frequent the Channel Islands offshore areas for pelagic species, a petition like this has complete public support. I have been on the water around these islands for 25 years, and was a part of the first generation of anglers to grow up with these MPAs in effect. Throughout these years the call to allow pelagic access in these areas has existed throughout the local community, and without this call, this massive community driven consensus, this petition would have never existed.

There are some who oppose this petition, there always will be; however, one thing I have yet to receive is a scientifically based reason for these areas to remain closed to HMS or pelagic species, all rational has been emotional. While there are research studies that show massive MPAs, those that rival the size of this State in area, may offer some benefits to pelagics, our Network simply does not and cannot accommodate that type of scale. In fact, a denied petition in 2020 by this Commission explicitly stated that on the record, when a petition requested an MPA be made for an HMS (white sharks) this commission's reply was to deny it because, "MPAs are intended to protect ecosystems, not individual species, especially highly mobile, pelagic species." This precedent has been set

multiple times, there is no reason to not apply it to a set of MPAs that were made before it all, this is a textbook example of adaptive management.

5. Include simple, clear, and focused site-specific objectives/rationales for each MPA and ensure that site-level rationales for each MPA are linked to one or more regional objectives.
 - a. The founding reasons for these MPAs at the Channel Islands in 2002 was the idea to protect our local, non-pelagic species, mainly groundfish at the time. These ideas are still reiterated today in the MPA summaries of all three of these MPAs, the focus on non-pelagic local species, birds, and mammals is clear. While the existing protections certainly can continue to accomplish that objective, Petition2023-15MPA offers a way we can both meet those same goals, and allow for some reasonable forms of take for pelagic species as we see elsewhere in the more modern MPA network. The rationales laid out in this document are evidence that under Petition2023-15MPA's changes we can still meet the same regional objectives we currently meet, plus those revolving around reasonable levels of pelagic take. These additional met objectives, and lower economic impacts make this petition one that arguably helps strengthen the overall network, not weaken it.

MLPA Goal 6. To ensure that the South Coast's MPAs are designed and managed, to the extent possible, as a component of a statewide network.

1. Provide opportunities to promote a process that informs adaptive management and includes stakeholder involvement for regional review and evaluation of management effectiveness to determine if regional MPAs are an effective component of a statewide network.
 - a. We are currently in this adaptive management process as a result of the DMR which includes stakeholder involvement at Commission and MRC meetings discussing this and other MPA adaptive management petitions. While I wish official meetings could be held regionally for petitions I understand that is not doable for this specific process. That being said, unofficial meetings where locals attended (clubs, organizations, MPA Collaboratives) feedback on this petition was overwhelmingly positive.
2. Provide opportunities to coordinate with future MLPA regional stakeholder groups in other regions to ensure that the statewide MPA network meets the goals of the MLPA.

- a. This is already being done at the full commission and MRC levels where stakeholders across the State voice thoughts on regional MPA petitions. Stakeholder support for a petition like this is what one would generally expect, local fisheries/community support, statewide support from fisheries groups/organizations, and statewide lack of support from environmental organizations. It should again be mentioned that supporting reasons for petition2023-15MPA and how it is supported by both the objective and goals of the MMP and MLPA respectively, is the purpose of this document.
3. Ensure ecological connectivity within and between regional components of the statewide network.
 - a. The Channel Islands network is unique in that it is partially isolated from the Coastal MPA network. That being said, connectivity will still be occurring under an accepted petition in part or full as existing protections on species that actually benefit from these MPAs and their habitats will still remain protected. This will keep local species connectivity as strong as it has been under the current network. Pelagic species will still have local MPAs that are no-take at all four islands, in the border network, and far offshore (but still inside the EEZ) where little or no pressure exists on them.
 4. Provide for protection and connectivity of habitat for those species that utilize different habitats over their lifetime.
 - a. As mentioned in several of the above objectives, those species that utilize different habitats over their lifetime are primarily local, non-pelagic species. These species will remain completely protected. Pelagic and especially HMS are species that are in the open water, pelagic region their entire lives, from egg to maturity. All of the species proposed for limited take in Petition2023-15MPA have very limited, if any, interactions or movements between different habitats explicitly due to their life cycles.

The above analysis of the MPA Master Plan's objective based analysis process for adaptive management changes to the MPA network clearly shows that Petition2023-15MPA is supported by the MMP and the MLPA. Not only are there guiding objectives of the 2016 and 2008 MMPs that outright say we must provide areas for pelagic take and that pelagic species are less affected by MPAs, but here we have the Channel Islands network of MPAs that came into effect prior to any MMP providing almost no limited pelagic areas, nothing comparable to what we see in the more-modern coastal network that was guided by the MMP. This is a glowing example of the need for adaptive management in lieu of guiding management documents, CDFW

and FGC statements on previous petitions, and actual MPA implementations from the coastal MLPA that are based on our more-modern data and scientifically based evidence and outlook on MPAs. If I could only say one thing about this petition it would be: we can have pelagic allowed areas and our local protections without weakening the network just like we already have everywhere else. Please consider granting this petition.

Thank you,
Blake Hermann
Petitioner - Petition2023-15MPA



February 28, 2025

California Fish and Game Commission
Marine Resources Committee
P.O. Box 944209
Sacramento, CA 94244-2090

Submitted electronically to fgc@fgc.ca.gov

RE: Comments on Fish and Game Commission Marine Resources Committee March 2025 Meeting Agenda Item 5 A II: MPA Regulation Change Petitions

Dear Vice President Murray and Commissioner Sklar:

Thank you for your continued leadership on the Marine Resources Committee and for your commitment to fostering an inclusive and transparent process as California conducts its first adaptive management process of the statewide marine protected area (MPA) network. The undersigned organizations—representing the public interest, the environment, marine science, environmental justice, and recreational and subsistence fishing interests—are working to ensure that our MPA Network is resilient to the many stressors facing our shared ocean.

We write with three recommendations that pertain to the MPA network adaptive management process. The first supports a robust and inclusive public process, and the second, and third respond to recent changes in process and scientific literature.

- 1) Clearly define outreach criteria for petitioners, set a schedule for Bin 2 petition evaluations, and specify how evaluation criteria will be weighed

- 2) Distinguish between items to be addressed in front of the full commission versus the Marine Resources Committee
 - 3) Incorporate new science in the adaptive management process to meet the Marine Life Protection Act (MLPA) requirement of considering current and future ocean conditions
-

1) Clearly Define Outreach Criteria for Petitioners, Set a Schedule for Bin 2 Petition Evaluations, and Specify How Evaluation Criteria will be Weighed

Our organizations are requesting that the Fish and Game Commission (FGC) outline specific needs and expectations for outreach associated with each petition. There has been extensive discourse in recent meetings regarding the equity of outreach communications, and as we move forward into Bin 2 petition evaluations, there should be clear expectations on this issue. The lack of clarity on this issue has led to misinformation, causing further division between interest groups in an already polarized landscape. Our organizations have deep experience in reaching out to our local communities and in engaging with diverse audiences statewide and beyond. We want to ensure a participatory process; and we also want to make sure that everyone feels safe, respected, and heard. We welcome a conversation at the Marine Resources Committee (MRC) about how to support this shared objective.

In the extensive outreach many of our organizations have undertaken, we have heard repeatedly that the execution of Recommendation 4 (i.e., Consider changes to the MPA network) is suffering from a lack of clear direction on when petitions will be evaluated. We strongly request that the Department of Fish and Wildlife (CDFW) publish a proposed schedule for Bin 2 petition evaluations and associated opportunities for public input. While we recognize that this is a dynamic and complex process, the lack of clarity on the timing for petition evaluations is creating confusion and frustration for many of the stakeholders and Tribes with whom we have connected. Many stakeholders have now been attending meetings on this topic for over a year. We understand that these processes are time-consuming – it would be helpful if future meetings could be focused on specific petitions, for instance.

Finally, we would like for the MRC to host a discussion on how each of the MPA petition criteria will be weighted in petition evaluations. Further, we would appreciate clarity around the verbal references to and documentation requirements for “historical context,” and how it will interact with the science-based criteria (e.g., climate resilience). We refer you to our letter from the February FGC meeting in which we urge the Commission to use the guidance on adaptive management from the MLPA Master Plan.

2) Distinguish Between Items to be Addressed in Front of the Full Commission Versus the Marine Resources Committee

During the February 2025 FGC meeting, commission staff had a discussion regarding commissioner attendance rules at the Marine Resource Committee (MRC) and there was interest expressed for a full-commission discussion on the elements of the petition process to ensure that all FGC Commissioners' expertise and perspectives are considered. Our organizations would first like to commend the leadership of these MRC discussions as we have found them to be extremely collaborative and balanced in their deliberations and discussions. We greatly value your balanced knowledge and expertise in coastal resource management that you bring to inform these discussions. Our coalition has repeatedly voiced support for the continuation of these informal, discussion-based settings at the MRC, and we reiterate that these meetings are crucial in ensuring perspectives from all sides of these issues are heard and considered.

This past February FGC meeting concluded with a recommendation of hosting an informal meeting that hosts the full commission instead of only the commissioners appointed to the MRC in a full commission committee meeting. Our organizations request more information about how the FGC will determine which items will be addressed in this venue. There must be a clear, transparent process for identifying which adaptive management petitions and activities will be discussed in front of the full commission. Any new meeting format will represent a shift in the petition process, and require the public to adjust its engagement with the FGC to meet new meeting cadences. It is critical for petitioners and members of the public to know what to expect with any new format, and when to expect it. It would also be helpful if advance notice is provided. We look forward to discussing this further at the upcoming MRC meeting.

3) ***Incorporate New Science in the Adaptive Management Process to Meet the Marine Life Protection Act (MLPA) Requirement of Considering Current and Future Ocean Conditions***

We continue to emphasize that adaptive management recommendations and decisions must be firmly rooted in unbiased, peer-reviewed science. While anecdotal observations and emotions are valuable, scientific research has overwhelmingly demonstrated that fully and highly protected networks of MPAs benefit marine ecosystems and organisms. We all want to ensure that our coastal resources are abundant and sustainable for generations to come.

We request that CDFW consider recently published, peer-reviewed articles related to MPAs:

- a) **Asokan, A. (2024). “Marine protected areas as a tool for environmental justice.” *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2024.1478023>.**

The linked article specifies that, “an MPA under the appropriate enabling conditions can be a tool to mitigate damage, distribute power, support other cultural value systems, and to advance our understanding of the ocean, climate change and diverse community impacts moving forward.” The process of designing the MPA network left many

important community stakeholders out of the conversation, and this ongoing petition review process provides an opportunity to rectify past mistakes and design a network informed by principles of environmental justice as guided by scientific literature.

- b) **Smith, J.G., et al. (2025). “Conservation benefits of a large marine protected area network that spans multiple ecosystems.” *Conservation Biology*.** <https://doi.org/10.1111/cobi.14435>. A recent state-wide meta-analysis of California’s MPAs shows how conservation benefits of MPAs extend across many different ecosystems, with targeted fish biomass being significantly greater inside no-take MPAs. They also assessed how MPAs were doing regionally and found that 3 of 4 regions (south, central, and northern central) exhibited significantly higher targeted fish biomass inside no-take MPAs across all protected ecosystems.
- c) **Eisaguirre, J.H., et al. (2020). “Trophic redundancy and predator size class structure drive differences in kelp forest ecosystem dynamics.” *Ecology*.** <https://doi.org/10.1002/ecy.2993>. Scientists investigating how to prevent widespread kelp forest ecosystem loss found that inside MPAs, kelp persisted and was healthier than outside protected areas. By reducing harvest on urchin predators inside MPAs, kelp recovery was able to occur, whereas outside the MPAs, less kelp forest persisted. Given increasing stressors our California ocean is being exposed to, applying the best available science to ensure the conservation of our marine ecosystems into the future is key.

These recent papers build on the already established science which shows the success of MPAs. Letters have also been submitted to the Commission indicating support from the scientific community for MPAs and expansion of the network.¹ Finally, we note that there are a host of scientific papers further describing findings from California’s long-term monitoring that will be published in the coming weeks that can help inform the adaptive management process.

Thank you very much for considering these comments on the overall structure of addressing Bin 2 petitions. As always, we are happy to answer questions or discuss any of these items in further detail.

Sincerely,

Zoë Collins
Marine Protected Area Program Coordinator
Heal the Bay

Ashley Eagle-Gibbs,
Executive Director
Environmental Action Committee of West Marin

¹ For instance, see letter submitted from marine scientists to the Commission June 17, 2024 on this topic.

Anupa Asokan
Founder and Executive Director
Fish On

Rikki Eriksen, PhD
Chief Marine Scientist
California Marine Sanctuary Foundation

Ella Merkle
Marine Scientist
California Marine Sanctuary Foundation

Marce Gutiérrez-Graudins
Founder and Executive Director
Azul

Katie O'Donnell
US Ocean Conservation Manager
WILDCOAST

Ray Hiemstra
Associate Director
Orange County Coastkeeper

Sandy Aylesworth
Director, Pacific Initiative, Oceans Division
NRDC

Laura Deehan
State Director
Environment California

California Fish and Game Commission Marine Resources Committee (MRC) Work Plan

Updated February 18, 2025

Topics	Category	Nov 2024	Mar 2025	Jul 2025
Planning Documents, Fishery Management Plans (FMPs)				
MLMA Master Plan for Fisheries – Implementation Updates	Plan Implementation			
Red Abalone Recovery Plan (statewide)	Recovery Plan			
- Risk Tolerance for Reopening Fishery Harvest	Recovery		X	
California Halibut Fishery Management Review (CA Halibut Review) – CA Halibut Trawl Grounds Review	Management Review			
CA Halibut Review – Bycatch Evaluation for Trawl Gear	Management Review			X
Market Squid Fishery Management and FMP Review	Management/ FMP Review	X/R		
Kelp Recovery and Management Plan (KRMP) Development	Recovery/ Management Plan	*		X
Marine Protected Area (MPA) Network 2022 Decadal Management Review Implementation: <i>MPA Petitions</i>	Management Review	X/R	*	X
Regulations				
Kelp and Algae Commercial Harvest – Sea Palm (<i>Postelsia</i>)	Commercial Take	X/R		
Recreational Crab Trap Gear Options and Trap Validation for Commercial Passenger Fishing Vessels	Recreational Take	X/R		
Recreational Barred Sand Bass Fishery	Recreational Take	X/R		
Recreational Red Abalone Fishery Closure Sunset Date	Recreational Take		X/R	
Commercial coonstripe shrimp fishery management	Commercial Take		X	X/R
Marine Aquaculture and State Water Bottom Leases				
Statewide Aquaculture Action Plan	Planning Document			
Status of Existing Leaseholder Requests	Current Leases		X	
Applications for New Leases	Lease Applications			
- San Andreas Shellfish Company (in Tomales Bay)		X		
- Santa Barbara Sea Ranch (off Santa Barbara County coast)			X	
Lease Best Management Practices Plans (Hold, TBD)	Leases–Regulatory			
Special Projects, Informational Topics, and Emerging Management Issues				
Coastal Fishing Communities Project	MRC Project	*	*	
Kelp Restoration and Recovery Tracking	Kelp			X
Experimental Fishing Permit (EFP) Program				
Box Crab Exploratory Fishing	EFP	X		
Pop-Up Gear in State-Managed Fisheries	EFP	X		

Key: X = Discussion X/R = Recommendation and may move to Commission * = Written or oral agency update

From: Erin Eastwood <[REDACTED]>

Sent: Friday, February 28, 2025 4:21:06 PM

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

Subject: Written Comment for March 13 MRC Meeting

Hello,

Please see the written comment from the Santa Ynez Band of Chumash Indians, Environmental Defense Center, and the Natural Resources Defense Council, attached. Thank you for your consideration.

--

Erin Eastwood

Founder and Principal

Blue Spark Strategies, LLC

[REDACTED]

[REDACTED]



February 28, 2025

Samantha Murray, Vice President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95817

Submitted electronically to fgc@fgc.ca.gov

**RE: Comments on Fish and Game Commission Marine Resources Committee March 2025 Meeting
Agenda Item 5 A II: MPA Regulation Change Petitions**

Dear Vice President Murray and Commissioner Sklar:

The Natural Resources Defense Council (NRDC) submitted two petitions to designate new Marine Protected Areas (MPAs) in Santa Barbara County:

- Petition 2023-28-MPA proposes a new MPA in the waters surrounding Point Sal.
- Petition 2023-29MPA, submitted with the co-sponsors, Santa Ynez Band of Chumash Indians (SYBCI) and Environmental Defense Center (EDC), proposes a California-Chumash co-managed MPA off the coast of Carpinteria to be named Mishopshno.

For each petition, we conducted initial outreach during late Summer and Fall 2023 before submission to the Commission. More sustained outreach efforts began upon the petitions' formal acceptance by the Commission in December 2023. We provided an update on our outreach in July 2024, and this letter will describe our subsequent outreach efforts.

Since January 2024, our two organizations and Tribal nation have conducted over 100 meetings and phone calls with stakeholders and community members. Many of the meetings since July 2024 are follow up meetings where we have solicited feedback on the proposed boundaries and regulations and worked to build support for the petitions and address concerns with the proposals. Since the July update, we have conducted additional outreach to local Tribal members and organizations, local fishing representatives, elected officials, and local businesses and community members. We have attended community meetings, fishing association meetings, and hosted public webinars to reach and hear from as many stakeholders as possible. We plan to submit amendments for both of our petitions to the Fish & Game Commission by the March deadline. These amendments will reflect the discussions we have had with Tribes and fishers.

Throughout this process, we have prioritized 1) connecting with the local community, 2) responding to questions, ideas, and concerns, and 3) sharing information as broadly as possible so all interested parties can come to the table to inform upcoming decision-making moments. For the Mishopshno petition in particular, SYBCI, EDC, and NRDC have undertaken our outreach efforts as a team.

We have shared the following types of information throughout our outreach efforts:

- Background on the MPA Network, Marine Life Protection Act goals, Decadal Management Review and its findings, and the latest science

- Fish and Game Commission meeting updates
- MPA petition evaluation timeline and process updates
- Opportunities for public participation
- Research and outreach findings
- MPA petition details

Throughout our outreach, our organizations and Tribal nation have connected with hundreds of interested individuals via email, phone calls, and virtual and in-person meetings, including:

- Federally and non-federally recognized Tribes
- Tribal non-profit organizations
- City Council members, District Supervisors, Mayors, city staff
- Congressional, Assembly, and Senate offices and district staff
- Local and State agencies (i.e., Santa Barbara Flood Control District, Santa Barbara County Parks, State Parks, etc.)
- Local businesses
- Local scientists
- Commercial fishing representatives
- Local recreational fishers (e.g., spearfishers, catch-and-release fishers)
- Local homeowners
- Local, state, and national non-profit organizations
- Youth
- Community centers

These conversations have improved our understanding of the Carpinteria and Point Sal regions, highlighted community support for protecting the coastal waters in those areas and concerns about how it is done, shaped our supplemental site-specific research, and informed our verbal and written public comments to the Commission. We hope the insight and supplemental information gathered through our outreach efforts maximize each petition's potential to strengthen our MPA Network.

In the coming months, we hope to build on the connections we've made thus far and to engage with key stakeholders and members of Tribal nations we haven't yet reached. We look forward to sharing our outreach and supplemental research findings with the CDFW and FGC teams to inform the evaluation of petitions 2023-28MPA and 2023-29MPA.

Thank you for the opportunity to weigh in on the adaptive management of California's MPA Network.

Sincerely,

Sandy Aylesworth
 Director, Pacific Initiative, Nature
 Natural Resources Defense Council

Sam Cohen
 Government Affairs and Legal Officer

Santa Ynez Band of Chumash Indians

Azsha Hudson

Marine Conservation Analyst & Program Manager

Environmental Defense Center

From: Keith Rootsart <[REDACTED]>
Sent: Friday, February 28, 2025 1:30 PM
To: Ashcraft, Susan@FGC <Susan.Ashcraft@fgc.ca.gov>; FGC <FGC@fgc.ca.gov>
Cc: Andy Beahrs <[REDACTED]>; Miller-Henson, Melissa@FGC <Melissa.Miller-Henson@fgc.ca.gov>
Subject: RE: Written Comments - MRC Agenda Item 5A2A

Dear FGC Staff,

The Fish and Game Commission's Marine Resources Committee agenda was posted. We submitted our amendment on our DMR petition in January because the Department said that the sooner they get the revisions the sooner they would evaluate them, but nothing is going to be evaluated until after 6 more amendments are received on March 14, the day after the March 13 MRC meeting.

Since there is no action scheduled on our DMR petition, our input for evaluation will not be needed until at least the next MRC meeting on July 17th, 596 days after we submitted our petition. By then we will be well upon our way restoring kelp in Monterey using existing regulations. By the time CDFW/OPC gets around to deciding whether to restore kelp in Monterey we will have restored more kelp than all the remaining kelp in Monterey. Despite the prospect of the biggest kelp forest residing outside the MPAs, the FGC is not embarrassed or willing to act urgently. At the last FGC meeting Commissioner Murray assured detractors that they are not willing to act quickly on the remaining 15 MPA petitions.

We submitted petitions 2024-10 and 2024-12 and they were denied but they helped clarify the use of an airlift was for commercial use and that culling urchins was not allowed until the KRMP is implemented in 2027. Because the ecosystem is wrecked and starving endangered southern sea otters are washing ashore, we can't wait around and must proceed now without willing government partners. At the February FGC meeting I advised Dr. Shuman that we will be starting this spring removing purple urchins with commercial divers and an airlift. Our certified kelp restoration divers will remove red urchins with bags. This is not the best plan or the best place, but 84% of the coast is available to us without changing regulations in 2023-23MPA AM 1. We will start work in the 92 acre treatment side of Tanker's Reef which is not in an MPA. Our partners at Reef Check California will provide the scientific monitoring and urchin landing data will be available to the Department.

Thank you,

Keith Rootsart

Giant Kelp Restoration



Giant Kelp
Restoration Project

Sea otter carcass in Marina California
December 29, 2024



From: Nicole Heslip <[REDACTED]>

Sent: Friday, February 28, 2025 11:12 AM

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

Subject: Tomales Bay mariculture lease

Dear Fish & Game Commission,

I recently learned of the mariculture lease proposed for Tomales Bay, CA. I have many concerns about this, as this is one of the most biologically sensitive and ecologically important areas of Tomales Bay.

The shellfish and algae cultivation would cover, shade, and occupy habitats, displacing and otherwise harming native wildlife - including shorebirds, marine mammals, eelgrass, and algae that other native species rely on. The intertidal habitat is an essential foraging habitat for migratory shorebirds along this part of the Pacific Flyway. The mariculture operation would cover mudflat and shallow water habitats by removing foraging habitat from these already-declining shorebird populations.

In addition to direct habitat loss from covered mudflats, there would be significant disturbance caused by operations and maintenance - from vessels, machines, and workers maintaining the racks and harvesting the oysters. These activities would further limit shorebirds foraging on adjacent mudflats with the noise and degradation of water quality from boat engines.

The proposed mariculture operation threatens the health of adjacent eelgrass beds, as the narrow margins between oyster and eelgrass areas make it difficult for boats to avoid damage. Eelgrass naturally expands and contracts, but this project would prevent its growth, while anchor and mooring lines could further degrade its condition.

Harbor seals, including 400-500 individuals with 100 pups, rely on Tomales Bay's waters and tidal habitats for feeding and breeding. Increased noise, visual disturbances, and pollution from the operation would disrupt these marine mammals. Additionally, proposed structures with fencing and roofing to exclude birds and mammals could have unstudied ecological consequences.

The project also includes commercial cultivation of unspecified red algae for agar production. Without clear details, there is concern that an invasive species—previously introduced through mariculture—could outcompete native algae, threatening the estuary's delicate ecosystem.

Endangered Coho salmon and threatened steelhead use the estuary, and this operation would further reduce their habitat while exposing them to human disturbances and water quality degradation.

The bay's ecosystem is already under severe stress from climate-related changes, including marine heat waves, the deaths of over 40% of the gray whale population, massive sea star die-offs, and the loss of 90% of kelp forests. Introducing additional pressures could further compromise the resilience of this fragile environment.

In summary, there are far too many legitimate, ecologically important reasons to deny this mariculture lease in Tomales Bay, and for the record, I urgently oppose it.

Thank you,

Nicole Heslip

San Anselmo, CA resident