Growing Seafood: NOAA's Aquaculture Program

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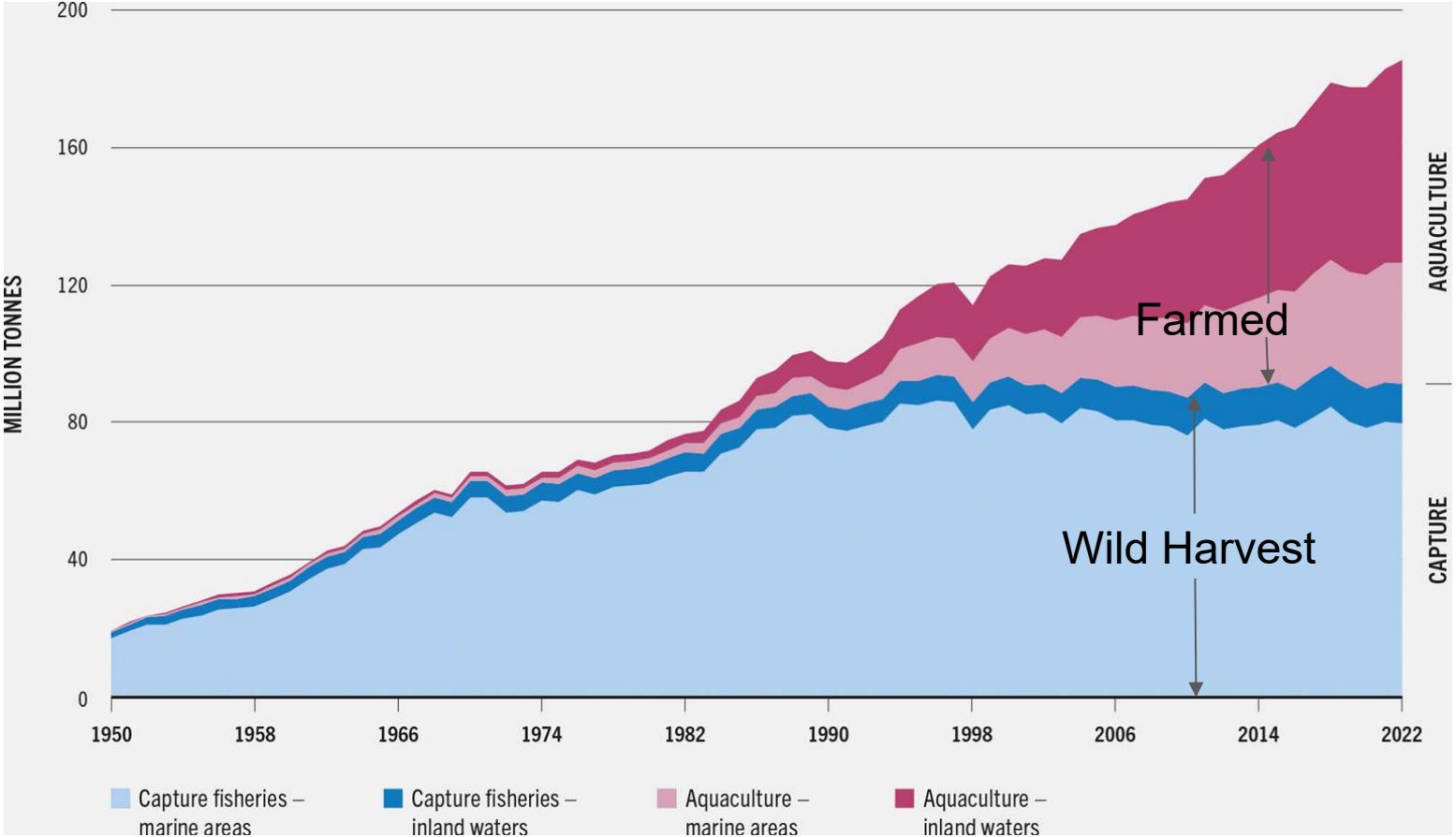
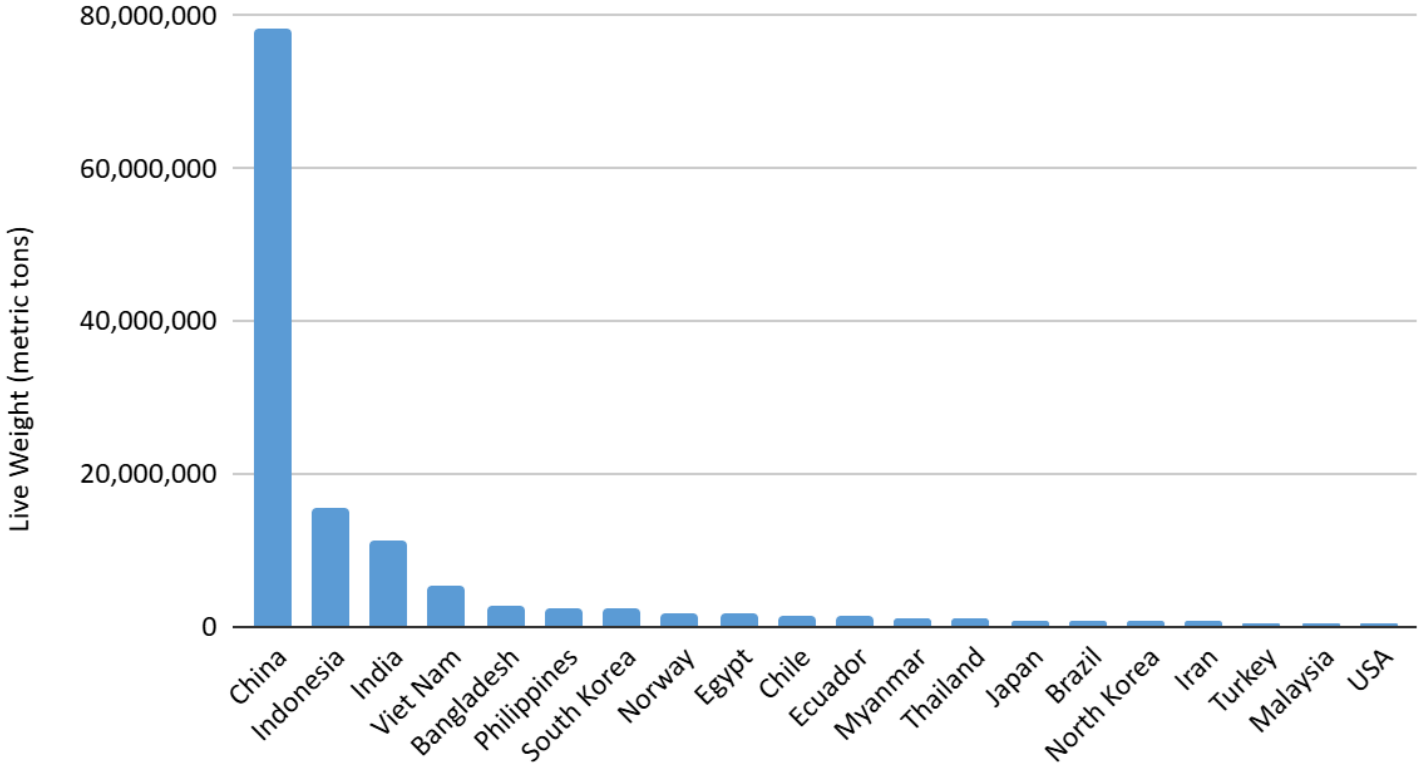
U.S. Department of Commerce | National Oceanic and Atmospheric Administration | National Marine Fisheries Service

The U.S. consumes about **$15 billion** worth of imported farmed seafood annually.

The total value of U.S. aquaculture production **<$2 billion**.


200
160
120
80
40
0
MILLION TONNES
1950
1958
1966
1974
1982
1990
1998
2006
2014
2022
AQUACULTURE
CAPTURE
Farmed
Wild Harvest
Capture fisheries – marine areas
Capture fisheries – inland waters
Aquaculture – marine areas
Aquaculture – inland waters

Top Aquaculture Producing Countries in 2023



NOAA FISHERIES

E.O. 13921 Promoting American Seafood Competitiveness and Economic Growth

- NOAA Leads NEPA
- Aquaculture Opportunity Areas

NOVEMBER 10, 2022

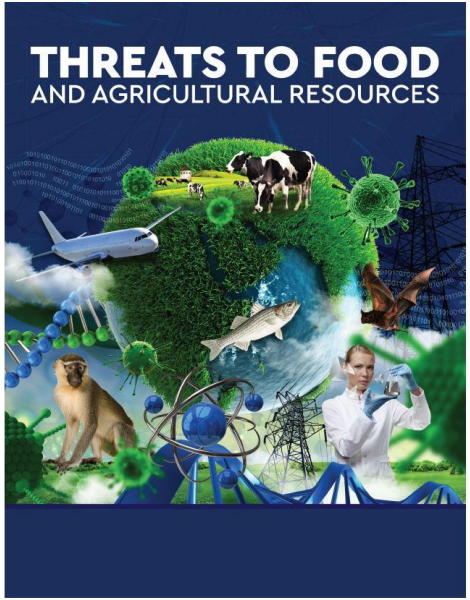
National Security Memorandum on Strengthening the Security and Resilience of United States Food and Agriculture

BRIEFING ROOM › PRESIDENTIAL ACTIONS

NATIONAL SECURITY MEMORANDUM/NSM-16

THE SECRETARY OF STATE
THE SECRETARY OF DEFENSE
THE ATTORNEY GENERAL
THE SECRETARY OF THE INTERIOR
THE SECRETARY OF AGRICULTURE
THE SECRETARY OF COMMERCE
THE SECRETARY OF LABOR
THE SECRETARY OF HEALTH AND HUMAN SERVICES
THE SECRETARY OF HOMELAND SECURITY

- Aquaculture is agriculture
- Designated as critical infrastructure



DHS recommends the growth of domestic aquaculture as one of six key national priorities to support domestic food system resilience.

Implementing EO 13921: *Promoting American Seafood Competitiveness and Economic Growth*

Published a National Aquaculture Development Plan focused on Regulatory Efficiency, Research, and Economic Development

Published a compendium of federal grant assistance and finance programs applicable to aquaculture

Worked with USACE, supporting their publishing of new Nationwide Permits for seaweed, shellfish, and finfish

Published a regulatory guide for aquaculture in federal waters

Identified Aquaculture Opportunity Areas (AOAs) in the Gulf of America and Southern California, and in process of identifying AOAs in Alaska State Waters

Updating the National Aquatic Animal Health Plan with USDA & USFWS

Executive Order 14276, 2025) "Restoring American Seafood Competitiveness"

April 2025 Executive Order calls for an America-First plan for wild-capture fisheries and aquaculture production.

- Section 4: (d) "The Secretary of Commerce, in consultation with the Secretary of Agriculture, shall develop and implement an America First Seafood Strategy to **promote production, marketing, sale, and export** of United States fishery and aquaculture products and strengthen domestic processing capacity. This program shall accelerate the Department of Agriculture's efforts to educate American consumers about the health benefits of seafood and increase seafood purchases in nutrition programs."

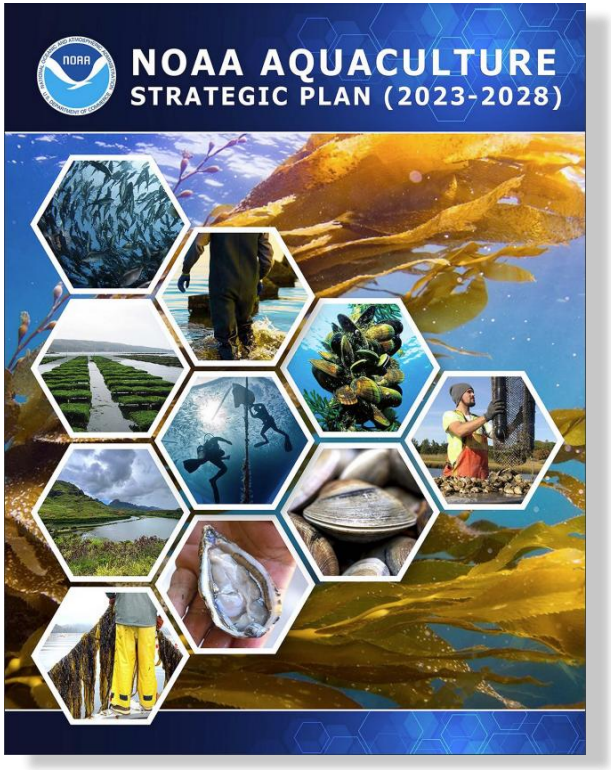
NOAA's Aquaculture Program

Statutory Responsibilities and Legislative Drivers

The National Aquaculture Act of 1980 96-362. 94 Stat. 1198, 16 U.S.C. 2801, et seq.)

- Established aquaculture as a national policy priority for the United States.
- Calls for scientific, education, and policy initiatives that bolster domestic aquaculture production.
- Created an interagency Subcommittee on Aquaculture, through which NOAA coordinates with other federal agencies on regulatory, policy, economic, and science aquaculture-related activities.

NOAA Aquaculture Strategic Plan

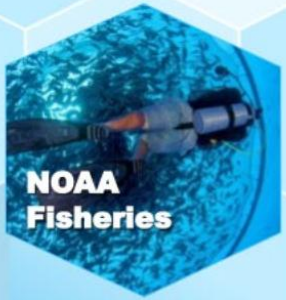


Four Goals:

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

NOAA Aquaculture Program

These organizations partner across NOAA to advance sustainable aquaculture in the United States through policy, outreach, science, research, grants, and extension.



- Office of Aquaculture
- Regional Offices
- Science Centers

- National Centers for Coastal Ocean Science

- National Sea Grant College Program

Aquaculture Research

NOAA Aquaculture Research

Northwest Fisheries Science Center

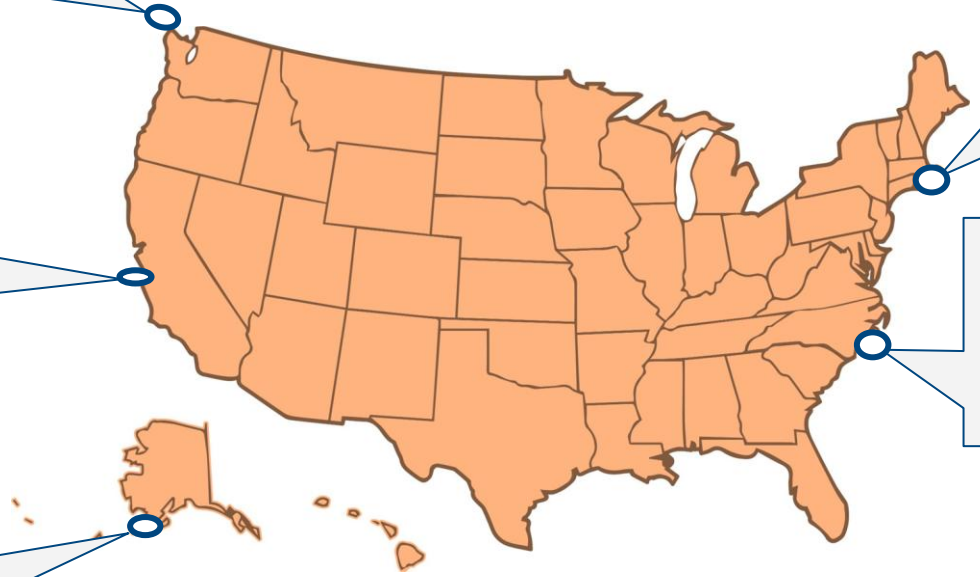
- Finfish
- Shellfish
- Recirc. Aq. Sys.
- Genetics/Genomics
- Environmental Interactions & Stressors
- Native Species Enhancement

Southwest Fisheries Science Center

- Genetic Risk

Alaska Fisheries Science Center

- Macroalgae
- Shellfish- including hatchery



Northeast Fisheries Science Center

- Shellfish & Microalgae
- Environmental Interactions
- Breeding and Husbandry
- Engineering

NOS National Centers for Coastal and Ocean Science

- Siting analysis
- ESA interactions simulator
- Water quality modeling
- Benthic modeling

NOAA Aquaculture Research

Since 2019, NOAA has invested more than $2.3 million in funded marine aquaculture science and research in the U.S Caribbean.

Inside Naguabo Queen Conch Hatchery in Puerto Rico. From left to right – Victoria Cassar, Hatchery Manager; Raimundo Espinoza, Executive Director, Conservación ConCiencia and Co-PI on SK NOAA grant; Megan Davis, Research Professor, Florida Atlantic University Harbor Branch Oceanographic Institute and PI on SK NOAA grant.

Opportunities Started

Cooperative Institute Fostering Aquaculture Research and Marketing (CIFARM)

- **Marine Aquaculture Demonstration**
  - Implementing pilot projects and offshore test beds
  - NOAA aquaculture opportunity areas
- **Aquaculture Engineering and Technology Development**
  - Engineering and gear innovations
  - Engineering to minimize protected species interactions
- **Environmental Observations, Modeling, Forecasting, and Aquaculture Management**
  - Technologies and frameworks for cost-effective environmental compliance monitoring
  - Tools for farm management
- **Risk Management and Vulnerability Assessment**
  - Disease prevention and biosecurity measures
  - Risk assessment for investment and insurance
  - Increasing profitability through risk reduction
- **Seafood Markets**
  - Market research and economic analysis
  - Market strength and business planning
  - Market access and waterfront infrastructure
  - Community integration and market acceptance

Aquaculture Opportunity Areas (AOAs)

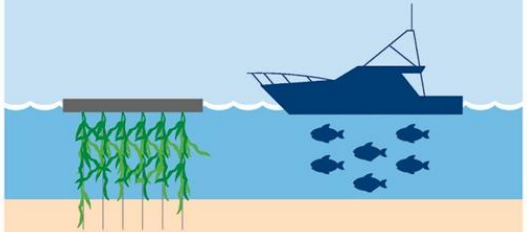
What is an Aquaculture Opportunity Area?

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.

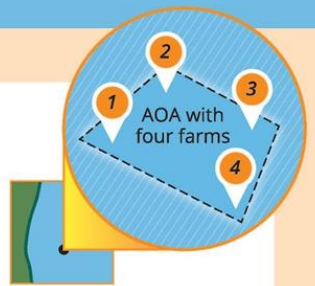
AOAs minimize interactions with other users, such as shipping, fishing, and the military.



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.

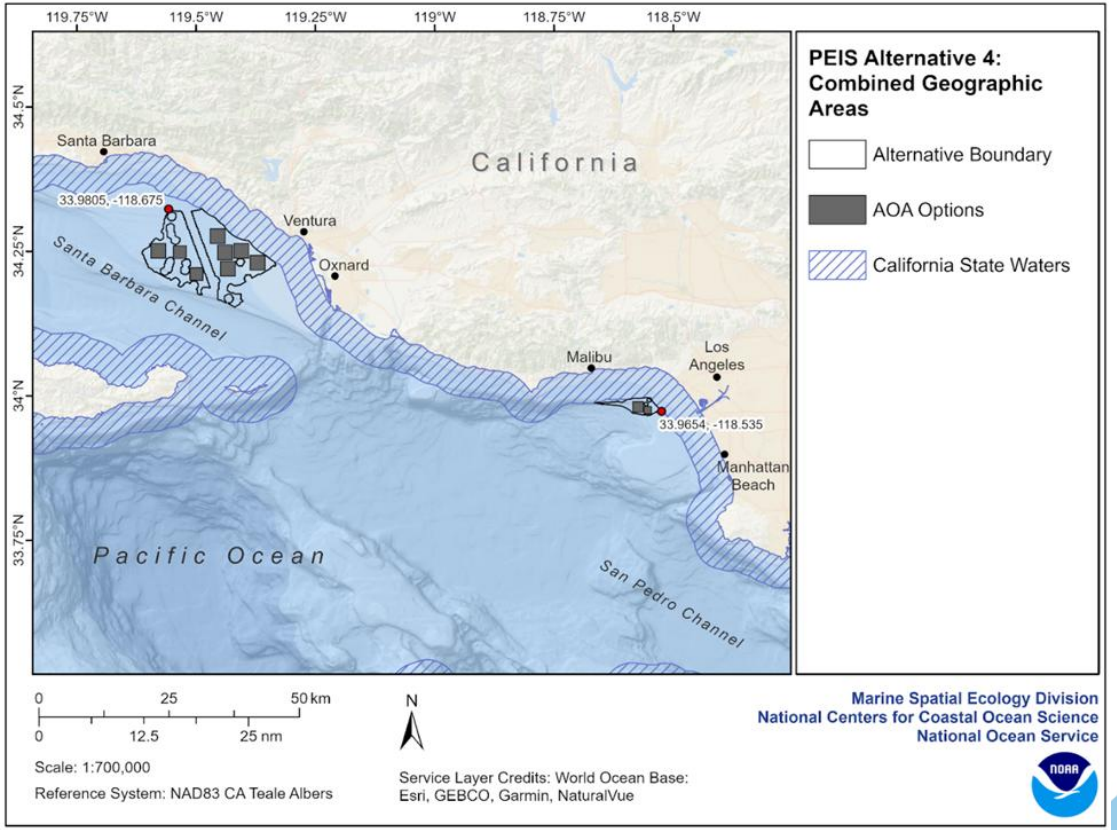


AOA Identification Announcement

Announced on Sept. 19th

- NOAA identified 13 Aquaculture Opportunity Areas totaling more than 21,000 acres in federal waters
- Expected responses from interested parties

Southern California AOAs



US Army Corps of Engineers®

NOAA FISHERIES

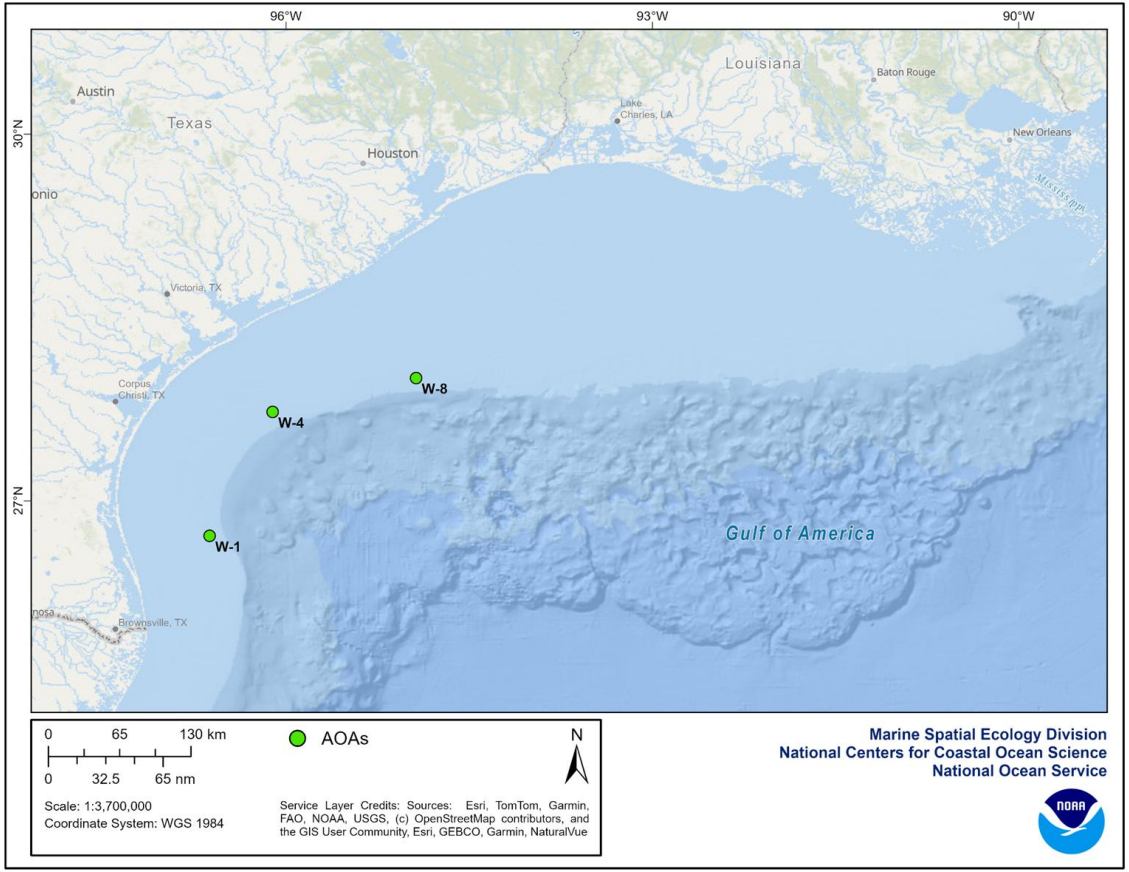
Gulf of America AOAs

US Army Corps of Engineers®

U.S. AIR FORCE

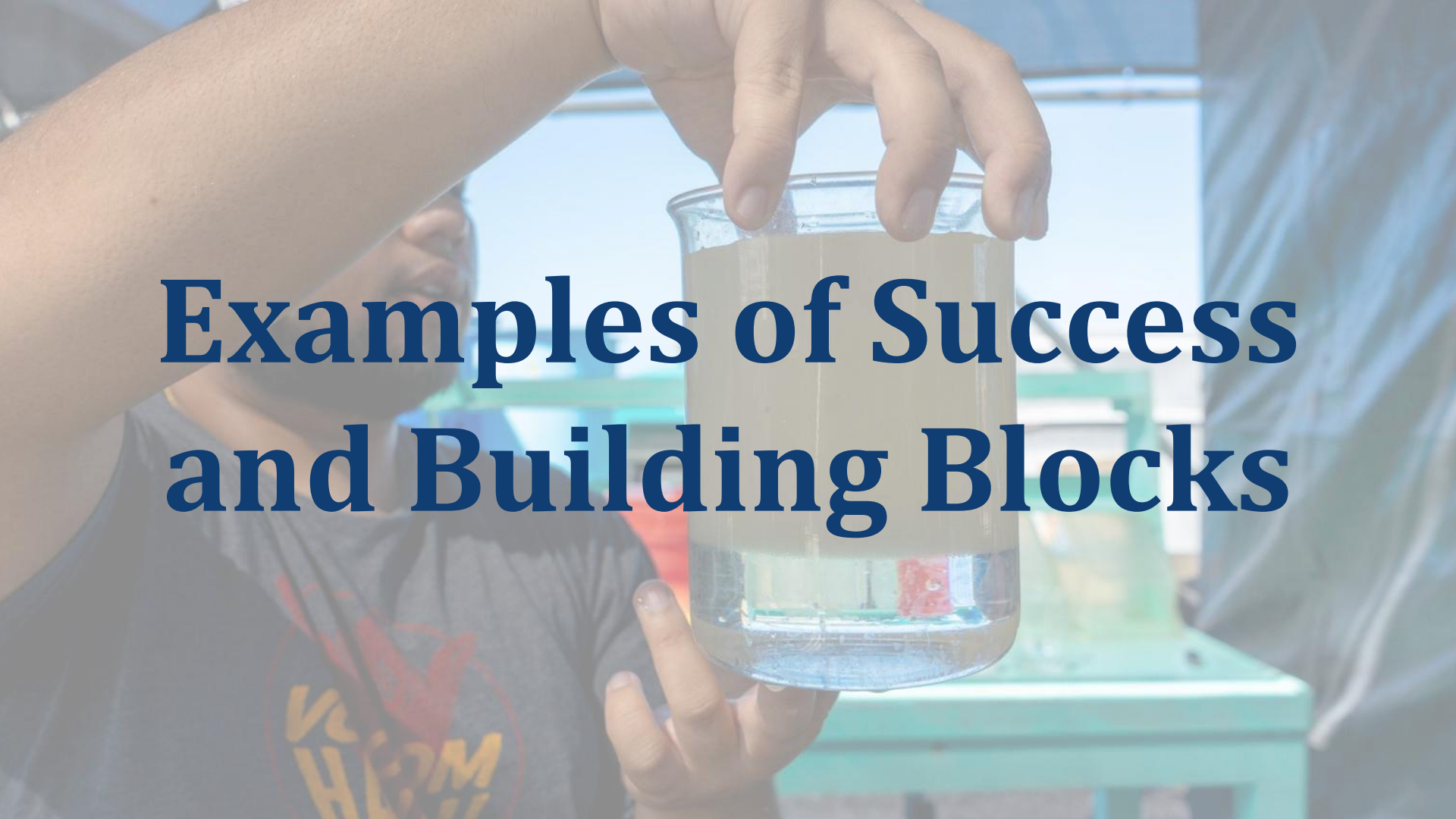
U.S. FISH & WILDLIFE SERVICE

BOEM Bureau of Ocean Energy Management



NOAA FISHERIES

Alaska AOAs



Examples of Success and Building Blocks

Aquaculture in the Pacific Islands: Natural Energy Laboratory of Hawaii Authority (NELHA)

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Aquaculture in the Pacific Islands: NELHA

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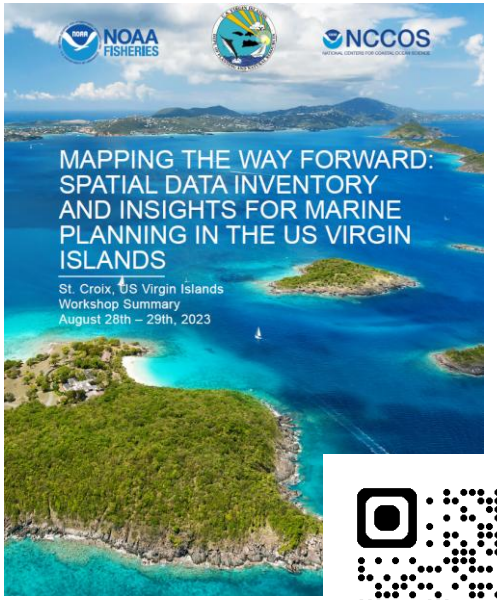
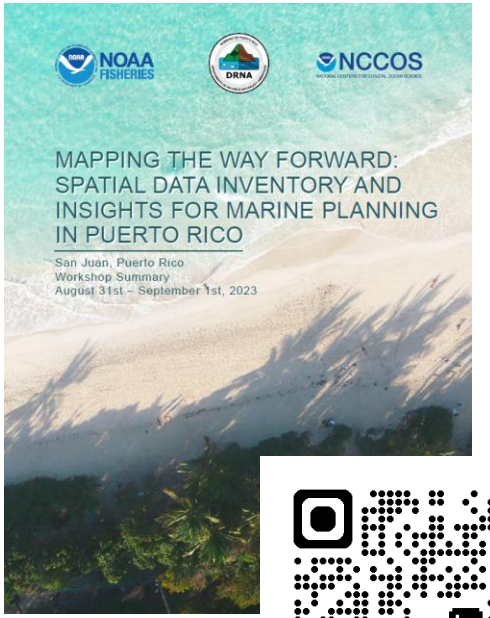
Marine Spatial Planning and Data Development





NOAA Fisheries Aquaculture Program Review Virtual Listening Session Feb 2024

Top Services:

- Support Economic Development for Aquaculture
- Identification of Aquaculture Opportunity Areas
- Regional Aquaculture Coordination
- Regulatory Efficiency Policy and Implementation (NEPA Coordination, Interpretation and Practice.)

Top New Services:

- Socio-economics for aquaculture
- Partner and support state/territorial governments to enable aquaculture development
- Expand regional aquaculture support (RACs, NEPA, consultation biologists)

NOAA Aquaculture Resources for the Caribbean

Andrew Richard, Aquaculture Coordinator
Southeast Regional Office

Kieley Hurff, Aquaculture Coordinator
Southeast Regional Office

Aquaculture Legislation in the 119th Congress (2025-2026)

U.S. Senate

27

Bills introduced

U.S. House of Representatives

23

Bills introduced

NOAA FISHERIES

back-up

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