Committee Staff Summary for March 12, 2026 MRC

2. State Aquaculture Action Plan

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

Receive update from California Ocean Protection Council (OPC) staff on the scope and content of the draft aquaculture action plan (AAP), engagement process to date, and timeline for release, public review, and adoption. Review key action plan themes.

Summary of Previous/Future Actions

- Received OPC written update on AAP development — November 6, 2025; MRC
- **Today, receive update on the scope, content, and timeline of the draft AAP** — **March 12, 2026; MRC**

Background

OPC is leading the development of a statewide AAP that will provide a comprehensive, standardized framework and policy for sustainable commercial marine aquaculture in California. The collaborative effort among members of the Statewide Aquaculture Leadership Team includes the Department and Commission. The AAP is anticipated to be highly relevant to Commission operations for commercial aquaculture, with goals and actions that aim to increase coordination among state agencies and improve consistency, transparency, and efficiency of marine aquaculture oversight and support.

The AAP is centered on three goals:

1. Improve California's aquaculture governance framework through increased interagency coordination and transparency;
2. Maximize environmental sustainability and protect public health; and
3. Facilitate sustainable development of marine aquaculture in state waters.

OPC has provided written and verbal updates about the plan's development in previous meetings. Most recently, at the November 2025 MRC meeting, MRC asked OPC to present an update during this meeting, in advance of the upcoming draft public release.

Today, OPC staff will present on the AAP's scope, content, and timeline for a final product (Exhibit 1). The draft plan is expected to be released in June 2026, followed by public review and OPC adoption. AAP developments can be followed on OPC's website at California Aquaculture Action Plan - California Ocean Protection Council.

Significant Public Comments

A state water-bottom aquaculture leaseholder expressed appreciation for the AAP industry workshop, which he attended. He hopes to see the results of the workshop reflected in the AAP, especially the calls for transparency, clear permitting timelines, state-led public education, programmatic permitting, equitable licensing, and a centralized, independently-monitored data portal (Exhibit 2).

Recommendation (N/A)

Exhibits

1. OPC presentation
2. Email from Bernard Friedman, CEO, Santa Barbara Mariculture Company, received February 26, 2026

Committee Direction/Recommendation (N/A)

Statewide Marine Aquaculture Action Plan

Update to the Marine Resources Committee

March 12, 2026

Katie Cieri, Sustainable Fisheries and Aquaculture Program Manager
California Ocean Protection Council

Presentation Overview

- Overview of Action Plan Development
- Overview of Action Plan
  - Purpose
  - Scope and Definitions
  - Goals
  - Engagement Overview
  - Action Themes
- Next Steps

CALIFORNIA OCEAN PROTECTION COUNCIL

OPC's Mission & Priorities

Protect California's coast and ocean by advancing innovative, science-based policy and management, making strategic investments, and catalyzing action through partnerships and collaboration.

2026-2030 Strategic Plan

Climate Change

Community Benefits and Stewardship

Biodiversity

Sustainable Blue Economy

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Aquaculture Leadership Team

OPC convened the Aquaculture Leadership Team in 2021

CALIFORNIA OCEAN PROTECTION COUNCIL

CALIFORNIA DEPARTMENT OF FISH & WILDLIFE

CALIFORNIA FISH & GAME COMMISSION STATE OF CALIFORNIA est. 1870

CALIFORNIA COASTAL COMMISSION

CALIFORNIA STATE LANDS COMMISSION STATE OF CALIFORNIA

Coastal Conservancy

CALIFORNIA Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

California Department of PublicHealth

cdfa
CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

CALIFORNIA OCEAN PROTECTION COUNCIL

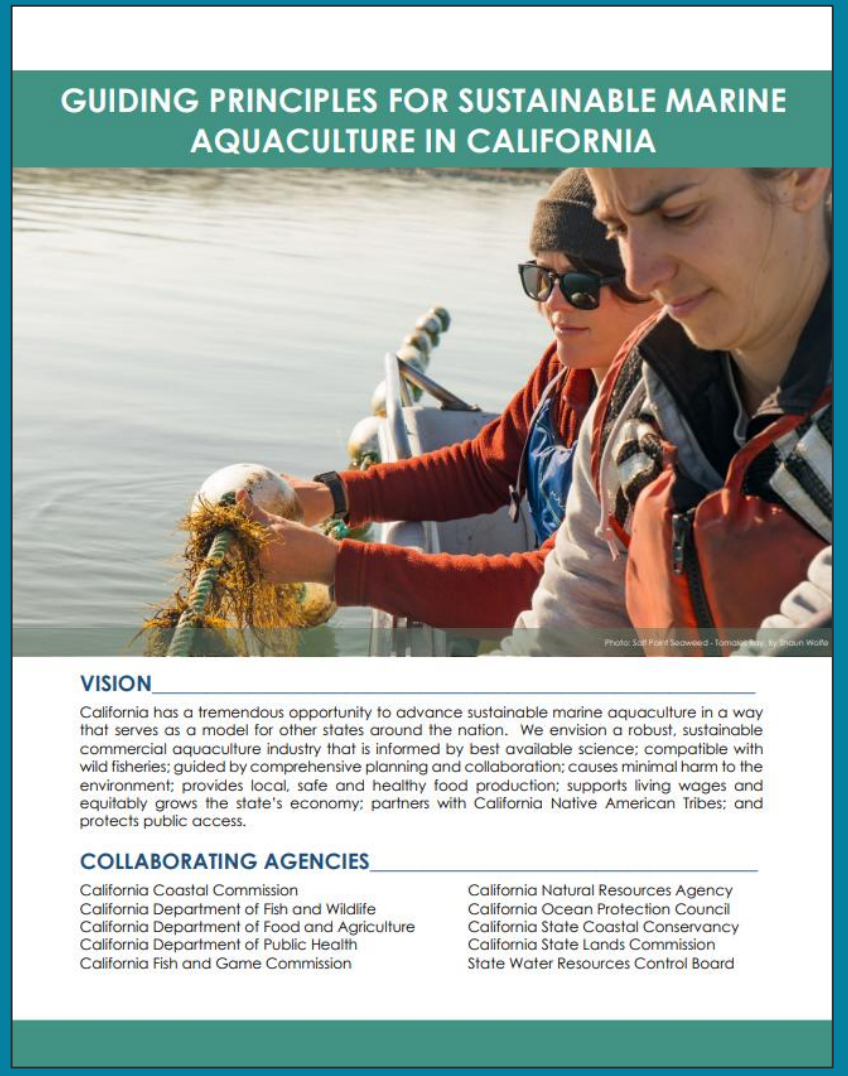
Action Plan Process

Guiding Principles

Released by the Aquaculture Leadership Team in 2021

Established the State's vision for commercial marine aquaculture

First step in development of Aquaculture Action Plan



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Action Plan Purpose and Scope

- Increase coordination among state agencies
- Improve consistency, transparency, and efficiency in planning, facilitating, permitting, managing, and fostering sustainable marine aquaculture.
- **Marine algae and shellfish** in marine waters, estuaries, bays, and submerged tidelands extending out to three nautical miles
- Marine algae, shellfish, and finfish in land-based systems along the coast.
- **Commercial marine aquaculture:** aquaculture intended for harvest for sale.

Goals

Goal 1: Improve California's aquaculture governance framework through increased interagency coordination and transparency.

Goal 2: Maximize environmental sustainability and continue to protect and enhance public health.

Goal 3: Facilitate sustainable development of marine aquaculture in state waters.

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Tribal and Partner Engagement Themes

Prioritize a data and science-based approach. Build on existing knowledge		
Goal 1	**Goal 2**	**Goal 3**
Increase transparency, and continue partner engagement	Evaluate and address environmental risks and impacts	Support pilot-scale aquaculture programs
Prioritize tribal partnership and tribal perspectives	Complete a Programmatic Environmental Impact Report	
Clarify agency jurisdictions and regulatory processes	Advance spatial planning, including identification of suitable and avoidance areas	
Establish a single, efficient permit application process	Prioritize water quality and healthy water bodies	
Increase efficiency	Use monitoring data and emerging information to adaptively manage projects	

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Highlighted Action Themes

Goal 1	Goal 2	Goal 3
Coordinate with tribes, Aquaculture Development Committee, and other partners	Prioritize development of local/regional programmatic environmental impact reports	Develop a State Aquaculture Science Plan
Develop a consolidated aquaculture permit application process	Identify and address threats to water quality	Evaluate development of a Pilot-Scale Aquaculture Program
Pursue strategies for agency cost recovery, improved capacity, efficiency for CEQA evaluation	Identify desired outcomes and Best Management Practices to minimize environmental impacts	
	Develop siting guidance, including areas to avoid	
	Support legacy gear removal	

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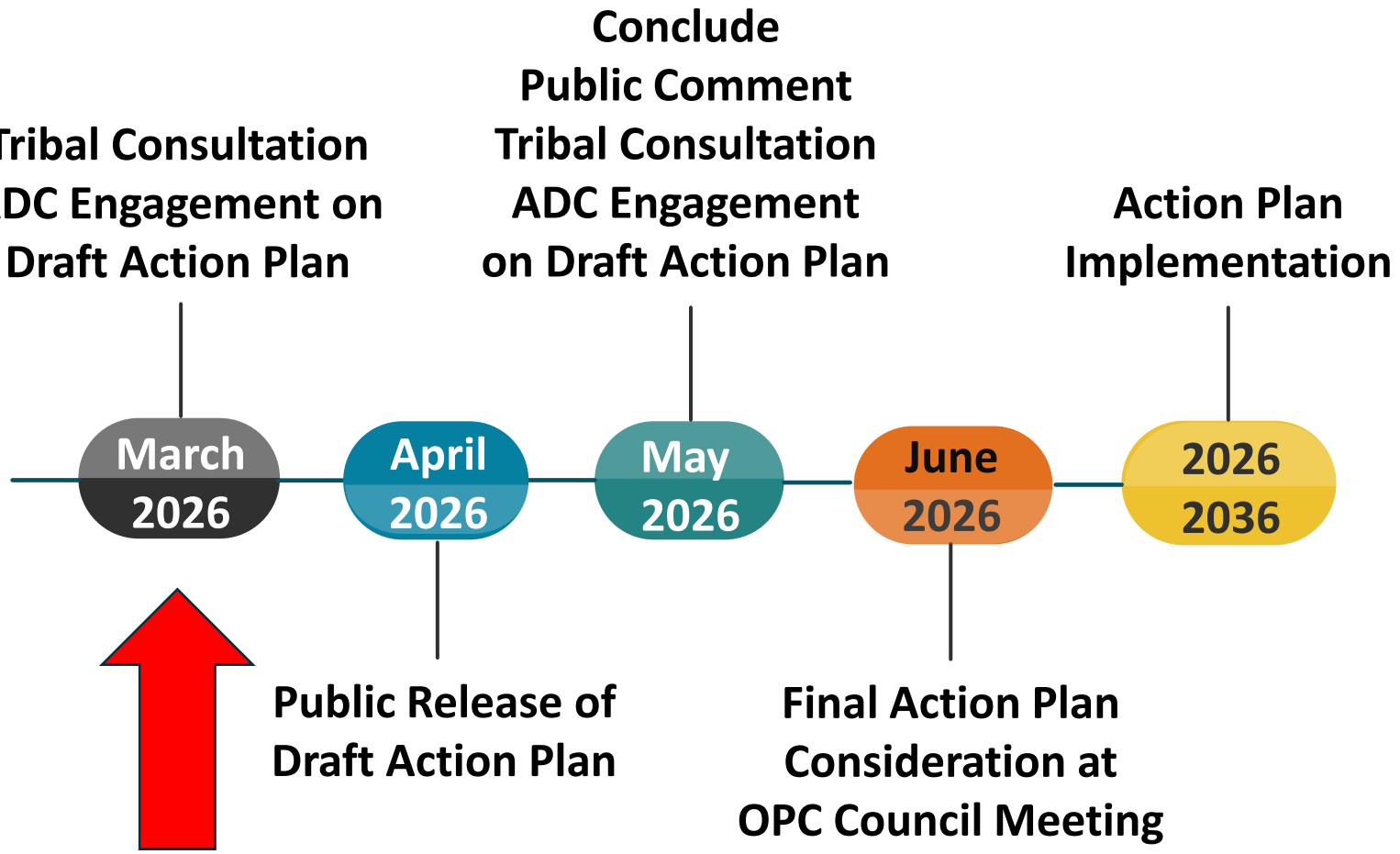
Next Steps



Follow Action Plan process:

https://opc.ca.gov/california-aquaculture-action-plan

CALIFORNIA OCEAN PROTECTION COUNCIL

Thank you!

Katie Cieri, Sustainable Fisheries and Aquaculture Program Manager
katie.cieri@resources.ca.gov

From:
Sent: Thursday, February 26, 2026 8:53 PM
To: FGC <FGC@fgc.ca.gov>
Cc: Ashcraft, Susan@FGC <>; Newell, Caroline@FGC <>; Kevin Gaines <>; Sergey Nuzhdin <>
Subject: MRC meeting march 12, 2026 comment letter

Hello FGC,

The following comments and the attached letter are for the MRC meeting March 12, 2026 Agenda Items 2 and 3. I will be attending in person and would very much like to continue my communications on all things aquaculture as all items posted on the agenda are very much related to one another. I explain this in the following.

Agenda item 2.

I participated in the Aquaculture Action Plan Industry Workshop on January 22, 2026 and thought the workshop went very well. OPC was very receptive to the industries concerns and captured those comments in a summary. It is my expressed hope that those comments will be incorporated in the revised AAP which I have not yet seen as of this writing.

Some of the key take aways I thought were very relevant to my 24 years of open ocean aquaculture experience in California are as follows:

- Establishing transparency, clear timetables, and accountability are key responsibilities for relevant permitting agencies.

- Agencies should advocate for aquaculture on it's scientific merits

-Education of the public on the merits of aquaculture is the burden of the State of California and not the applicant

-There should be one data portal monitored by independent scientist to distribute to applicants, agencies, and whoever wants to know

-Programmatic permitting of species and gear type to streamline permitting and create equity for all industry members and applicants

-Give license for the practice of aquaculture equitably with transparency

OPC seems to recognize that the State's aquaculture program has been in a long stagnation of disrepair which I am currently experiencing with my own continuous

permitting issues. I already have 6 permit ammendments on my coastal development permit but can't get support for ammending my lease with FGC. I applaud OPC for having the political will for tackling a long and well known problem for how to develop aquaculture sustainably in California.

Agenda item 3.

Please see the attached document which is a summary of the Santa Barbara Community Kelp Farm. Under the agenda item called status of existing lease holder requests I had previously had a request for adding 2 native species to my lease submitted for the past 5 years and recently cancelled that request (because it remained unfullfilled), to substitute a more pressing request. Santa Barbara Community Kelp Farm (SBCKF) has been submitted to the aquaculture coordinator for the past 4 months and is still in phase 0 with no details on whether a multi agency review has been held. At the rate that the current request is travelling, and based on previous experiences with previous requests, I am guessing the SBCKF request may not have agency appproval until 2031 to 2034. This rate of travel in your permmtting program cannot stand. Change must be implemented.

I am traveling to the MRC to understand what changes are going to be made. I am hoping some of the issues will be tackled with the AAP in agenda item 2. Otherwise I will go it alone. I would like to hear resolutions and accountability for change.

FGC, I want to personally thank you for the last few communications leading up to this meeting. The hiring of Caroline Newell is a change I see that is already making a difference. You should know by now that I deeply care about the relationship that I have with my family, my farm, and my community. I have been a deeply committed practitioner of aquaculture here in the Santa Barbara Channel. I cannot continue without FGC's most vital support.

Regards,

Bernard Friedman

Santa Barbara Mariculture Co.

Bernard Friedman

Santa Barbara, CA

Santa Barbara Community Kelp Farm (SBCKF)

Project Overview

The Santa Barbara Community Kelp Farm (SBCKF) is a proposed 20-acre kelp aquaculture project located in State waters approximately one mile offshore of East Beach in Santa Barbara, California and 1.5 miles from the harbor entrance giving relatively easy access for visiting the farm.

The project is designed as a commercial demonstration-scale aquaculture operation consistent with California's marine resource management framework and intended to operate under all applicable CDFW, Coastal Commission, State Lands, and federal permitting requirements.

Social license is crucial for gaining the support of the legislative and regulatory governance system. SBCKF aims to build bridges into the aquaculture arena by focusing on research and teaching tools for the future development of larger kelp projects. Research, classes, tours, and workshops will be part of the showcase of the future of aquaculture. The farm also aims to develop kelp products for food and to showcase those products with local vendors. Lastly, the farm aims to promote ecosystem services kelp naturally provides for the environment such as regeneration of nearby kelp forests, buffering ocean acidification and harmful algal blooms, and increasing diversity in the environment.

SBCKF will be structured as a Limited Liability Company (LLC) with two members holding approximately equal ownership shares.

Santa Barbara Mariculture Company (SBMC)

Santa Barbara Mariculture Company (SBMC), owned and operated by Bernard Friedman, will serve as the primary offshore operator.

- 24 years of continuous shellfish aquaculture operations
- 72-acre farm located approximately ¾ mile offshore of Hendry's Beach
- Master's degree in Fisheries Management
- 30 years of mariculture experience in the Santa Barbara Channel
- Established working relationships with state and federal regulatory agencies

SBMC's long operational history in the Santa Barbara Channel provides demonstrated experience in:

- Offshore gear management
- Environmental compliance
- Reporting and monitoring
- Navigational safety
- Multi-agency coordination

Kelp Ark (501(c)(3) Nonprofit)

Kelp Ark is a California-based nonprofit organization focused on kelp conservation, genetics, and responsible aquaculture advancement.

Mission:
To safeguard the future of oceans through living biobanks by collecting, conserving, and sharing the genetic diversity of marine algae to support biodiversity, restoration, and sustainable mariculture.

Kelp Ark contributes:

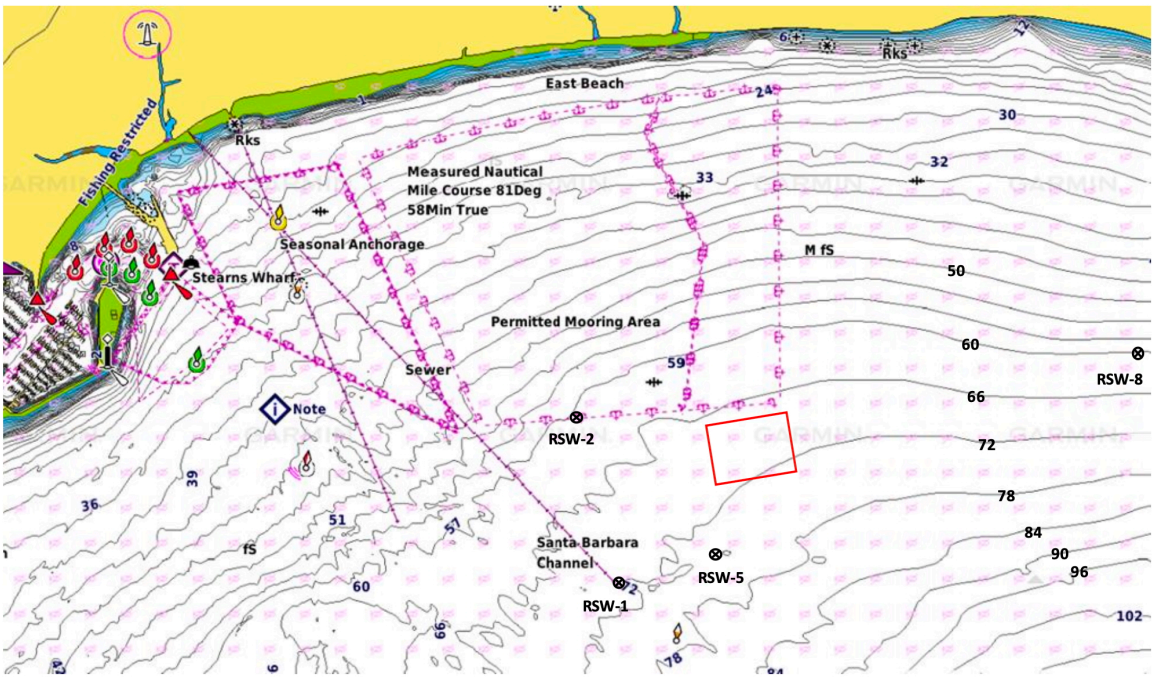
- Germplasm preservation expertise
- Genetic diversity management
- Controlled propagation of kelp gametophytes and sporophytes
- Science-based restoration support
- Traceable seedstock production

The organization was founded by Dr. Sergey Nuzhdin, Professor of Genetics at USC, with over 200 peer-reviewed publications and 30 years of experience in evolutionary genetics and population biology.

Kelp Ark's scientific leadership ensures that kelp cultivation efforts are informed by:

- Genetic diversity safeguards
- Population structure analysis
- Adaptive resilience considerations
- Long-term biodiversity protection

Farm Location Map



SBCKF is the red rectangle just south of the permitted mooring area.

Permitting Pathway

The permitting path for aquaculture is a long and arduous process with multiple agencies and extended timelines, but winds of change are currently on the horizon with the Ocean Protection Council ushering in an Aquaculture Action Plan in the Summer of 2026 with an agenda to fund 3 kelp farms which our group believes is a perfect fit. SBCKF is seeking a 15-year lease with the California Fish and Game Commission which has the regulatory authority to administer State Water Bottom Leases. Santa Barbara Mariculture was issued a 15-year lease back in 2018 and has the experience and expertise to get through the regulatory system.

The Genesis of SBCKF

In May of 2024, Bernard Friedman was invited by Greenwave to tour and workshop two 20-acre kelp farms off the coast of Kodiak, Alaska. Greenwave is a national non-profit organization dedicated to supporting and replicating scalable regenerative ocean farms. Greenwave's mission is to train and support small scale farmers such as myself to become self-supported and vertically integrated kelp farmers.

I arrived in Kodiak as a skeptic and left 4 days later a believer in the future of kelp and the possibilities kelp can do for the planet. It was amazing to experience how a single planting of one kelp species could attract a variety of other edible kelp species, many which were delicious to eat straight from the farm. This workshop had 25 attendees, all kelp farmers, and it was very uplifting to hear both success stories and failures and the diversity of kelp products and processing techniques incorporated into individual farms.

The Generation of Permitting Efficiencies

SBCKF would like to see the programmatic permitting of native kelp species and gear types on which the kelp is grown. If there are to be future farmers of the sea, the creation of equity in the permitting pathway should be endorsed. Although everyone likes to be treated as individuals, the permitting pathway should give equitable license to farm kelp in the ocean particularly geared to the less wealthy future farmers of California's coastal zones.

SBCKF believes the regulatory system should look to Alaska and Maine for guidance on programmatic permitting. Individuals should not have to lobby the state of California every time they want to cultivate an additional species or change their gear type.

In the event, the State of California does not want to create an equitable permitting system, SBCKF is prepared to move forward with the following kelp species and gear types.

SBCKF will cultivate three native, high-value kelp species:

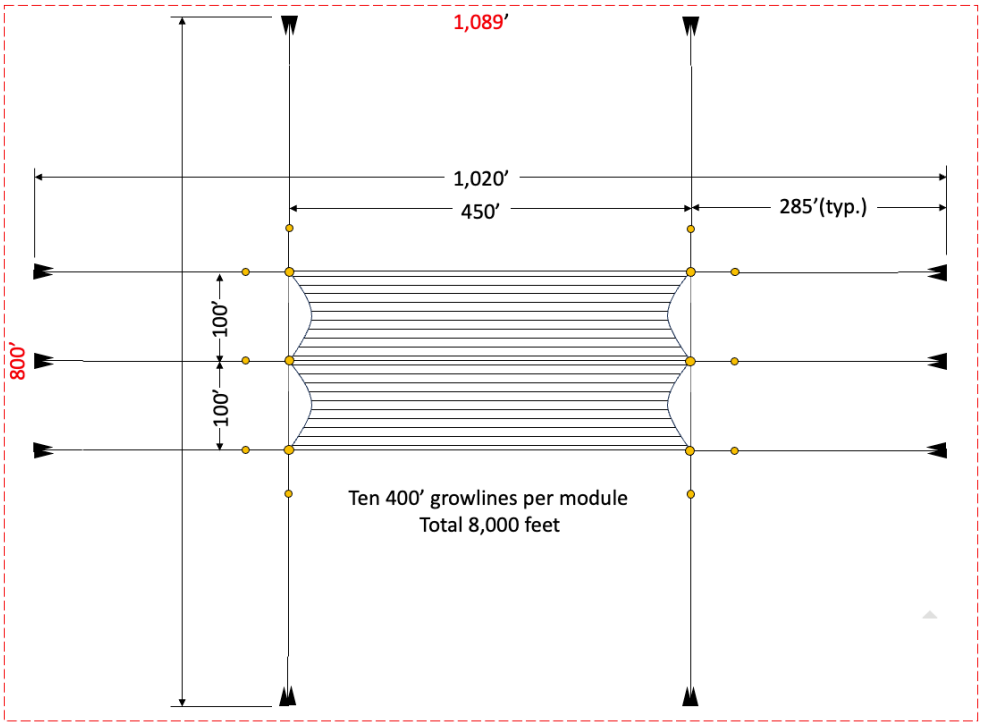
- ***Laminaria farlowii*** **(Golden Kombu):** High-value kombu species with strong food-market potential; high alginate content and well-suited to growline depths.
- ***Eisenia arborea*** **(Southern Sea Palm):** Warm-water tolerant and climate-resilient; approximately 65% alginate and high protein content; promising bioactive and nutraceutical profiles.

- ***Macrocystis pyrifera* (Giant Kelp):** Fast-growing canopy-forming kelp used for biomass, biostimulants, and feedstock; included as a targeted species in this project for demonstration modules.

Farm Module Design (Catenary Longline System)

The farm will use a robust catenary longline system designed to minimize drag, facilitate safe vessel access, and withstand storms.

Conceptual 100' x 400' catenary layout:



Summary

The Santa Barbara Community Kelp Farm represents a three-species, community-scale kelp aquaculture model in California state waters. By integrating high-value native kelps (*Laminaria farlowii, Eisenia arborea, and Macrocystis pyrifera*) with a proven catenary longline design and 75 kg JAYCO anchors, the farm is engineered for environmental resilience, educational use, and long-term economic viability. Local community letters of support have been obtained by the City of Santa Barbara (including Waterfront, Sustainability & Resilience, Public Works & Water Resources departments), Commercial Fisherman of Santa Barbara (CFSB) and Santa Barbara Community College.

City of Santa Barbara
City Administrator's Office

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93102-1990

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Fax: 805-897-1993

September 22, 2025

Santa Barbara Mariculture
Bernard Friedman
[redacted]

RE: Proposed Santa Barbara Community Kelp Farm

Dear Mr. Bernard Friedman,

The City of Santa Barbara would like to express support for the proposed 20-acre Santa Barbara Community Kelp Farm to be located 1.5 miles southeast of the Santa Barbara Harbor.

City representatives from Waterfront, Public Works, Water Resources, and Sustainability & Resilience Departments met with Santa Barbara Mariculture on September 15, 2025, to review the proposed project. The project was also presented to the Santa Barbara Harbor Commission who expressed strong support.

The City's biggest concerns with the Kelp Farm operation are impacts to City Water Resources Operations and Infrastructure (desalination intake and wastewater outfall infrastructure). Based on the information provided, the project would likely create minimal impact that could be mitigated with the siting of the farming operation. Per our discussion, the most significant concern was siting the Kelp Farm to avoid the City's receiving water monitoring locations, which seem to be an amendable accommodation.

The City of Santa Barbara is especially supportive of the benefits this project could provide, including:

- Alignment with the City's Local Coastal Program in the support of ocean dependent uses, commercial fishing, and aquaculture.
- Increased economic activity related to aquaculture education and activities within the harbor.
- Alignment with the City's Climate Action Plan Carbon Sequestration efforts.

The City trusts in your ability and local knowledge and feels that Santa Barbara Mariculture can successfully and responsibly see this project through. We look forward to working with you in support of the Santa Barbara Community Kelp Farm project.

Sincerely,

Kelly McAdoo, City Administrator

Cc: Mike Wiltshire, Waterfront Director
Alelia Parenteau, Sustainability & Resilience Director
Joshua Haggmark, Water Resources Director
Brian D'Amour, Public Works Director

SANTA BARBARA CITY COLLEGE
EDUCATIONAL PROGRAMS

October 8, 2025

Sergey Nuzhdin
Kelp Ark
[redacted]
San Pedro, CA [redacted]

RE: Kelp Ark Funding Proposal – Letter of Support

Dear Professor Nuzhdin:

I am writing to express Santa Barbara City College's (SBCC) strong dedication to collaborate on your proposal for establishing the first offshore commercial kelp farm in CA waters, along with dedicated education and workforce development efforts. SBCC's Marine Diving Technology (MDT) and Environmental Studies (ES) programs are well positioned to expand existing educational pathways and related workforce development strategies and are in full support of the proposed kelp mariculture project led by Santa Barbara Mariculture and Kelp Ark.

This initiative represents an extraordinary opportunity to integrate commercial diving and marine technology training with cutting-edge sustainable aquaculture. Mariculture operations, including the construction, inspection, and maintenance of offshore farms, rely heavily on the specialized skills of surface-supplied commercial divers. Tasks such as installing anchors and grow lines, performing underwater inspections, conducting routine maintenance, and ensuring the structural integrity of mariculture systems are directly aligned with the training objectives of SBCC's MDT program. By participating in this project, our students would gain invaluable real-world experience in a rapidly expanding sector of the Blue Economy.

This project also presents a unique platform to deploy and train students on our newly acquired remotely operated vehicle (ROV) systems. ROVs are increasingly critical tools for aquaculture operations, providing efficient methods for data collection, crop monitoring, and inspection of farm infrastructure. Integrating ROV operations alongside diver-based work will give our students comprehensive exposure to the combined technologies used in modern mariculture. If SBCC's MDT and ES students are engaged in both the implementation and continued maintenance of the farm, they will benefit from hands-on experience operating a full surface-supplied dive spread aboard vessels while working in real-world mariculture environments. This type of applied training, anchored in live offshore projects, cannot be replicated in the classroom alone. It would prepare our students not only for traditional careers in offshore and inland commercial diving, but also for emerging roles in regenerative aquaculture, marine robotics, and Blue Economy industries.

For these reasons, we believe the Santa Barbara Community Kelp Farm project will provide transformative experiential learning for our students, support local workforce development, and strengthen the alignment of SBCC's MDT and ES programs with regional and national Blue Economy priorities.

Sincerely,

Jens-Uwe Kuhn, Ph.D.
Dean, Educational Programs

721 Cliff Drive • Santa Barbara, California 93109-2394 • Phone (805) 965-0581 • Fax (805) 963-7222

COMMERCIAL FISHERMEN OF SANTA BARBARA
6 Harbor Way #155, Santa Barbara, CA 93109

July 21, 2025

RE: Santa Barbara floating kelp farm project Proposal

To Whom it May Concern,

For over 40 years, The Commercial Fishermen of Santa Barbara (CFSB), a 501(c)3 non-profit organization, has been committed to making our local fishing community resilient and effective by providing healthy, high quality seafood to local and global markets, ensuring the economic and biological sustainability of fisheries, and maintaining California's fishing heritage. CFSB is a highly-respected association within the California fishing community and represents the interests of a diverse set of vastly experienced fishermen, divers, boat builders, and distributors who are leaders in the commercial fishing industry. On behalf of our organization, we write this letter to express our support for Bernard Friedman's proposed kelp farm off the coast of Santa Barbara.

Bernard served on CFSB's board for 5 years and has proven himself to be an extremely hardworking and trustworthy individual in the community. His successful mussel farm business, Santa Barbara Mariculture, is the byproduct of his impressive educational background, diligent work ethic, and unwavering commitment to his craft.

We believe this project presents a promising opportunity to explore the ecological, educational, and economic benefits of native kelp cultivation in the Santa Barbara Channel. The kelp farm's commitment to sustainability, vocational training, carbon and nitrogen sequestration, and culinary and agricultural applications aligns with our values and vision for a healthy, resilient working ocean.

This proposed farm speaks to the importance of aquaculture in California's Blue Economy and the fact that the California Coastal Act and Santa Barbara's Local Coastal Plan makes its promotion and development a top priority. Furthermore, this kelp farm would address and complement the objectives' of CFSB's academic-industry partnership with SBCC, the Ocean Collective. It also supports the objectives of the Ocean Protection Council regarding their plans to promote algal and bivalve aquaculture.

The proposed location—over sandy bottom in 50 to 70 feet of water and situated near the harbor but outside key navigation and fishing areas—demonstrates thoughtful planning and

COMMERCIAL FISHERMEN OF SANTA BARBARA

consideration of existing marine uses. As representatives of the local commercial fishing fleet, we appreciate this careful approach to siting, and support the project's intent to minimize conflicts with fishing and boating activities.

We look forward to remaining engaged in conversations around the development and integration of this project into the broader working waterfront and marine ecosystem of Santa Barbara.

Sincerely,

Chris Voss
President, CFSB

Kim Selkoe
Executive Director,CFSB

Ava Schulenberg
Assistant Director, CFSB