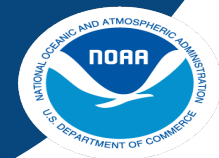


Aquaculture Policy and Strategy in the U.S.



Danielle Blacklock,
Director
NOAA Fisheries Office of Aquaculture



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Aquaculture in the United States

The global level of wild-caught fisheries has been relatively steady for more than 20 years, even as the human population continues to grow. Today, the United States imports roughly 70 to 85 percent of the seafood we eat and about half of this imported seafood is farmed.



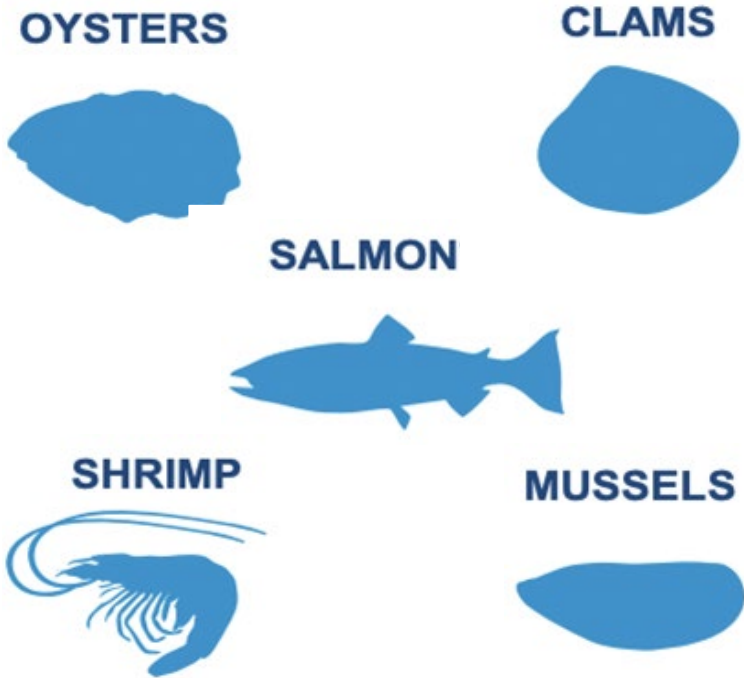
Photo of fish from inside an offshore net pen in Hawaii state waters. Photo credit: Ocean Era



Photo of snorkeler in open water looking down on vertical lines covered in shellfish. Photo credit: U.C. Davis

Aquaculture in the United States

Top Marine Species



Aquaculture Production Highlights, 2019*

Marine and Freshwater National Totals

VALUE

\$1.5
billion**
-2% from 2018

MARINE
\$430 million

FRESHWATER
\$694 million

24%
of U.S. seafood production & fishery products by value

PRODUCTION

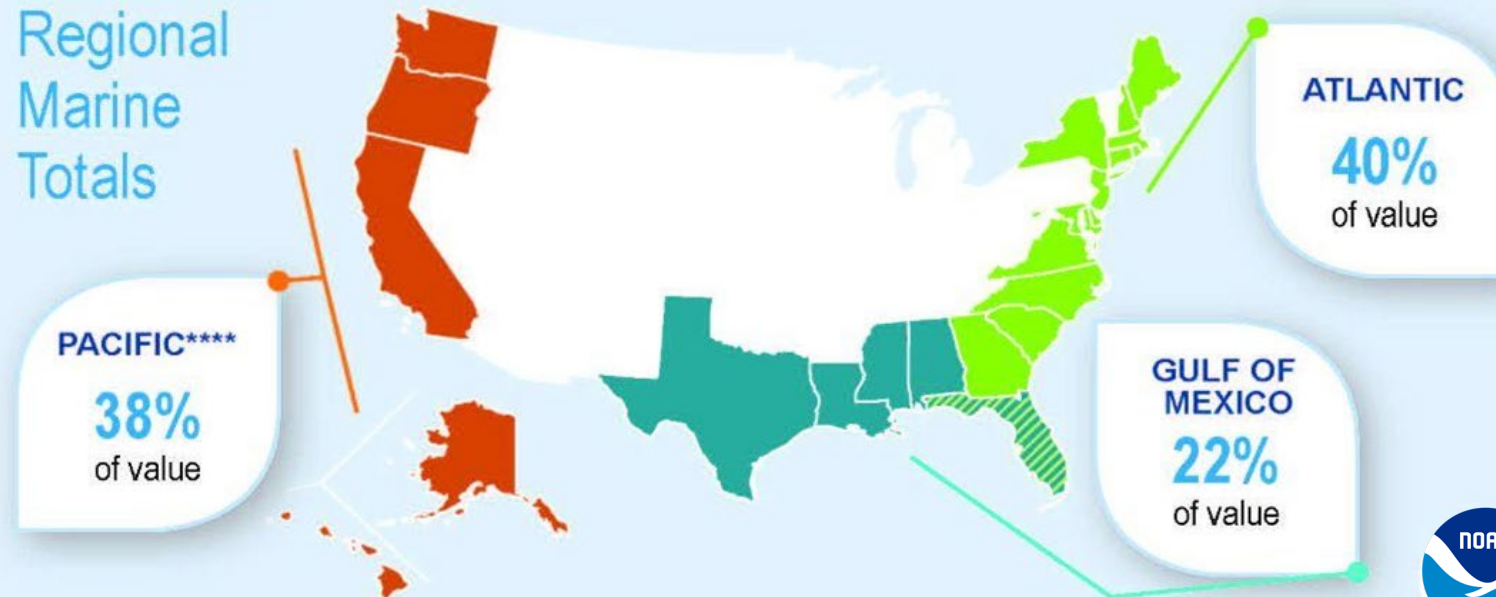
658
million pounds
-3% from 2018

MARINE
90 million

FRESHWATER
567 million

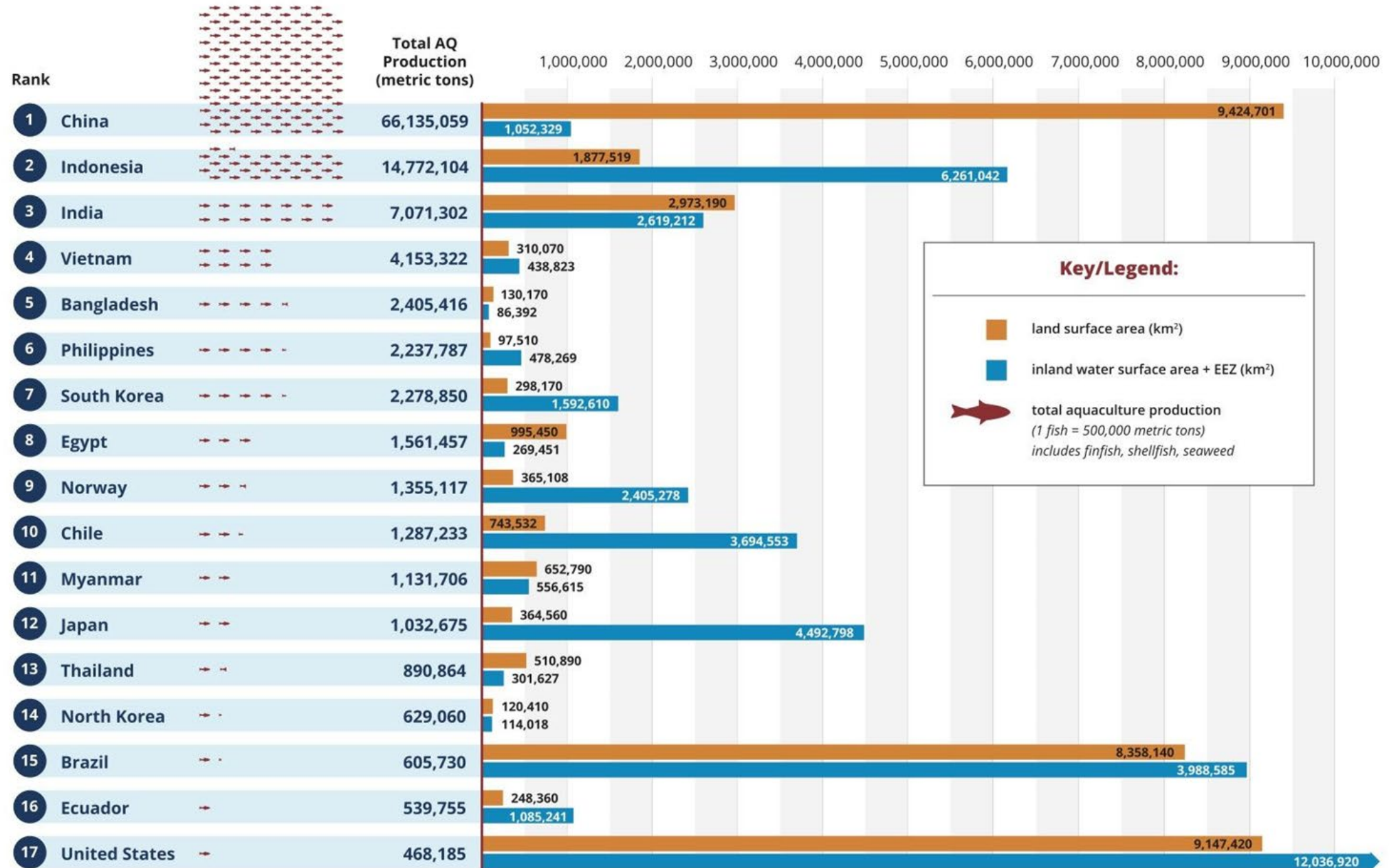
18th
in global aquaculture production

Regional Marine Totals

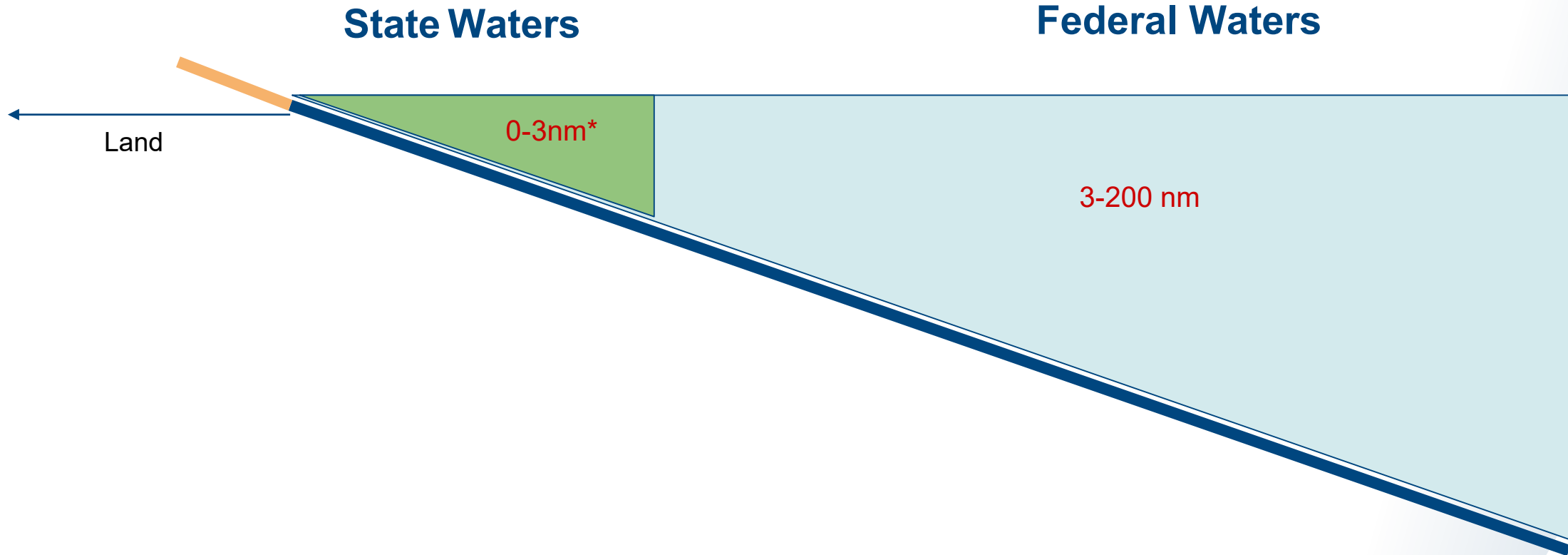


Top Aquaculture Producers Worldwide

Total production in relation to land and water resources



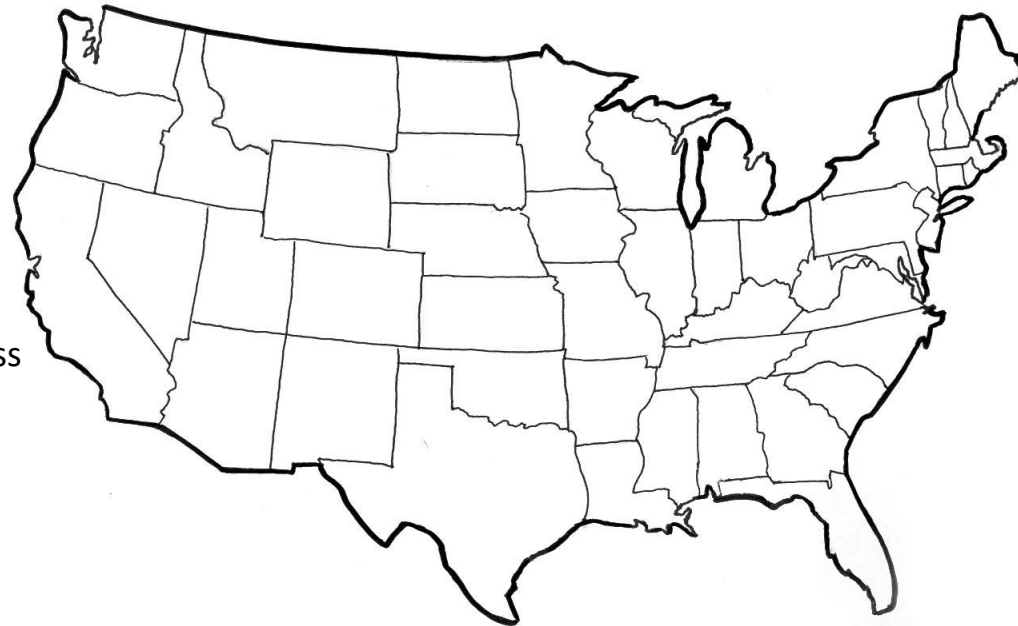
United States State vs. Federal Waters



- State/Federal waters boundary is 9nm for Puerto Rico, Texas, and the west coast of Florida.



Status of Aquaculture Projects in Federal Waters July 2023



Pacific Ocean

- 1 permitted research project
- 4 commercial applications in process

Northern Atlantic

- 2 permitted research projects
- 4 commercial applications in process

Gulf of Mexico

- 1 research project application in process
- 2 commercial applications in process



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Climate Change Threatens Our Global Food Production System

Bloomberg Green

Climate Adaptation

Drought Indicators in Western U.S. Flash Warnings of the 'Big One'

Summer in the U.S. begins with widespread drought already at historic levels across 11 states. Experts warn of worsening conditions once wildfires start.

By Brian K. Sullivan and Elizabeth Elkin
June 24, 2021, 6:00 AM EDT Updated on June 24, 2021, 10:31 AM EDT

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- Death Toll in Florida Collapse Rises to 4; 169 Still Missing
- Many Fassed Dead After Florida Beachfront Condo Collapses
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Grounds marked with previous water lines at Oroville Lake in California on June 22. Photographed

New Study: Climate Change to Shift Many Fish Species North

May 17, 2018

A new NOAA Fisheries-funded study presents the first major projections of where U.S. fish species populations may shift under future climate scenarios.

Feature Story | National



More Information

- > New Study: Projecting Shifts in Thermal Habitat US
- > Climate
- > NOAA Fisheries Climate Science Strategy

Recent News

- Janet Cook Named NOAA Fisheries Assistant Administrator National

FEATURE STORY

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- Saltonstall-Kennedy Grant Program Notice of Funding Opportunity FY2022 National

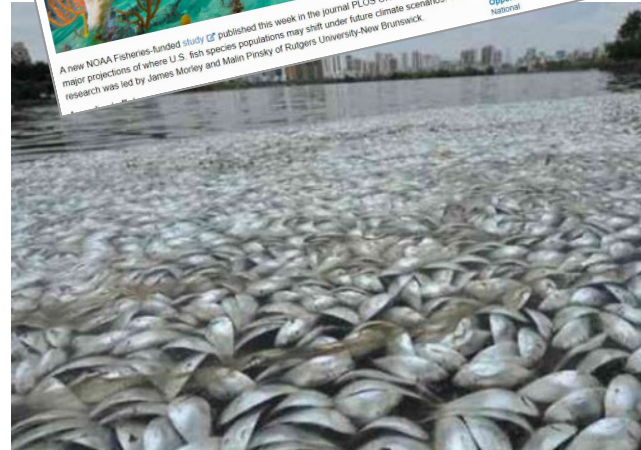
A new NOAA Fisheries-funded study published this week in the journal PLOS ONE presents the first major projections of where U.S. fish species populations may shift under future climate scenarios. The research was led by James Morley and Main Prinsky of Rutgers University-New Brunswick.

Rapid global heating is hurting farm productivity, study finds

Research shows rising temperatures since 1960s have acted as handbrake to agricultural yield of crops and livestock



▲ A wheat farm in Dixon, Illinois. With the global population set to rise to more than 9bn by 2050, the UN estimates food production will have to increase by about 70%. Photograph: Jim Young/Reuters



OCEAN CLIMATE ACTION PLAN

A REPORT BY THE OCEAN POLICY COMMITTEE
MARCH 2023



“Expand and decarbonize sustainable U.S. aquaculture production to enhance resilience of U.S. and global seafood system to the impacts of climate change.”



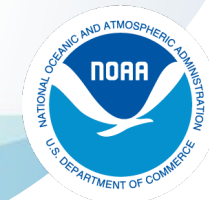
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White House National Science and Technology Council Subcommittee on Aquaculture

- Interagency Aquaculture Regulatory Efficiency Plan
- Interagency Aquaculture Science Coordination Plan
- Interagency Aquaculture Economic Development Plan



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Permitting for Marine Aquaculture in Federal Waters



**US Army Corps
of Engineers.**



- Magnuson-Stevens Fishery Conservation and Management Act (MSA) permits
- MSA Essential Fish Habitat consultations
- Endangered Species Act consultations
- Marine Mammal Protection Act authorizations
- CZMA coordination
- National Marine Sanctuary Act consultations

- Rivers and Harbors Act 1899
 - Section 10
- Clean Water Act 1972/77
 - Section 404
- Marine Protection, Research, and Sanctuaries Act 1972
 - Section 103

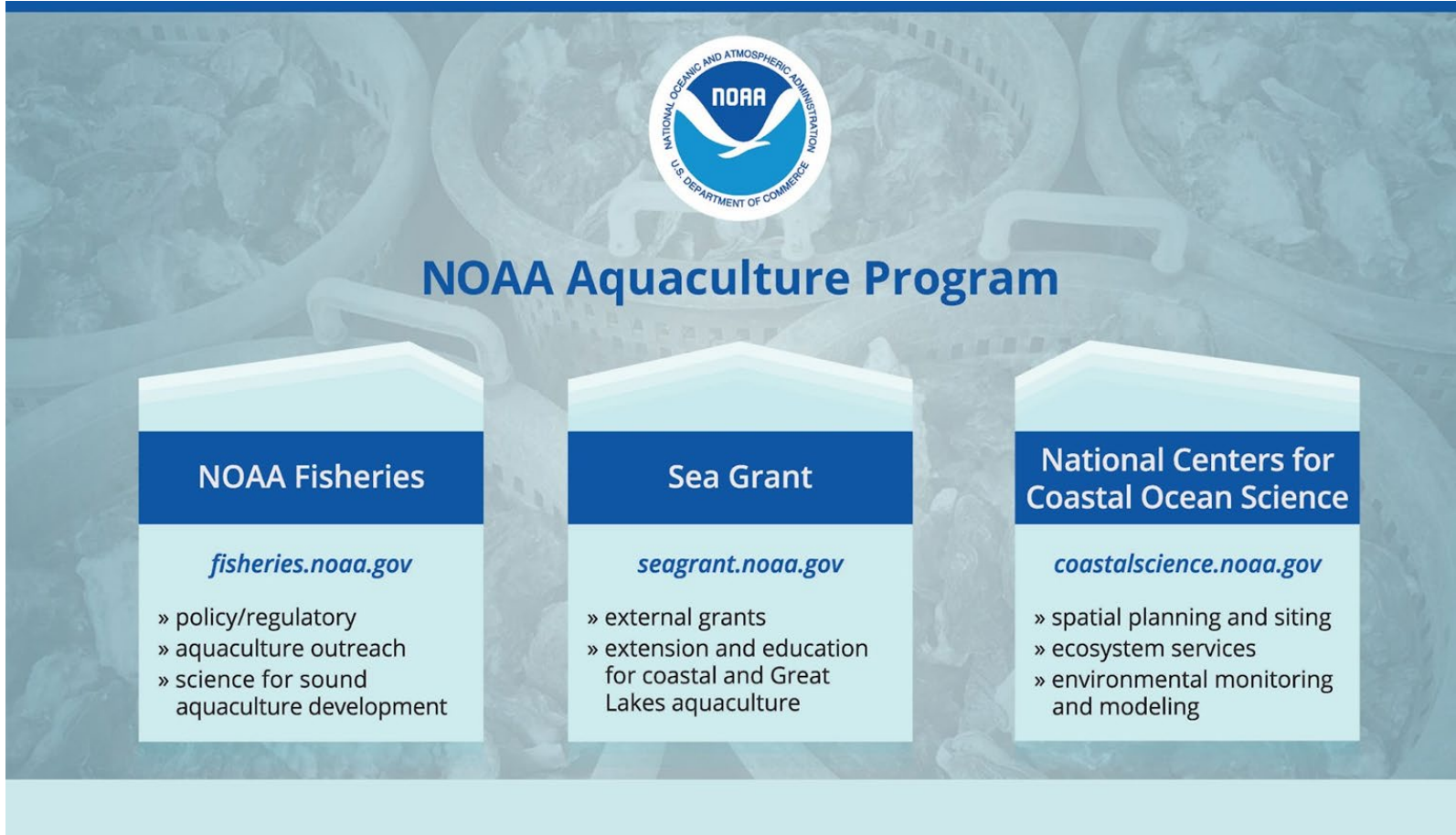
- Clean Water Act
 - Section 402 – National Pollutant Discharge Elimination System
 - Section 403 – Ocean Discharge Criteria

+ Several other agencies depending on the specifics of the project



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NOAA Aquaculture Program



The graphic features the NOAA logo at the top center, set against a background of several white plastic baskets filled with ice. Below the logo, the title "NOAA Aquaculture Program" is centered. Three white pillars with blue headers represent the program's components. Each pillar lists a website and a set of activities.

NOAA Fisheries
fisheries.noaa.gov

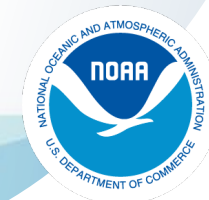
- » policy/regulatory
- » aquaculture outreach
- » science for sound aquaculture development

Sea Grant
seagrant.noaa.gov

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

National Centers for Coastal Ocean Science
coastalscience.noaa.gov

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



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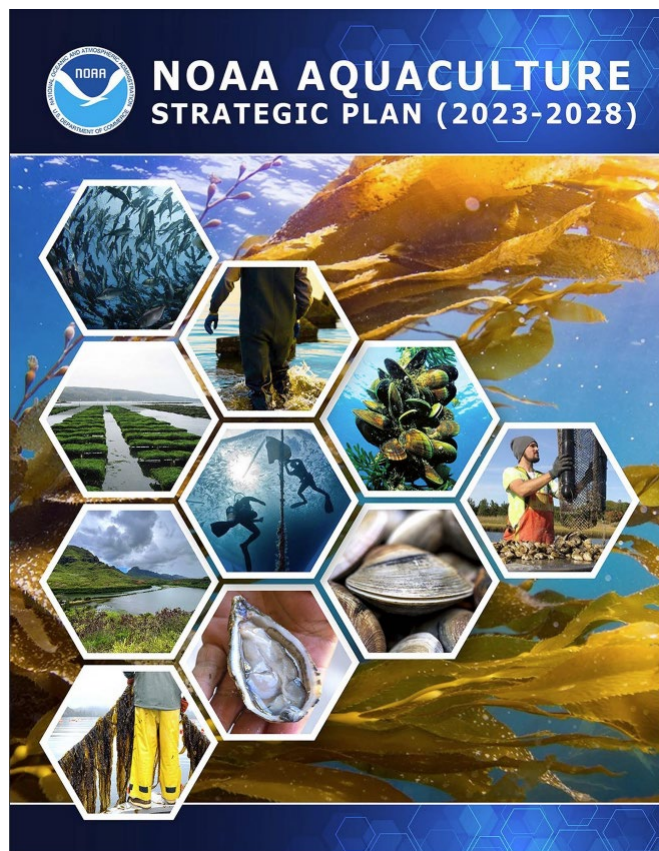
NOAA Aquaculture Program

Vision: A thriving, resilient, and inclusive U.S. aquaculture industry that supports jobs, expands access to nutritious domestic seafood, and reinforces healthy coastal, marine, and Great Lakes ecosystems in a changing environment.

Mission: To provide science, services, and policies that create conditions for opportunity and growth of sustainable U.S. aquaculture.



NOAA Aquaculture - Aquaculture Plans



NOAA Aquaculture Strategic Plan

Four Goals:

1. Manage Sustainably and Efficiently
2. Lead Science for Sustainability
3. Educate and Exchange Information
4. Support Economic Viability and Growth

NOAA Draft National Seafood Strategy

Goal 2:

Increase sustainable U.S. aquaculture production



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Goal #1

Manage Sustainably and Efficiently

Improve regulatory processes for sustainable coastal and marine aquaculture through collaboration with partners.



Goal #2

Lead Science for Sustainability

Use world-class science expertise to meet management and industry needs for a thriving seafood production sector and share this knowledge broadly.



Goal #3

Educate and Exchange Information

Build awareness and support for coastal and marine aquaculture through two-way communication with diverse stakeholders and partners.



Goal #4

Support Economic Viability and Growth

Facilitate a robust aquaculture industry that thrives as a key component of a resilient seafood sector.



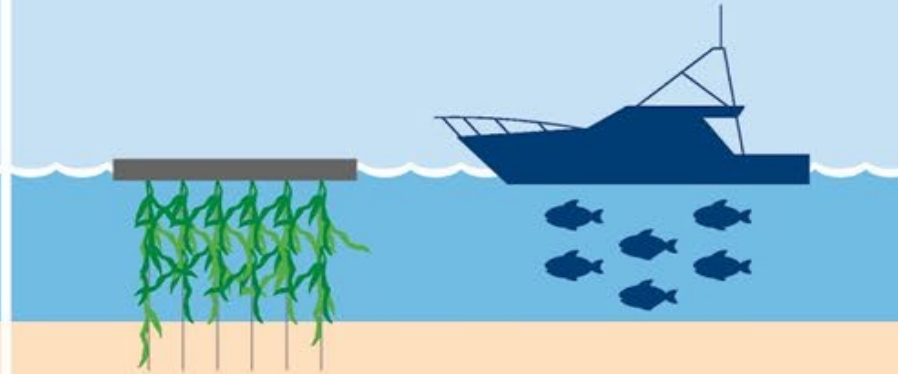
What is an Aquaculture Opportunity Area?

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.

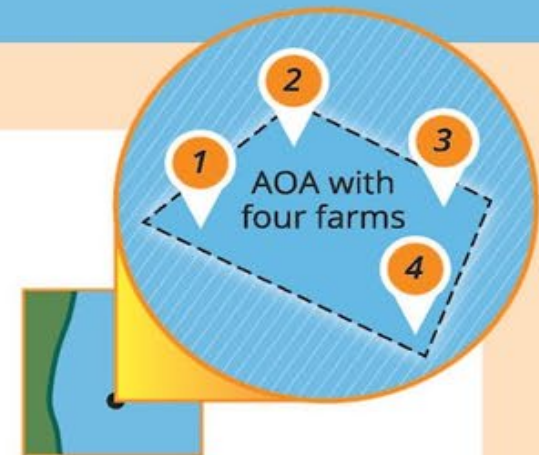
AOAs minimize interactions with other users, such as shipping, fishing, and the military.



Assessment and Use of AOAs

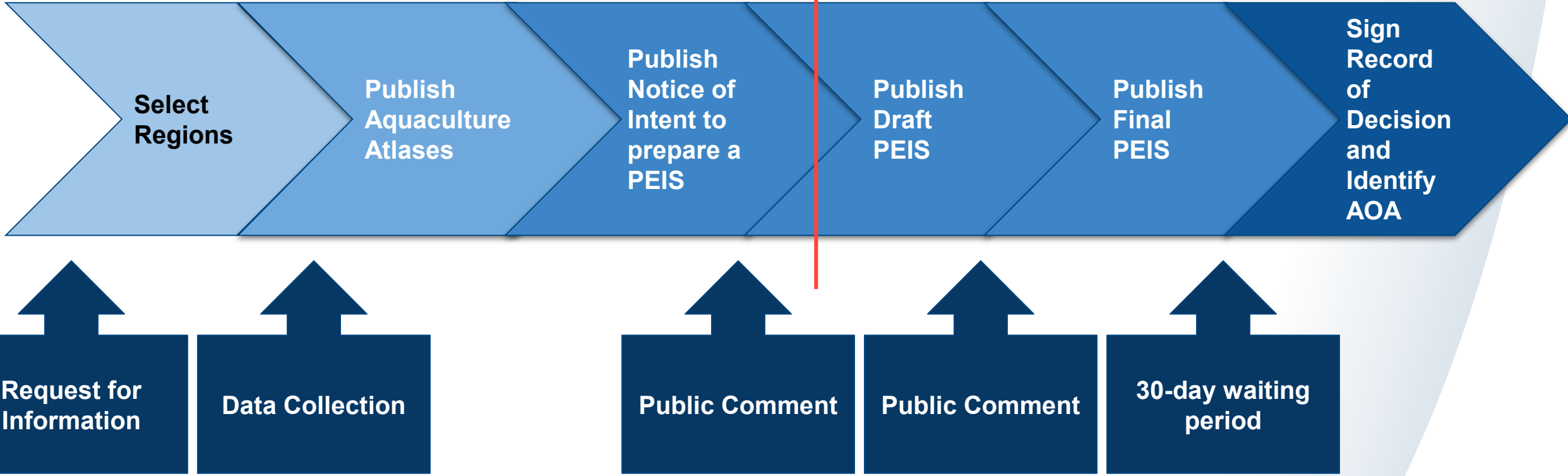
Stakeholder input is essential in the design and location of AOAs and NOAA expects these areas will be shaped through a public process that allows constituents to share their community and stewardship goals, as well as critical insights.

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.





AOA Process Milestones



PEIS = Programmatic Environmental Impact Statement
Element of the National Environmental Policy Act



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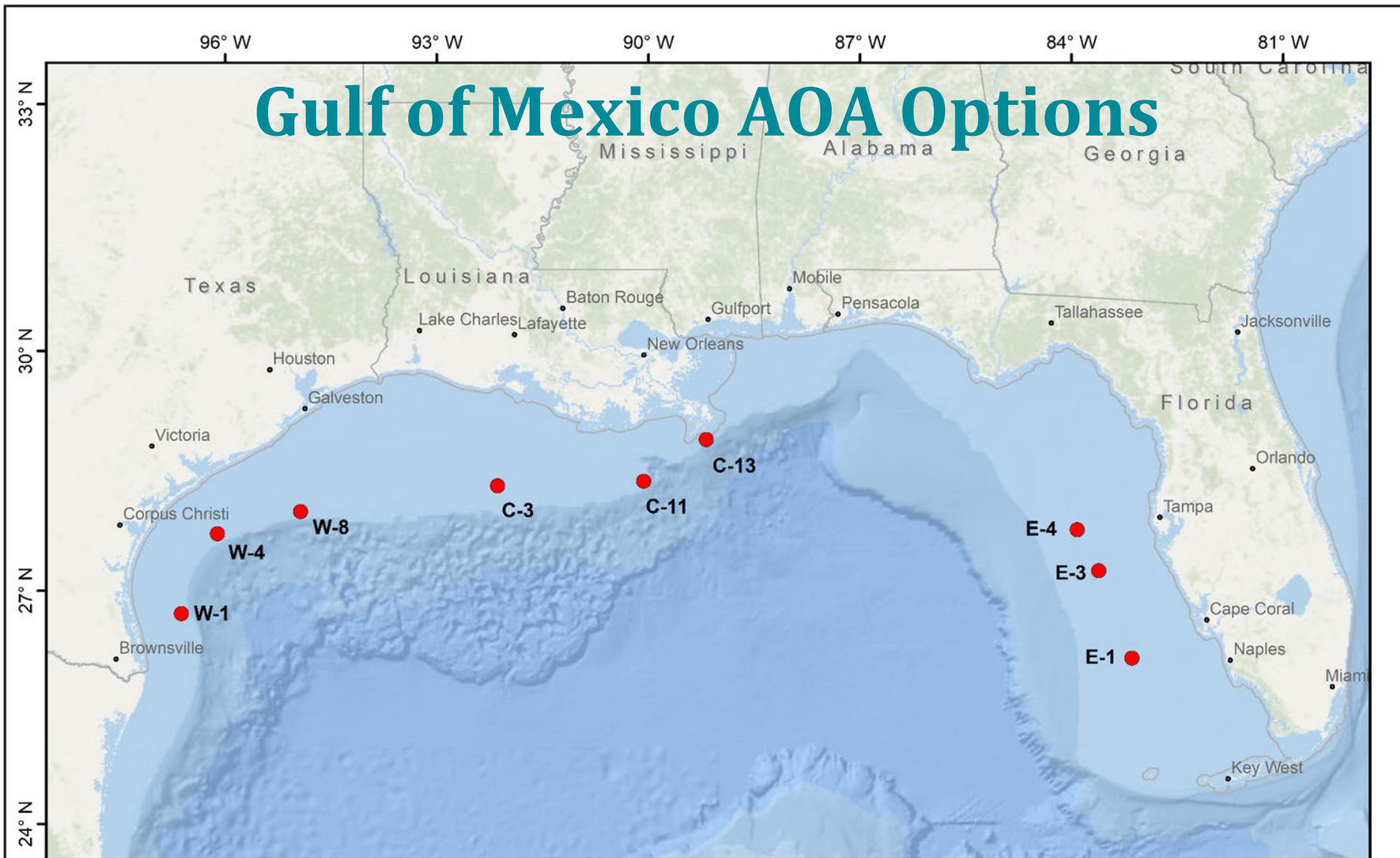
Aquaculture Opportunity Atlas



Southern California AOA Options



Gulf of Mexico AOA Options



● Options for Aquaculture Opportunity Areas

0 150 300 km
0 75 150 nm

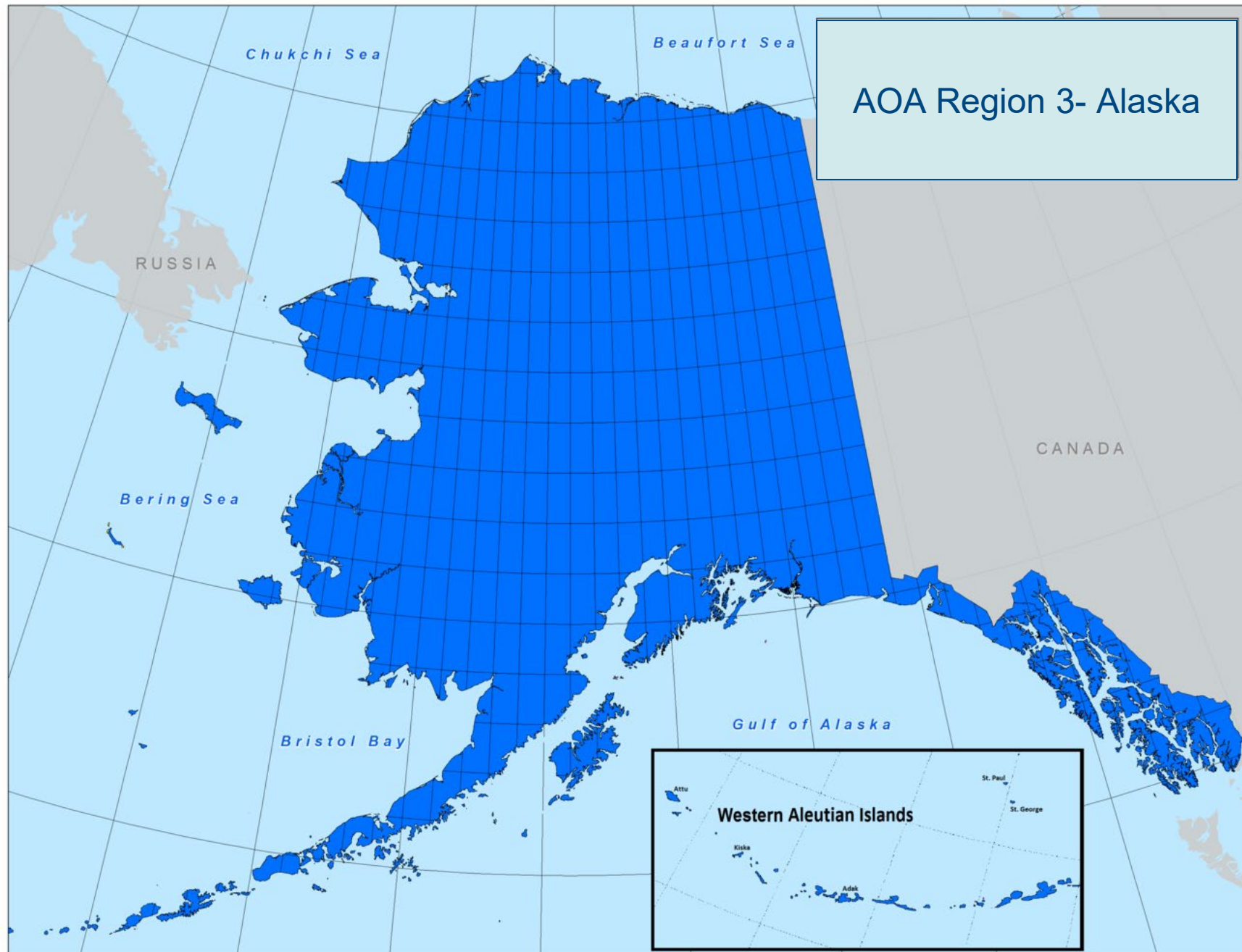
Scale: 1:7,500,000
Coordinate System: WGS 1984

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community Esri, Garmin, GEBCO, NOAA NGDC, and other



Marine Spatial Ecology Division
National Centers for Coastal Ocean Science
National Ocean Service





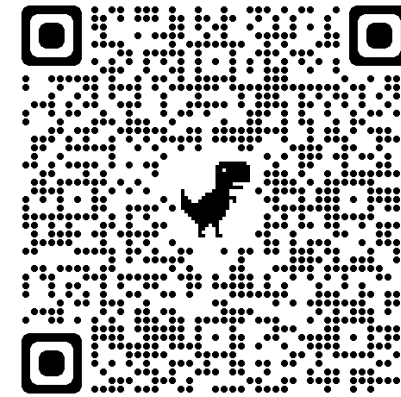
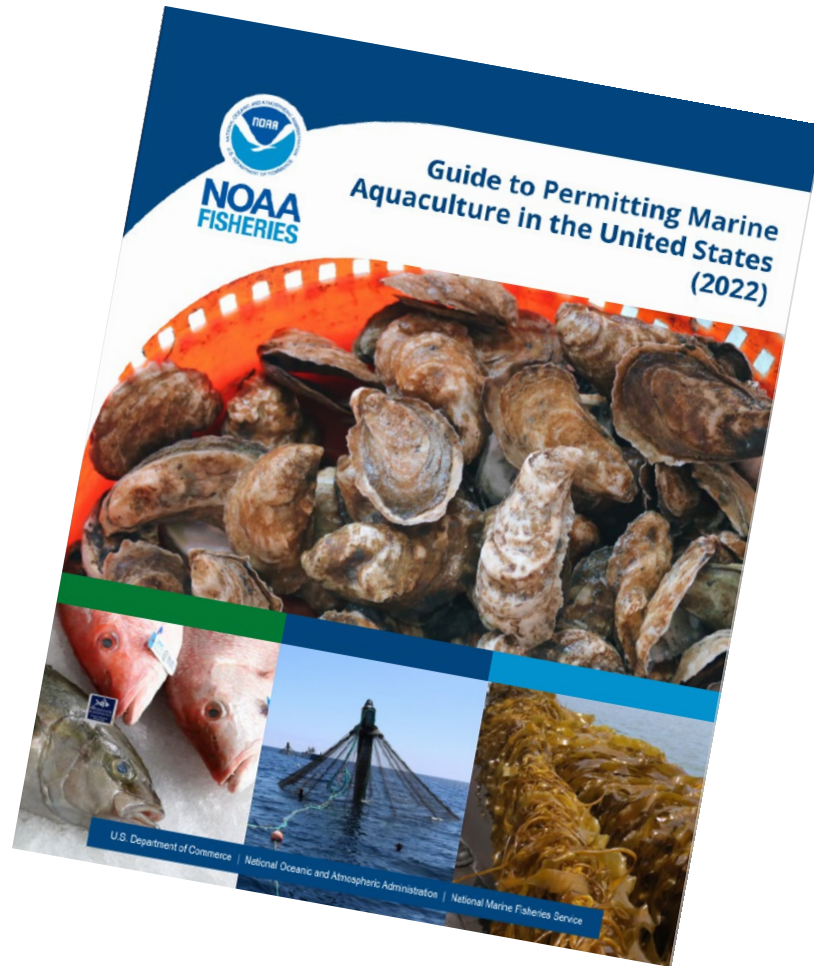
Quick Facts:

- Partnership with State of Alaska
- State waters only (0-3nm)
- Shellfish, invertebrates, and Algae



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Guide to Permitting Marine Aquaculture in the United States (published Feb 2022)





nmfs.aquaculture.info@noaa.gov



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