

# Status of Aquaculture in U.S. Federal Waters and NOAA's NEPA Role for Federal Waters Aquaculture Projects

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# NOAA Aquaculture Program



## NOAA Aquaculture Program

### NOAA Fisheries

*[fisheries.noaa.gov](http://fisheries.noaa.gov)*

- » policy/regulatory
- » aquaculture outreach
- » science for sound aquaculture development

### Sea Grant

*[seagrant.noaa.gov](http://seagrant.noaa.gov)*

- » external grants
- » extension and education for coastal and Great Lakes aquaculture

### National Centers for Coastal Ocean Science

*[coastalscience.noaa.gov](http://coastalscience.noaa.gov)*

- » spatial planning and siting
- » ecosystem services
- » environmental monitoring and modeling



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# NOAA Fisheries- Regional Aquaculture Coordinators

## Regional Aquaculture Coordinators

Got questions about aquaculture in your area? Contact one of our regional aquaculture coordinators.

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### PACIFIC ISLANDS

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Works within NOAA and with partner federal, state, and local agencies, industry, and members of the scientific, academic, and NGO communities on a variety of marine aquaculture issues

POC for aquaculture issues within regional offices

Coordinates with NMFS Science Centers on aquaculture science planning and communications

Leads or participates in NOAA and interagency aquaculture working groups within regions



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# EO 12391: Aquaculture Opportunity Areas



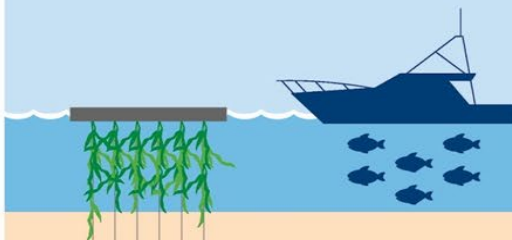
## What is an Aquaculture Opportunity Area?

**Aquaculture Opportunity Areas** show high potential for commercial aquaculture. A science and community-based approach to identifying these areas helps minimize interference with other enterprises, account for current fishing patterns, and protect the ecosystem.

AOAs will expand economic opportunities in coastal and rural areas, and increase our nation's seafood security.

AOAs use the best available science to find appropriate spaces for sustainable aquaculture.

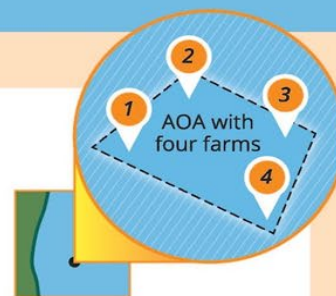
AOAs minimize interactions with other users, such as shipping, fishing, and the military.



### Assessment and Use of AOAs

Stakeholder input is essential in the design and location of AOAs and NOAA expects these areas will be shaped through a public process that allows constituents to share their community and stewardship goals, as well as critical insights.

AOA size, exact location, and farm types will be determined through spatial analysis and public input to expand sustainable domestic seafood production while minimizing potential user conflicts. Farms will still need to go through the permitting process and environmental reviews.



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# Aquaculture Opportunity Areas Timeline

June 2020



Now: March, 2022

Coming soon!

## Task:

Selected Gulf of Mexico and Southern CA as first two regions

Q&A, National and Regional rollouts; presentations & outreach

NCCOS data collection and modeling for siting analysis

RFI in October 2020; 5 listening sessions (3 national, 2 regional)

NCCOS draft Aquaculture Opportunity Atlas; peer review

Gulf of Mexico and Southern CA Atlases published (**New!**)

Consider selection of additional region(s), (**Selection is Resource Dependant**)

Combine public input, results of Atlas, and other information to identify preliminary NEPA alternatives

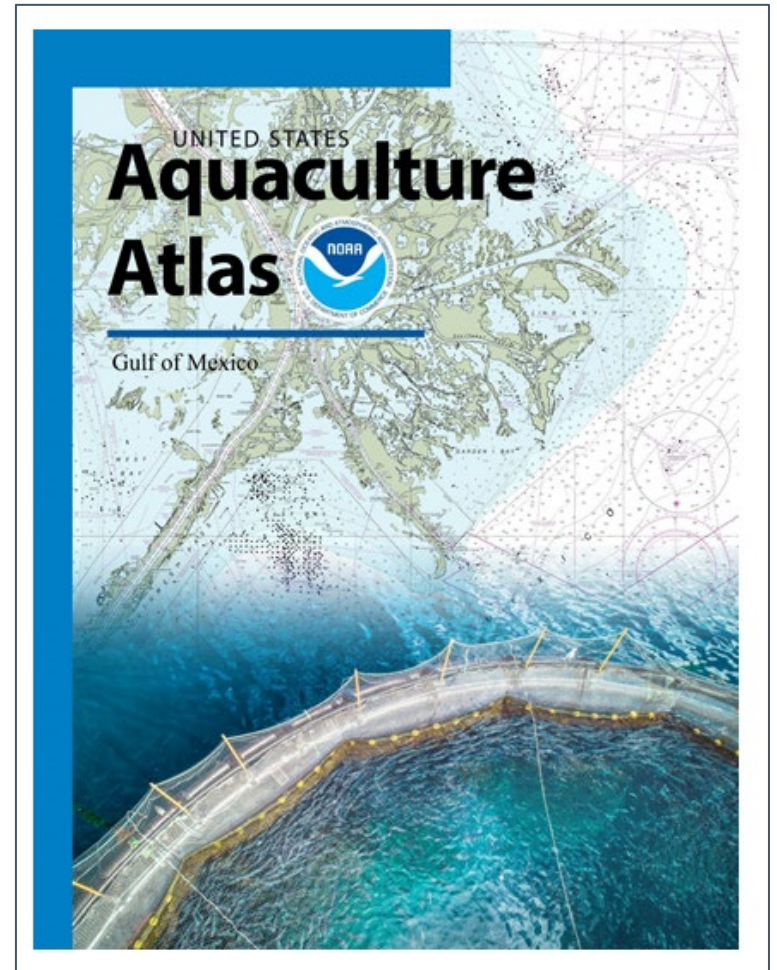
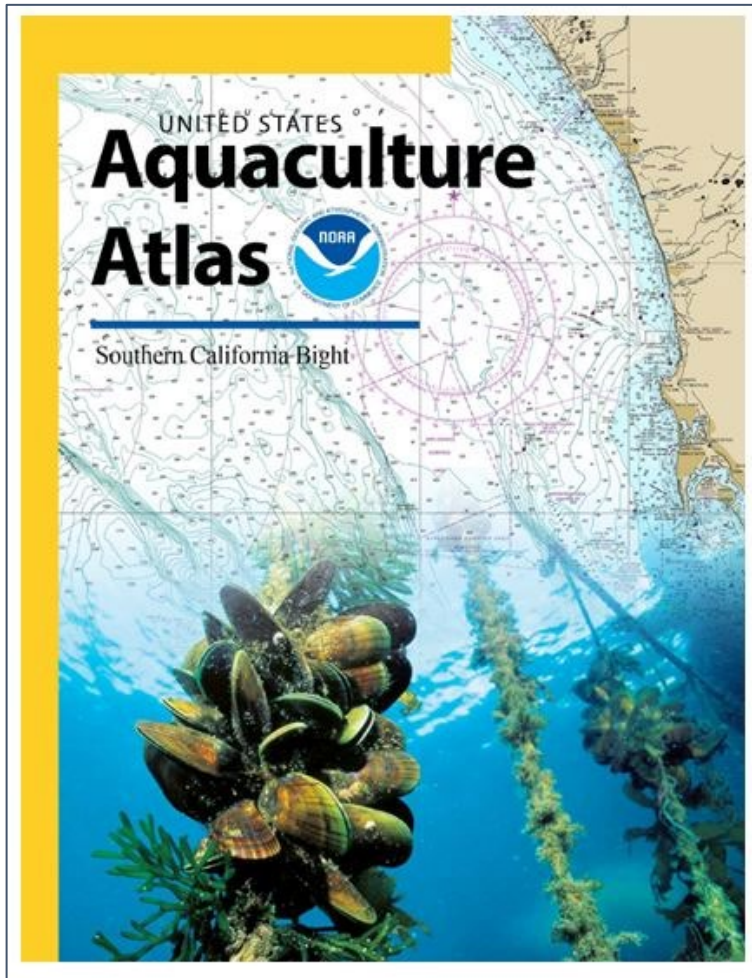
NOI to prepare PEIS, with preliminary AOA alternatives to consider

Begin stakeholder outreach and coordination in third region; RFI (**Timing is Resource Dependant**)

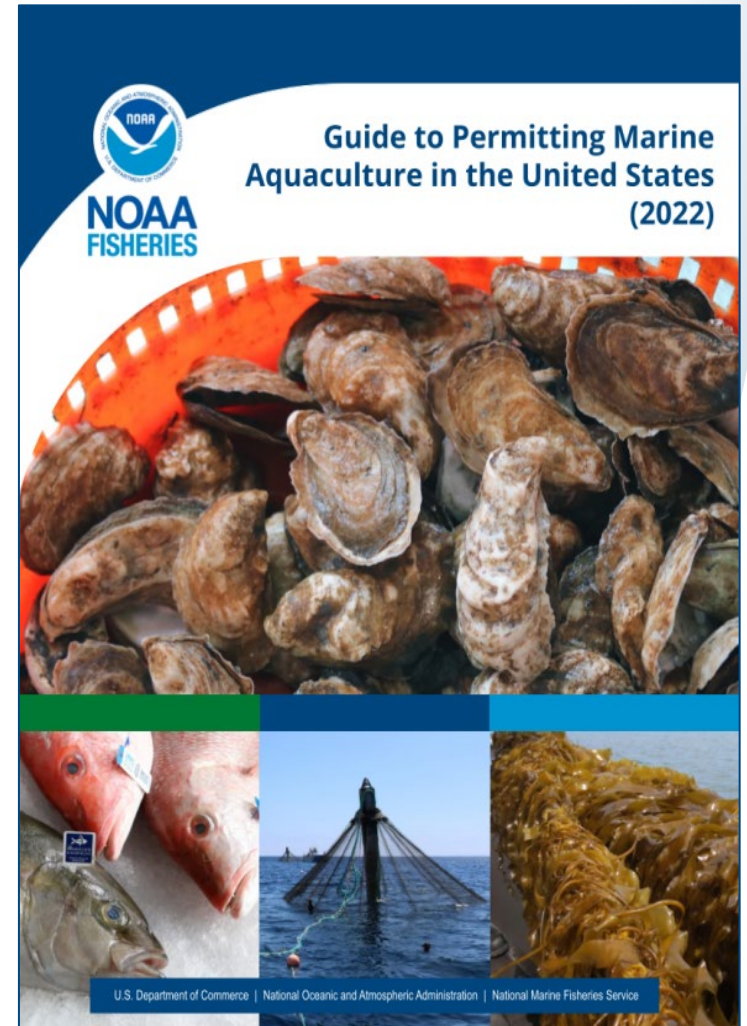
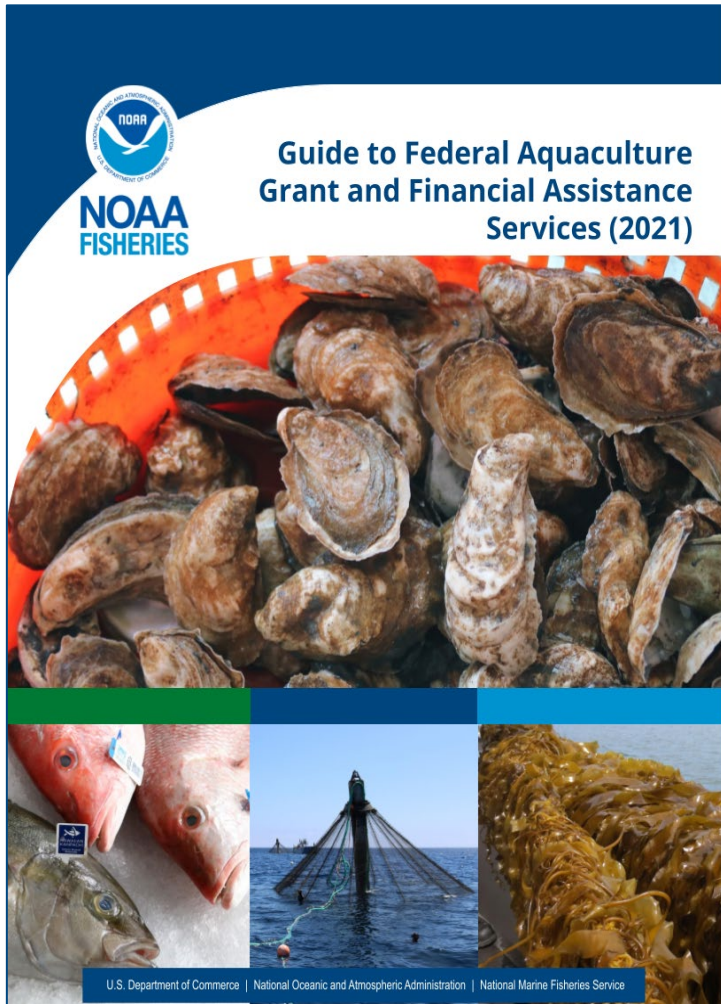




# Aquaculture Opportunity Area Atlases



# EO 12391: Improving Regulatory Transparency for Aquaculture



# Federal Permit/Authorization Requirements

**Table 1. Primary Federal Permits Required for Aquaculture Operations<sup>1</sup>**

| Permit   | Jurisdictional Waters   | Agency  | Statutes & Authorities   | Facilities Required to Obtain Coverage   | Application Form(s)   |
|--|---|---|--|--|---|
| Section 10 Permit or Verification <sup>2</sup>                 | Navigable waters, including outer continental shelf   | U.S. Army Corps of Engineers (USACE)  | Section 10 of the Rivers and Harbors Act of 1899 and the Outer Continental Shelf Lands Act                       | Required in navigable waters of the U.S. to protect navigation for commerce  | ENG Form 4345   |
| Section 404 Permit or Verification <sup>2</sup>                | Waters of the United States   | U.S. Army Corps of Engineers (USACE)  | Section 404 of the Clean Water Act (CWA)   | Required for discharges of dredged or fill material into waters of the United States   | ENG Form 4345 or ENG 6082 - Nationwide Permit Pre-Construction Notification   |
| NPDES Permit   | Federal waters <sup>3</sup> ; state waters in MA, NH, NM; all territorial waters except VI; Tribal waters; DC. State or territorial waters except MA, NH, NM, and VI. | U.S. Environmental Protection Agency (EPA). <a href="#">State/territorial agency</a> authorized to implement the NPDES program. | Sections 402 and 403 of the Clean Water Act (CWA). In addition to CWA requirements, state regulations may apply. | Required for the discharge of pollutants to waters of the U.S. If the operation will add feed, nutrients, pharmaceuticals, antifouling agents, disinfectants, or any other substances or materials directly to, or that will be discharged to waters of the U.S., permit coverage is required. | National Pollutant Discharge Elimination System (NPDES) <a href="#">Permit Application Forms 1 and 2B</a> . If a relevant General Permit is in effect, a Notice of Intent (NOI) form should be used. State programs often have their own application form(s) or NOIs. |
| Magnuson-Stevens Fishery Conservation and Management Act (MSA) | Federal waters  | NOAA Fisheries  | Magnuson-Stevens Fishery Conservation and Management Act (MSA)   | Activities and operations related to the catching, taking, or harvesting of MSA managed species.   | Should be verified with the applicable NOAA Fisheries regional office.  |

<sup>1</sup> This list is neither exhaustive nor inclusive, but is meant to reflect what a typical applicant for an aquaculture operation in federal waters would require. For example, a permit may be required under the National Marine Sanctuaries Act when an individual wishes to conduct an activity within or into a sanctuary that is otherwise prohibited; however that's not a typical location to site an operation.

**Table 2A. Federal Authorizations and Reviews Required for Aquaculture Operations**

| Agency  | Statutes & Authorities  | Purpose  | Application Process  | Form of Authorization                               |
|---|---|--|--|---|
| U.S. Coast Guard (USCG)   | 33 U.S.C. 1221 <i>et seq</i> ; 33 CFR Part 66                       | Ensure safe navigation; authorize private aids to navigation   | Private Aids to Navigation application form CG-2554            | Formal authorization from appropriate USCG district |
| U.S. Department of Agriculture Animal and Plant Health Inspection Service Veterinary Services (USDA APHIS VS) | Animal Health Protection Act (AHPA) (7 USC Sections 8322 and 10401) | Authority over the prevention, detection, control, and eradication of animal diseases, including aquaculture | <a href="#">National Aquaculture Health Plan and Standards</a> | Consultation only                                   |
| DoD; Military Aviation and Installation Assurance Siting Clearinghouse  | 32 CFR Part 211   | Minimize conflicts with military readiness operations  | Initiated through the <a href="#">Clearinghouse website</a>    | Consultation only                                   |

**Table 2B. Additional Authorizations for Aquaculture Operations Co-located with OCS Oil and Gas Facilities**

| Agencies  | Statutes & Authorities   | Purpose  | Application Process  | Form of Authorization  |
|---|--|--|--|--|
| Bureau of Ocean Energy Mgmt. (BOEM)                   | Outer Continental Shelf Lands Act; Energy Policy Act of 2005; 30 CFR Parts 500-599 | Required for any offshore aquaculture operations that utilize or tether to existing oil/gas facilities | Right of Use and Easement (RUE) for Energy and Marine-related Activities Using Existing Outer Continental Shelf (OCS) Facilities | A formal RUE is established using the facility for the purpose of aquaculture. |
| Bureau of Safety and Environmental Enforcement (BSEE) | Outer Continental Shelf Lands Act; Energy Policy Act of 2005; 30 CFR Parts 500-599 | Required for any offshore aquaculture operations that utilize or tether to existing oil/gas facilities | —  | Consultation only.   |





# Federal Consultation and Review Requirements

Table 3. Required Federal Consultations and Reviews

| Consultation or Review             | Description of the Requirement   |
|------------------------------------|--|
| Endangered Species Act             | Section 7(a)(2) of the Endangered Species Act (ESA) requires federal agencies to consult with, as applicable, the NOAA National Marine Fisheries Service (NOAA Fisheries), the U.S. Fish and Wildlife Service, or both, before taking any action that may affect an endangered or threatened species or designated critical habitat to ensure their actions are not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Formal and informal consultation is a cooperative process involving the Services and Federal action agencies, as well as applicants, in considering the effects of a proposed action on listed species and/or designated critical habitat and measures to avoid and minimize these effects.  |
| Essential Fish Habitat             | The essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) require federal agencies to consult with NOAA Fisheries when activities they authorize, fund, or undertake, or propose to authorize, fund, or undertake, may adversely affect EFH. The consultation process results in NOAA's preparation and transmittal of conservation recommendations, which may be adopted by the permitting agency. The permitting agency is required to provide a written response that describes measures proposed to avoid, mitigate, or offset the impact of activities on EFH and, if applicable, explain reasons why it is not following conservation recommendations.   |
| National Environmental Policy Act  | The National Environmental Policy Act (NEPA) requires federal agencies to prepare an Environmental Impact Statement (EIS) for any major federal action significantly affecting the quality of the human environment. An Environmental Assessment (EA) may be prepared to assist the permitting agency in determining whether significant environmental impacts are likely to occur. The EIS or EA requirement does not apply if the permitting agency determines the activity is categorically excluded from NEPA review.  |
| Marine Mammal Protection Act       | The Marine Mammal Protection Act (MMPA) prohibits the "taking," which includes harassing, hunting, capturing or killing, of marine mammals or attempting to do so. The MMPA includes several exceptions to the take prohibition, including for incidental (unintentional) take during specific activities. Section 118 of the MMPA addresses incidental take during commercial fishing operations and authorizes incidental take of marine mammals during commercial fishery operations. Fishermen (e.g., including those operating aquaculture facilities) engaging in a Category I or II fishery must obtain a Marine Mammal Authorization Program certificate from NOAA Fisheries; fishermen engaging in a Category I, II, or III fishery must report incidental death or injury of marine mammals that results from commercial fishing operations (including aquaculture) within 48 hours. Fishery categories are published in the annually reviewed and revised MMPA List of Fisheries (LOF), which is available on the NOAA Fisheries website and in the Federal Register. |
| Fish and Wildlife Coordination Act | The Fish and Wildlife Coordination Act requires any federal agency issuing a permit to consult with the U.S. Fish and Wildlife Service and NOAA Fisheries, as applicable, if the proposed aquaculture activities could potentially harm fish and/or wildlife resources. These consultations may result in project modification and/or the incorporation of measures to reduce these effects.   |

|   |  |
|---|--|
| National Historic Preservation Act                      | Section 106 of the National Historic Preservation Act (NHPA) requires any federal agency issuing a permit to account for potential effects of the proposed aquaculture activity on historic properties, e.g., shipwrecks, prehistoric sites, and cultural resources. If a proposed aquaculture activity has the potential to affect historic properties, these details must be provided by the applicant as part of the application package. The consultation process may result in an agreement that requires the permitting agency to implement mitigation measures.   |
| Coastal Zone Management Act                             | The Coastal Zone Management Act of 1972 (CZMA) encourages coastal states to develop and implement coastal zone management plans as a basis for protecting, restoring, and establishing a responsibility in preserving and developing the nation's coastal communities and resources. Coastal states with an approved coastal zone management program are authorized to review certain federal actions affecting the land or water uses or natural resources of its coastal zone for consistency with its program. The CZMA requires federal agency activities to be consistent to the maximum extent practicable with the enforceable policies of a state's approved coastal zone management program. Under the CZMA, a state may review activities conducted by, or on behalf of, a federal government agency within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone; or an application for a federal license or permit. |
| National Aquaculture Health Plan and Standards (NAHP&S) | The NAHP&S establishes guidance for national disease reporting, laboratory and testing standardization, surveillance, response, biosecurity, data management, and education and training, which will benefit and protect the health of the nation's aquaculture operations.  |
| National Marine Sanctuary Resources Act                 | Section 304(d) of the National Marine Sanctuaries Act (NMSA) requires any federal agency issuing permits to consult with NOAA's <a href="#">National Marine Sanctuary Program</a> (NMSP) if the proposed aquaculture activity is likely to destroy, cause the loss of, or injure sanctuary resources. As part of the consultation process, the NMSP can recommend reasonable and prudent alternatives. While such recommendations may be voluntary, if they are not followed and sanctuary resources are destroyed, lost, or injured in the course of the action, the NMSA requires the federal action agency(ies) issuing the permit(s) to promptly prevent and mitigate further damage, and restore or replace the damaged resources in a manner approved by NOAA.   |

NMFS GARFO recently released [Endangered Species Act Information Needs for Aquaculture Projects in the U.S. Atlantic](#) - This document is designed to aid federal action agencies developing Biological Assessments (BA) to analyze the potential effects of proposed aquaculture activities on listed species and designated critical habitat, as required by section 7 of the Endangered Species Act (ESA), in NMFS' Greater Atlantic Region (GAR).



# EO 12391: Removing Barriers to Aquaculture Permitting

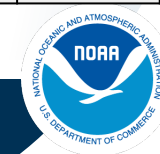
- NOAA is designated as the Lead Agency for NEPA when a project:
  - Requires environmental review or authorization by two or more agencies,
  - Requires an environmental impact statement (EIS), and
  - Is located outside of the waters of any State or Territory and within the exclusive economic zone of the United States
- This is consistent with CEQ regulations that allow for the designation of a “Lead Agency” for NEPA based on the agency having special expertise in the subject matter regardless of their permitting role on the project



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# Status of Federal Waters Aquaculture Projects

| Project Name  | Proposed/Permitted Location    | Proposed/Permitted Species (subject to change) | Proposed/Permitted Site/Gear (at full build out)   | Project Type        | Federal Agency Permits Required*  | Lead Agency for NEPA | Permitting Status                               |
|---|--------------------------------|--|--|---------------------|---|----------------------|---|
| Blue Water Fisheries LLC  | ~10 miles off Newburyport, MA  | Steelhead Trout, Atlantic Salmon, Lumpfish     | 40 submersible pens on two 250-acre permitted sites  | Commercial          | RHA Section 10 permit from ACOE, CWA NPDES permit from EPA, MSA authorization from NMFS | NMFS                 | Permit Applications Submitted/ NEPA Pre-Scoping |
| Salem State University/Northeast Massachusetts Aquaculture Center | ~8.5 miles off Rockport, MA    | Blue Mussels                                   | Currently 3 submerged "backbone" lines, proposed 20 submerged "backbone" lines on a 30 acre permitted site | Research/Commercial | RHA Section 10 permit from USACE  | USACE                | Permit Applications Submitted                   |
| Running Tide LLC  | ~65 miles off Newburyport, MA  | Sugar Kelp                                     | 30 vertical anchored lines   | Research            | RHA Section 10 permit from USACE  | USACE                | Permit Applications Submitted                   |
| Ocean Rainforest  | ~5 miles off Santa Barbara, CA | Giant Kelp                                     | 4 submerged "backbone" lines on a 86-acre permitted area   | Pilot               | RHA Section 10 permit from USACE  | USACE                | Permit Issued                                   |
| Pacific Ocean Aquafarm  | ~4 miles off San Diego, CA     | Yellowtail, White Sea Bass                     | 28 submersible pens on a 323 acre permitted site   | Commercial          | RHA Section 10 permit from ACOE, CWA NPDES permit from EPA                              | NMFS                 | Permit Applications Submitted/ NEPA Scoping     |
| Ocean Era (Valella Epsilon)                                       | ~45 miles off Sarasota, FL     | Almaco Jack, Kampachi                          | 1 submersible pen  | Commercial          | RHA Section 10 permit from ACOE, CWA NPDES permit from EPA                              | EPA                  | EPA Permit Under EAB Review, USACE Pending      |

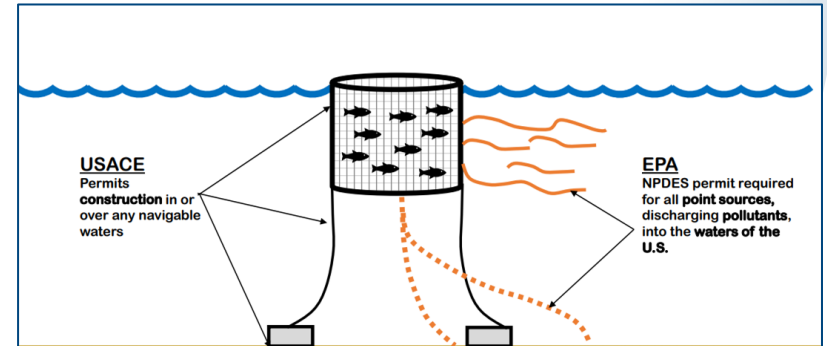
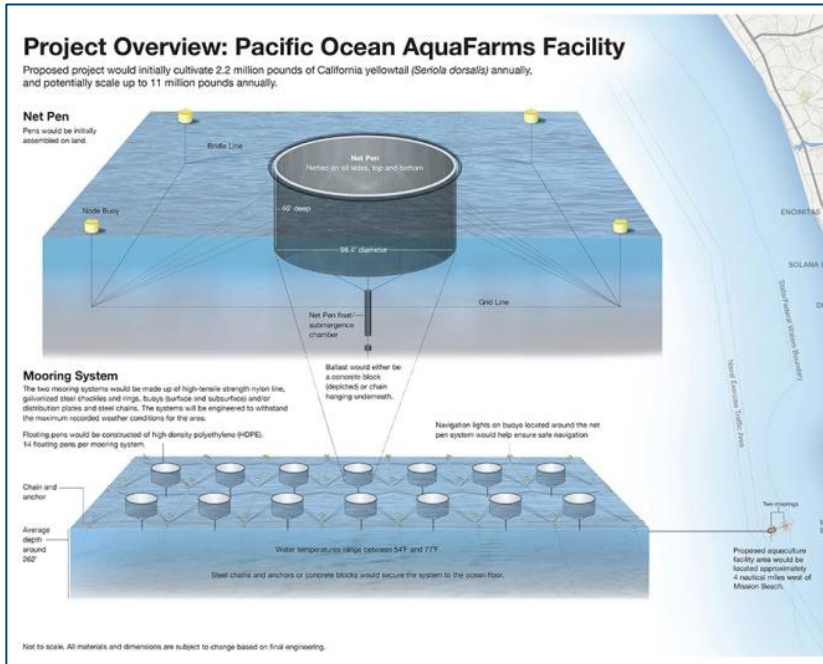


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# Pacific Ocean Aquafarms- Case Study

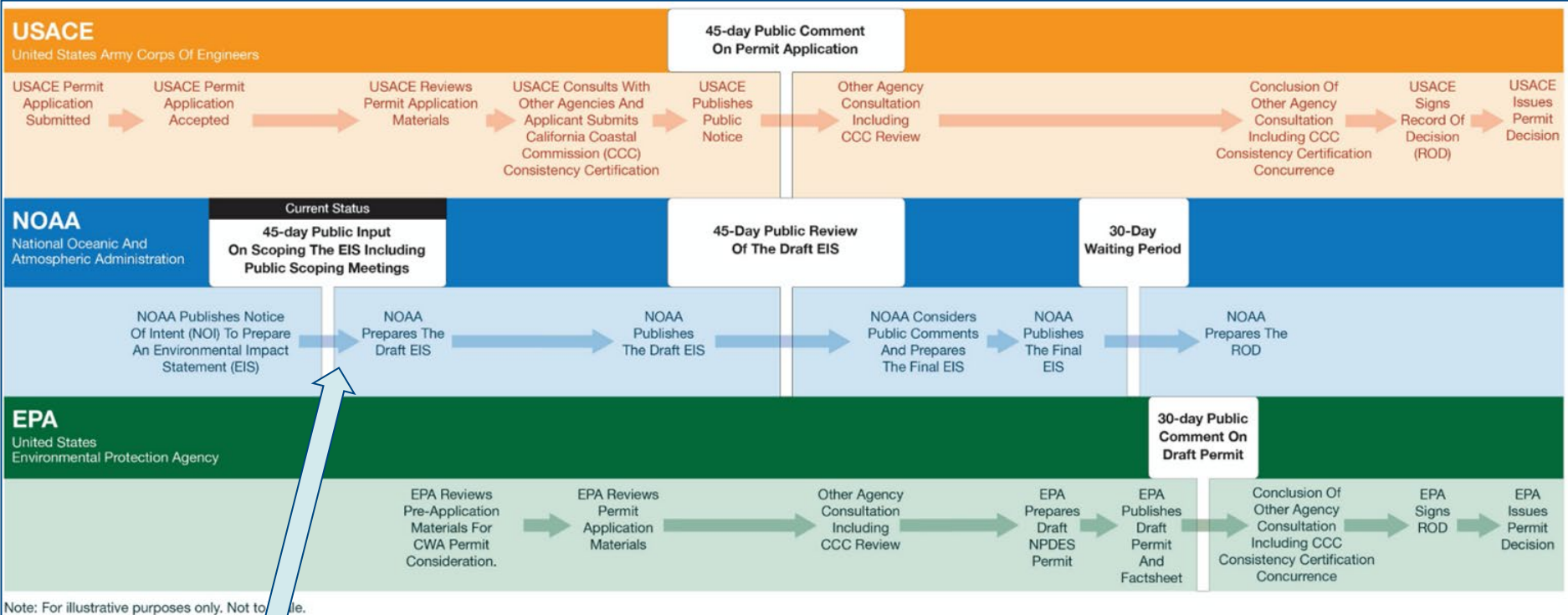
The Pacific Ocean AquaFarm's proposed project would consist of construction, operation, and maintenance of an offshore marine finfish aquaculture facility composed of submersible net pens. Initial production is projected to produce 2.2 million pounds (1,000 metric tons) annually growing up to 11 million pounds (5,000 metric tons) after environmental monitoring confirms that each successive scale of expansion has not resulted in any substantial environmental or space-use impacts. California yellowtail (*Seriola dorsalis*) would be the initial farmed species.

The proposal will require federal permits and authorizations including applicable permits under Section 402 of the Clean Water Act from EPA and Section 10 of the Rivers and Harbor Act from USACE.



# Pacific Ocean Aquafarms- Case Study

NMFS will serve as the “Lead Agency,” due to having project specific expertise, and the EPA and USACE will serve as “Cooperating Agencies” for the purposes of preparing a draft EIS and final EIS for the project. The EIS will evaluate the environmental impacts of the proposed project and issuance of the respective permits.



You Are Here



## Project Overview

| Preliminary Project Alternatives For Consideration<br><b>Feature</b> | San Diego Alternative                   | Long Beach Alternative                   | Half-Scale Alternative                        | Alternative of No Action |
|--|---|--|---|--------------------------|
| Location   | ~4 nautical miles offshore of San Diego | ~4 nautical miles offshore of Long Beach | ~4 nautical miles offshore of either location | NA                       |
| Area   | ~1,000 acres                            | ~1,000 acres                             | ~500 acres                                    | 0                        |
| Capacity (annual)  | 2.2 – 11 million pounds                 | 2.2 – 11 million pounds                  | 1.1 – 5.5 million pounds                      | 0                        |
| Technology   | Submersible pens with copper mesh       | Submersible pens with copper mesh        | Submersible pens with copper mesh             | NA                       |
| Landside   | Port of San Diego                       | Port of Long Beach/Port of Los Angeles   | Port of San Diego, Long Beach, or Los Angeles | NA                       |
| Species  | Yellowtail, white seabass               | Yellowtail, white seabass                | Yellowtail, white seabass                     | NA                       |



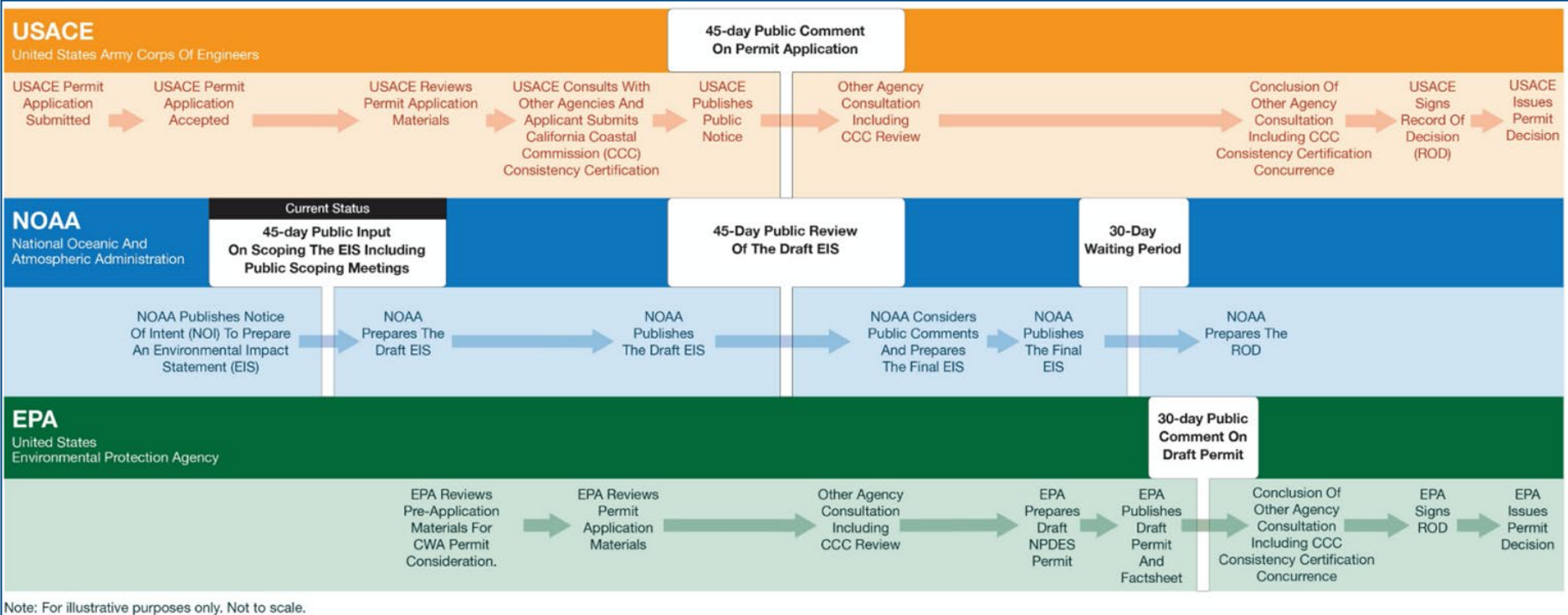
## EIS Content Overview

- Physical Oceanography
  - Air Quality
  - Public Health
  - Recreation and Tourism
  - Environmental Justice
  - Climate and Meteorology
  - Water Quality
  - Marine Mammals\*
  - Lower Trophic Levels\*
  - Environmental Contaminants
  - Ecosystem Function\*
  - Fish and Essential Fish Habitat\*
  - Marine and Coastal Birds\*
  - Species listed under the Endangered Species Act and their Critical Habitat\*
  - Socioeconomics
  - Cultural Resources
  - Transportation
  - Visual Resources
  - Energy
  - Land and Water Ownership, Use, and Management
- \* Biological resources



# Pacific Ocean Aquafarms- Case Study

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# Thank You



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