

2023 California NGO Responsible Aquaculture Forum



Photo Credit: Mike Graham; Gracilariopsis

Aquaculture in California and the need for Dialogue

As the global population grows, there is increasing pressure to produce more food. Seafood, specifically that of which is farmed, is frequently acknowledged as one of the means to meet this demand. While there have been tremendous developments in responsible aquaculture on a global scale, domestically, there remain knowledge gaps and mixed public perceptions surrounding industry development.

When done correctly, responsible aquaculture has the potential to enhance food, economics, and the environment sustainably. However, it also needs to be scaled intentionally to maintain social equity and the protection of surrounding ecosystems. The connections between farming and the environment are not always well-understood or considered by all stakeholders, and decision-making processes surrounding aquaculture regulation need a balanced representation of relevant partners, such as scientists, farmers, environmental groups, and local communities. In particular, conservation focused entities have and continue to play a significant role in advocating for environmental protections in California and their views are equally important when considering development of aquaculture in the State. Many of these groups however are not singular in focus or practice. Some conservation nonprofits focusing on equitable and sustainable practices can foster cooperation between entities and serve an essential function, guiding domestic sustainable aquaculture development while informing communities about a role for aquaculture in the United States. While other nonprofit organizations take a more watch-dog role with skepticism around aquaculture practices and development.

On August 25th, 2023, California Sea Grant, Save Our Shores, and Moss Landing Marine Laboratories partnered to host the California Responsible Aquaculture NGO Forum. The 2023 Forum brought together thirteen attendees from twelve engaged California conservation entities to discuss what encompasses responsible aquaculture from their viewpoints, the potential for these practices to occur in local California communities and environs from their perspectives, and any questions or concerns that could be addressed as a group. The main goal of this forum was to convene interested NGOs to share their perspectives on aquaculture in California, summarize the varied positions, and coalesce around any shared values on aquaculture. This summary attempts to provide an informational resource for stakeholders and help inform aquaculture practitioners, regulators, and research-funding organizations on concerns and opportunities for aquaculture in California from the perspective of the invited and participating conservation groups.

Forum Participants

- ❖ Resource Legacy Fund
- ❖ California Marine Sanctuary Foundation
- ❖ Blue Frontier
- ❖ Oceana
- ❖ Seafood and Gender Equality
- ❖ East Marin Action Committee
- ❖ Earthjustice
- ❖ World Wildlife Fund

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- ❖ Paso Pacifico
 - ❖ San Diego Coast Keepers
 - ❖ Fish Wise
 - ❖ Audubon
 - ❖ Save Our Shores



Photo Credit: Luke Gardner; Outplanting juvenile Olympia Oysters in Elkhorn Slough for restoration

Initial Aquaculture Perceptions

At the start of the forum, participants broadly summarized their organization’s work, and their personal thoughts on aquaculture in California. Participants were provided guiding questions to help aid their remarks including:

- 1) What is the role of aquaculture in California**

2) What potential benefits could aquaculture provide to communities/environments

3) What concerns need to be addressed to facilitate sustainable development

It was acknowledged at the forum that individual participant's viewpoints on aquaculture did not necessarily need to be that of their organization's official published stance. We offer our sincere thanks to our participants for their time and providing their valuable feedback.

Consideration of the role of aquaculture in California among participants was varied. At the start of the forum, many participants stated they were not open to finfish aquaculture but were open to bivalve and algae operations with stipulations in place. There was a perception the aquaculture could have a role in developing coastal and climate resilience in California at small scales both commercially and for environmental conservation. Others, expressed skepticism about aquaculture's positive role in climate and coastal resilience and, instead, were concerned that aquaculture practices could lead to reduced climate resilience via unsustainable practices. Viewpoints ranged from supporting and running institutional programs designed to develop aquaculture for species and environmental restoration to organizations that are not focused on the aquaculture development, but are focused on environmental protection and act as watchdogs to safeguard environments from current and proposed aquaculture activities.

Through discussion, some attendees highlighted some of potential benefits that aquaculture may provide communities and environments in California. These included economic resilience for coastal communities especially in response to changing climate conditions negatively affecting existing coastally dependent jobs. Participants considered that aquaculture development also offered an opportunity to close the gender gap in the seafood production and increase diversity generally in the sector. Aquaculture was also indicated as a potential way to help facilitate Indigenous communities' reconnection with ocean stewardship and access to traditional and customary foods. The development of aquaculture infrastructure and expertise was noted as a potential benefit for the emerging field of conservation aquaculture which is increasingly being used to help restore impacted aquatic environments and threatened species. Finally, aquaculture was discussed in reference to the possible carbon and climate positive benefits that the practice could bring.

Historically, aquaculture development in the U.S and elsewhere has been associated with negative impacts to localized and global environments from which it operates. While there could be a role for future aquaculture development in California, participants listed a number of concerns they feel should be addressed in relation to aquaculture development and the environment. Generally, there was a perception that regulations governing aquaculture in California regulations should not be weakened to facilitate the development of the sector but instead should be refined to create a more cohesive regulatory framework and that public agencies responsible for permitting and monitoring aquaculture are performing their duties efficiently. Scale and industrialization of aquaculture was an

additional concern among participants citing a worry about cumulative effects of multiple aquaculture activities on local environments that may not be considered based on current permitting processes. Further, there was a concern that aquaculture could develop in areas with marine protected designations. Finally, a research need was expressed by a number of participants for additional aquaculture science to better assess potential risks that aquaculture development can bring to environments including but not limited to: nutrient pollution, disease prevention/treatment/transfer, escapes, and genetic introgression.



Photo Credit: Luke Gardner; The Cultured Abalone Farm

Aquaculture Scenarios

The majority of the forum was centered around hypothetical scenario planning exercises, which were developed to prompt discussion on the interests of different stakeholders related to aquaculture development in California. Each scenario outlined a proposed hypothetical aquaculture development, and included details on the location, infrastructure, other existing ocean/land uses, and the nearby community. Each hypothetical scenario is included at the end of this summary document.

The scenarios included discussions regarding aquaculture of:

- 1) Shellfish**
- 2) Seaweed**
- 3) Finfish - Recirculating Aquaculture Systems**
- 4) Conservation Aquaculture**

Participants were split into two working groups, led by forum facilitators. This exercise created a space for attendees to share a wide range of perspectives, concerns, and interests related to aquaculture in California, fostering constructive conversations around what policy interventions and research could support stakeholder needs.

At the conclusion of the forum, the group gathered to summarize key points from the scenario exercises and other outstanding points from the working groups. Post event, forum organizers summarized participant responses, presented below. The summary includes a variety of opinions and concerns expressed from attendees, as well as recommendations for aquaculture practitioners, regulators, and research-funding organizations. The summary is not a consensus document of those viewpoints. It is the intention that this forum and summary document will be useful references for future aquaculture development and stakeholder engagement efforts in California.



Photo Credit: Luke Gardner; Long long Oyster in Humboldt Bay

Overarching themes

From the scenario exercises and subsequent discussions by participants, multiple, recurring, and overarching themes emerged irrespective of whether the proposed aquaculture activity involved shellfish, seaweed, recirculating aquaculture, or conservation aquaculture. These takeaways do not serve as a set of consensus recommendations, but rather provide a snapshot of stakeholder viewpoints, perceptions, and concerns surrounding aquaculture in California. These takeaways can be used to guide future engagement around aquaculture development.

The importance of Stakeholder engagement and spatial planning:

- Participants highlighted the importance of aquaculture development and businesses engaging local communities and ocean users, gaining support prior to beginning operations.
- Participants would like to see more general education and outreach around decision-making behind farm location and placement, as well as improved spatial planning, mapping, and zoning for farms.
- Participants generally agreed that by improving and refining the techniques used to zone farms, many issues that arise during operation could be addressed and potentially avoided early in the process.
- Participants generally agreed that site-specific analyses that examines cumulative impacts is important for future aquaculture development discussions

The importance of avoiding and buffering eelgrass and critical nursery zones:

Currently, NOAA protected division has oversight over these issues, which may or may not be sufficiently effective.

- Participants expressed repeated concerns around aquaculture effects to eelgrass habitat. Multiple participants questioned if there are any nearshore locations suitable for aquaculture in California that do not overlap with critical nursery zones or sensitive habitats.
- Participants stated the need for more research on aquaculture impacts on eelgrass and mudflat habitats, especially overtime. This could include advances in eelgrass mapping that prioritizes areas that are more prone to development.
- Participants noted that there is a capacity for aquaculture, specifically shellfish culturing, to coexist with these critical habitats. However, careful considerations need to be made when selecting gear, taking into account potential effects or tradeoffs to benthic habitats and shading to surrounding environments.

The importance of weighing the cumulative impacts of an operation versus the benefits:

Currently, these issues are addressed during CEQA, which may or may not be sufficiently effective.

- Participants expressed concern surrounding the culturing of non-native species and the potential for escape, causing feral populations. Many participants had preferences for the culturing of a native species over a non-native, even if the native is not as commercially viable or readily available on the market. Culturing of non-native species requires adequate research on potential environmental interactions.
- Participants noted concern over water quality issues caused by aquaculture operations, especially around whether these issues are compounding or if the issues can be mitigated, once discovered.
- Some participants expressed interest around the potential ecosystem services that farms could provide, including a reduction of harmful algal blooms and the offset of excess nutrients.
- Participants concluded that smaller, pilot-sized operations could be a good approach for assessing impacts versus benefits once underway.

The Importance of Ensuring Regulatory Compliance:

- Some participants agreed that offshore locations of farms may lead to less regulatory oversight, potentially resulting in an increase in negative interactions with marine wildlife, such as entanglements and ship strikes.
- Participants were especially concerned about the regulatory compliance of recirculating aquaculture operations. Participants felt that general knowledge surrounding recirculating aquaculture is lacking and many stakeholders are uninformed. Many participants expressed they were unfamiliar or uncertain with aspects such as:
 - What is the definition of recirculating aquaculture and what does it entail
 - How animal welfare will be addressed in these operations
 - Who decides on the standards and who is enforcing them

The importance of introducing policies and support for organizations engaging in aquaculture:

e.g conservation aquaculture and Tribal involvement

- Participants agreed that it is important for indigenous people to be in charge of operation and ownership, and that direct interactions between government entities and tribal nations needs to take place
- Participants noted that there is a need to have basic regulatory standards regardless of the purpose or intent of the project, and expressed multiple concerns around greenwashing
- Participants suggested regulatory guardrails be placed around restoration aquaculture to ensure project follow-through and retention of the operator's

permit. Some suggested that a commercial aspect could be blended with the goal of conservation as a means of funding the restoration work, others were concerned that restoration should not be used as a justification for commercial aquaculture

- Some participants suggested that there would be greater support for restoration aquaculture if it were completed separate from commercial aquaculture

Creation/implementation of mitigation plans for potential impacts of aquaculture activities:

- Some participants expressed concern of the potential for entanglements of marine life in aquaculture farm gear
- Potential for gear contributing to marine debris, and thus, suggested tagging gear for better accountability, need for liability and farm-bonded insurance, and tracking of lost gear
- Some participants were concerned with the escapement of cultured animals resulting in feral populations
- Many were concerned with water quality, disease factors, habitat impacts, predator attraction, change in patterns of species migration, and surrounding environment being negatively impacted by operations
- Participants stated the importance of a governing body (not the farm itself) that upholds and enforces regulations and mitigation plans.



Photo Credit: Monterey Bay Seaweeds

Hypothetical Scenarios for Discussion

****Scenarios do not include participant responses from participating NGOs****

An introduction to each of the scenarios were presented; all of the following questions were presented to the participants for each of the four scenarios:

- What are the anticipated benefits or impacts of the project? How do these relate to environmental, economic, or social opportunities or concerns?
- How would you recommend your permit applicant best engage stakeholders throughout project development and operation to gain and foster the trust of community members?
- Does the project have any gaps or areas of concern for regulatory oversight?
- What other guidance do you have for the company as the planning process unfolds?



Photo Credit: Ava Salmi; Cultured juvenile Olympia Oysters

Scenario 1: Shellfish

Introduction

Aquaculture has the potential to enhance food, economics, and the environment sustainably, helping to meet food production needs in a climate-changing future by adding diversity and resilience to the sector. However, development needs to be scaled intentionally to maximize local-level social equity and protection of the surrounding ecosystem.

Keeping this balance in mind, you and your group members are participating in a multi-stakeholder advisory panel, providing input to an aquaculture company proposing the development of a new shellfish farm. The project is still in its beginning stages, and the company has not yet applied for permit applications. The company hopes that by approaching the advisory panel, they will receive community input early, gaining insight on the following questions.

Company Overview

Swell Sea Farms is a US-based company with 20 employees: marine and environmental scientists, aquaculture specialists, and an administrative team. The company is applying for its first collective lease and permit; however, as a whole, they have decades of practical experience. The company is interested in starting an oyster farm and seeks community stakeholder input to help them make some initial, critical decisions. For each decision, please consider both options, the associated benefits or impacts each carries, and the time scale at which the benefit or impact would be felt (short or long-term).

Project Overview

The company seeks input on:

1. Farm size: small (5 acres) vs. large (15 acres)
2. Farm location: nearshore vs. offshore
3. Species: non-native (Pacific oyster, *Crassostrea gigas*) vs. native (Olympia oyster, *Ostrea lurida*)
4. Lease length: pilot (5 years) vs. long-term (15 years)

Project details and infrastructure

- Proposed nearshore and offshore farm infrastructure
- 90m longlines of floating oyster bags (30 lines for small-size farm, 95 lines for large-size farm)
- Floating buoys will be suspended at either end of each line, and the ends of each rope will be anchored to the bottom substrate.
- Estimated yield: small-size farm - 900,000 market-size oysters/year, large-size farm - 2,850,000 market-size oysters/year
- Initial broodstock will come from a reputable hatchery in the region.
- The farm's purpose is primarily to produce food for US consumers sustainably.

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- The company also believes the farm will help to improve water quality in the area, providing ecosystem services to the surrounding environment.

Proposed Farm Location

Environmental and Ecological Parameters

- Distance from coast - nearshore: 0.4 km from shoreline; offshore: 7 km from shoreline.
- Depth and substrate type - nearshore: mean depth is 4m, substrate is 95-98% mud-like (silt); offshore: mean depth is 40m, substrate is 85% sand and 15% gravel.
- Ocean current - Ocean current speeds in both locations rarely exceed 1.5 m/s.
- Water quality - nearshore: The area sometimes suffers from harmful algal blooms, which are thought to be a result of nutrient runoff from nearby agricultural farms; offshore: no known or measured water quality issues.
- The proposed nearshore location serves as a critical habitat for seabirds, migratory waterfowl, plants, and nursery fishes.
- The proposed offshore location sees interactions with migratory whales, coastal migratory pelagic fishes, and other marine mammals.

Nearby Community

- Port City with an estimated population of 30,000.
- A rich history as a working waterfront town, with generations of people employed in ocean-related industries.
- The area is also economically driven by tourism and manufacturing.
- Commercial and recreational fishermen regularly operate adjacent to both proposed locations.
- Fisheries and fisher jobs have been declining for many years.



Photo Credit: Monterey Bay Seaweeds

Scenario 2: Seaweed

Introduction

Aquaculture has the potential to enhance food, economics, and the environment sustainably, helping to meet food production needs in a climate-changing future by adding diversity and resilience to the sector. However, development needs to be scaled intentionally to maximize local-level social equity and protection of the surrounding ecosystem.

Keeping this balance in mind, you and your group members are participating in a multi-stakeholder advisory panel, providing input to an aquaculture company proposing the development of a new seaweed farm. The project is still in its beginning stages, and the company has not yet filed permit applications. The company hopes that by approaching the advisory panel, they will receive community input early, gaining insight on the following questions.

Company Overview

Shell Sea Farms is a US-based company with 20 employees: marine and environmental scientists, aquaculture specialists, and an administrative team. The company is applying for its first collective lease and permit; however, as a whole, they have decades of practical

experience. The company is interested in starting a seaweed farm and seeks community stakeholder input to help them make some initial, critical decisions. For each decision, please consider both options, the associated benefits or impacts each carries, and the time scale at which the benefit or impact would be felt (short or long-term).

Project Overview

The company seeks input on:

1. Farm size: small (5 acres) vs. large (15 acres)
2. Farm location: nearshore vs. offshore
3. Species: non-native (Sugar kelp - *Saccharina latissima*) vs. native (Ribbon kelp - *Alaria marginata*)
4. Lease length: pilot (5 years) vs. long-term (15 years)

Project details and infrastructure

- Proposed nearshore and offshore farm infrastructure
- 90m longlines for seaweed cultivation (30 lines for small farm, 95 lines for large farm)
- Floating buoys will be suspended at either end of each line, as well as every 2-3m, and the ends of each rope will be anchored to the bottom substrate.
- Estimated yield: Small farm - 3,200 lbs wet weight, Large farm - 9,600 lbs wet weight
- Seaweed seed will be sourced from a Norwegian supplier.
- The purpose of the farm is primarily to sustainably produce food for local restaurants, markets, and distribution.
- The company also believes the farm will provide ecosystem services to the surrounding environment, such as habitat creation, oxygenating water, balancing pH, and reducing wave energy. It also has the potential to improve water quality, especially during harmful algae blooms.

Proposed Farm Location

Environmental and Ecological Parameters

- Distance from coast - nearshore: 1.0 km from shoreline; offshore: 7 km from shoreline
- Depth and substrate type - nearshore: mean depth is 4m, substrate is 95-98% mud-like (silt); offshore: mean depth is 40m, substrate is 85% sand and 15% gravel
- Ocean current - ocean current speeds in both locations rarely exceed 1.5 m/s
- Water quality - nearshore: The area sometimes suffers from harmful algal blooms, which are thought to be a result of nutrient runoff from nearby agricultural farms; offshore: no known or measured water quality issues
- The proposed nearshore location serves as a critical habitat for seabirds, migratory waterfowl, plants, and nursery fishes.
- The proposed offshore location sees interactions with migratory whales, coastal migratory pelagic fishes, and other marine mammals.

Nearby Community

- Port City, estimated population of 30,000
- A rich history as a working waterfront town, with generations of people employed in ocean-related industries.
- The area is also economically driven by tourism and manufacturing
- Commercial and recreational fishermen regularly operate adjacent to both proposed locations
- Fisheries and fisher jobs have been declining for many years.



Photo Credit: Luke Gardner; Carlsbad Aquafarm

Scenario 3: Recirculating Finfish

Introduction

Aquaculture has the potential to enhance food, economics, and the environment sustainably, helping to meet food production needs in a climate-changing future by adding diversity and resilience to the sector. However, development needs to be scaled intentionally to maximize local-level social equity and protection of the surrounding ecosystem.

Keeping this balance in mind, you and your group members are participating in a multi-stakeholder advisory panel, providing input to an aquaculture company proposing

the development of a new shellfish farm. The project is still in its beginning stages, and the company has not yet filed permit applications. The company hopes that by approaching the advisory panel, they will receive community input early, gaining insight on the following questions.

Company Overview

Clear Blue AquaFarms is a US-based company with 100 employees: marine and environmental scientists, aquaculture specialists, and an administrative team. It was established five years ago; however, staff have decades of practical experience. The company is interested in starting a land-based, recirculating marine finfish farm and is seeking community stakeholder input to help them make some initial, critical decisions. For each decision, please consider both options, the associated benefits or impacts each carries, as well as the time scale at which the benefit or impact would be felt (short or long-term)

Project Overview

The farm will utilize an established bayfront warehouse, which is located approximately 1,000 ft from the shoreline. The development will also include three supplemental buildings, with a total footprint of 5 acres, or 217,800 square feet, and a 4.8-megawatt solar panel array, which will be mounted on building rooftops. The height of the tallest proposed building will be 50 feet. The facility will have an approximate annual production capacity of 7,000 metric tons of fish. The proposed project will follow Global Aquaculture Alliance's Best Aquaculture Practices (BAP), a third-party certification program encompassing the entire production chain, including processing, farm, hatchery, and feed mill operations. BAP has four pillars of sustainability that must be met to obtain certification - environmental responsibility, animal health and welfare, food safety, and social accountability. Each application is reviewed through an extensive and inclusive evaluation process that includes public comment and an oversight committee. The company is requesting a Coastal Development Permit and Special Permit for five years, with the option to extend based on performance during the initial term.

Project details and infrastructure

The company is considering two finfish species options for the operation. They would like to consider stakeholder thoughts for the final decision.

- Yellowtail kingfish (*Seriola lalandi*) or Atlantic salmon (*Salmo salar*)
- Fish will be fed a low fishmeal/fish oil inclusion diet.

The project will require approximately 1.0 (MGD) of municipal freshwater. About 5.5 MGD of salt water will be required daily and supplied via renovated, pre-existing intake pipes. The system has a recirculation rate of 98% (degree of system volume recycled one time/hour). Treated wastewater will be discharged using an existing ocean outfall pipe extending one mile offshore. Removed solids from wastewater will be mechanically

dewatered and used as fertilizer and soil improvement in partnership with local agricultural farms. An estimated 6.5 MGD is expected to be released offshore daily, outside the bay. It is important to note that wastewater discharge of this amount is regulated and permitted by the local Regional Water Quality Control Board.

The proposed facility will include:

- Hatchery operation, where eggs are hatched, and fish fry grow to juvenile size
- The grow-out operation, where juveniles are grown to market size
- On-site processing facility
- Oxygen generation plant/liquid oxygen storage
- Water intake treatment
- Advanced wastewater treatment to remove solids and treat discharge water - Buffer tanks, Moving Bed Biofilm Reactor, membrane bioreactor, and UV sterilization
- Backup systems
- Administrative building

The purpose of the farm is primarily to provide a sustainably farmed, domestically processed, premium fish product to US markets.

Proposed Farm Location

The farm is being proposed on a bayfront plot of land previously utilized for other industrial purposes. From that operation, ample warehouse space remains, along with the saltwater and freshwater intakes and the discharge line. Infrastructure will be updated and modernized to ensure all safeguards are in place before the start of operations.

Nearby Community

- Located in a bustling urban port and surrounded by a metropolitan area with a population of over 3.2 million people.
- The port encompasses over 30 miles of local waterfront. It has historic impacts on the regional economy, generating \$3.0 billion annually from cruise and cargo ships, commercial fishing vessels, and a newly emerging Blue Economy Incubator.
- The area also supports more than 30,000 jobs, encompassing the maritime industry, commercial enterprises, and tourism.



Photo Credit: Luke Gardner; Urchin Ranching

Scenario 4: Conservation Aquaculture

Introduction

California has and will continue to see aquaculture projects evolving beyond the sole purpose of food production. One example of this is conservation aquaculture, where projects work to restore native species and ecosystems while providing Native nations access to traditional foods and cultural practices.

You and your group members are participating in a multi-stakeholder advisory panel to provide input to an aquaculture company and a Native nation partnering on a conservation aquaculture project. The project is still in its beginning stages, and they still need to file permit applications. They hope that by approaching the advisory panel, they will receive community input early, gaining insight on the following questions.

Company Overview

California Abalone Co. is a US-based company with 50 employees that has grown and distributed red abalone (*Haliotis rufescens*) for food distribution for over 30 years. Their operations occur in land-based, flow-through tanks supplied with ambient seawater from an on-site intake pipeline. The company has become more involved in research and

conservation aquaculture projects in the past decade, partnering with local universities, researchers, and government agencies.

Project Overview

Seven years ago, a Native nation of Indigenous peoples from Northern California re-acquired 600 acres of ancestral lands adjacent to California Abalone Co. operations. This land area represents a small fraction of the ancestral coastal territory and unceded land that was once inhabited and stewarded by the Native nation prior to their forced removal. Red abalone from the area historically served as a staple and a highly culturally significant food. Access to legal harvesting of wild red abalone has been prohibited since 2017, when a moratorium was placed on the fishery due to increased mortality of populations, most likely due to environmental stressors. This closure has further severed Tribal members' access to an important food source.

California Abalone Co. and the Native nation are coming together in partnership to request permits for a proposed aquaculture facility on a portion of the re-acquired land that will serve to culture red abalone for Native nation food and cultural traditions, commercial and economic opportunities for the Tribe, as well as wild population re-stocking and conservation efforts. 80% of the cultured abalone will account for food and economic opportunities, while 20% will be destined for repopulation.

Project Details, Infrastructure, and Location

The proposed infrastructure for the project is as follows:

- All hatchery operations will occur at California Abalone Co.
- Members from the Native nation will be trained in hatchery operations and will assist in husbandry and rearing.
- 10 x 1,000-gallon raceway tanks will be plumbed and installed onto a portion of the re-acquired land closest to California Abalone Co operations. They will serve as grow-out tanks for juveniles and adults and tumble culture for seaweeds to feed the abalone.
- A new seawater intake, pumphouse, filtration system, and main plumbing lines will be built and installed for the raceway tanks on the re-acquired land.
- Abalone broodstock will be sourced from the wild with appropriate permits and kept in separate areas of both farms to not mix genetic pools with the cultured abalone from California Abalone Co.

Nearby Community

- The region where California Abalone Co and the proposed project will occur is generally known for its fertile farming and deep agricultural history.
- The population of the region is 60,000 people.
- Adjacent to the region's boundaries lie a major university and airport, as well as a larger city with a population of 80,000 people, many of whom commute into the area for work.



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