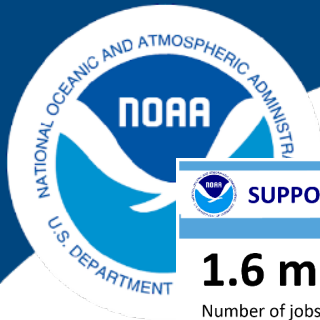


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Aquaculture in Federal Waters

MAFMC Mtg.
June 7, 2018
Philadelphia, PA

Kevin Madley
GARFO Aquaculture Coordinator



**NOA
FISHE**

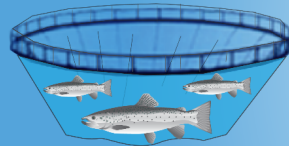
SUPPORTS AQUACULTURE DEVELOPMENT

1.6 million

Number of jobs supported by the seafood industry in 2015

\$1.3 billion

Value of seafood produced by the U.S. aquaculture industry in 2014

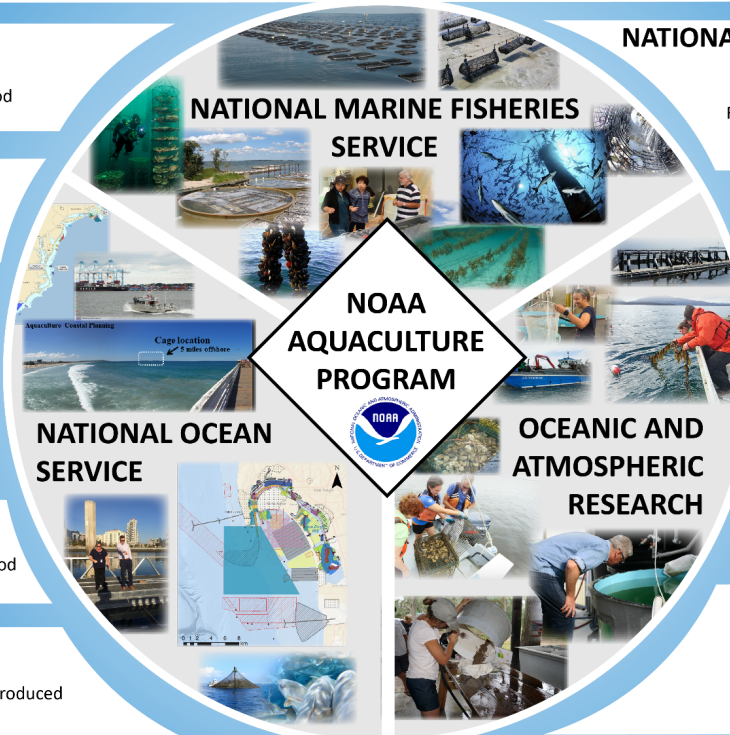


5 - 7 %

Percentage of the U.S. demand for seafood met by the U.S. aquaculture industry

50 %

Percentage of imported seafood that is produced through aquaculture practices



NATIONAL MARINE FISHERIES SERVICE

NATIONAL MARINE FISHERIES SERVICE

Regulation and policy
Funding for aquaculture R&D
Research conducted at regional science centers
Outreach and education support
International coordination



NATIONAL OCEAN SERVICE

Spatial planning
Environmental monitoring
Environmental modeling
Ecosystem services



OCEANIC AND ATMOSPHERIC RESEARCH

33 Sea Grant college programs
Funding for research, extension and education
Research application and technology transfer

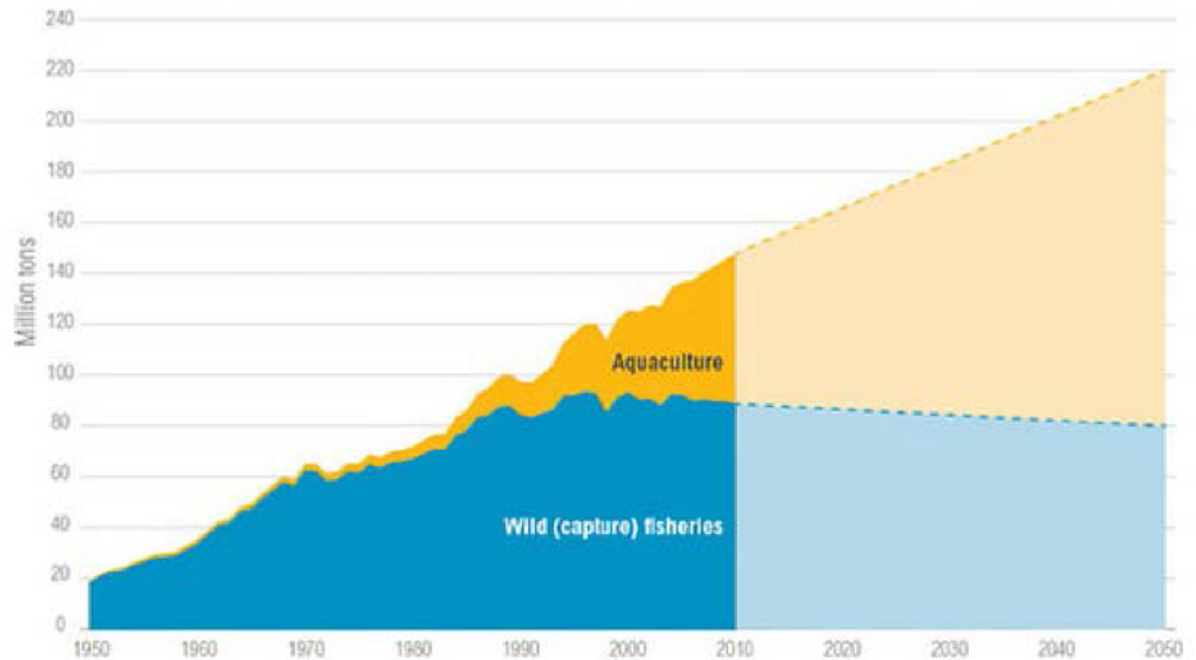
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AQUACULTURE
PROGRAM**



Aquaculture Is Expanding Rapidly Worldwide

- Future seafood supply growth will come from aquaculture.
- Wild fisheries alone cannot meet increasing demand for seafood.
- Aquaculture is critical to the global food supply.

Historical and Projected Global Aquaculture and Fisheries Production



Driving Progress

- Global demand for seafood growing: we will need an additional 40m tons in 20 years
- Federal nutrition guideline: eat 2x more seafood
- Jobs, especially in coastal fishing communities
- Seafood security: ~90% of seafood Americans eat is imported, ½ of that from aquaculture. Growing middle class in Asia and Latin America is competing with us for that seafood.
- Reduce \$14b seafood trade deficit and create export opportunities



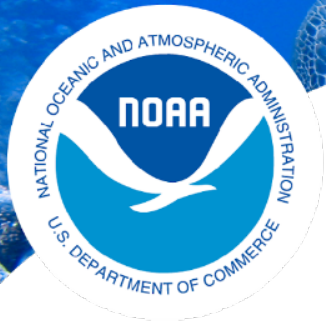
**NOAA
FISHERIES**

Atlantic EEZ aquaculture operations

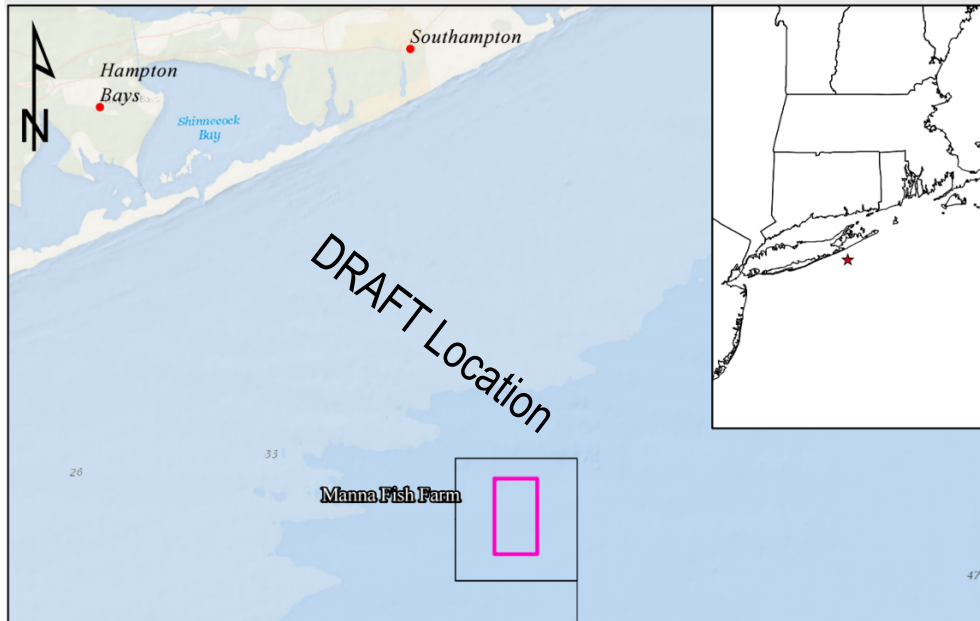
- Two USACE permits have been provided for current Atlantic EEZ aquaculture operations (pilot scale). Both are blue mussel operations.
- Approx. 8 miles off Cape Ann is an blue mussel longline operated by Salem State U.
- The second is in Nantucket Sound but as of yet has placed no gear in the water.



Atlantic EEZ aquaculture proposals



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- Manna Fish Farms (MFF)
- 8 miles off Shinnecock Inlet, NY
- Interest in striped bass, steelhead trout, and integrated shellfish and macroalgae, if permitted.
- Submitted applications to USACE and NY DOS. Deemed incomplete; now working through requests for additional information (including an alternative siting analysis).
- Requested the NMFS assess applicability of DOC regulations restricting possession and harvest of striped bass in the EEZ.
- MFF has initiated discussions with NY and ASMFC. (Jim Gilmore and Bob Beal among others)



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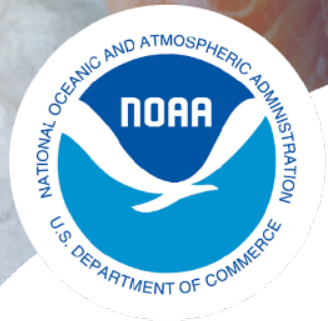
Atlantic EEZ aquaculture proposals

Stakeholders have also contacted NMFS over the past two years seeking guidance on processes to permit EEZ operations, such as:

- Tuna farming off NJ and NY
- Steelhead trout farming off New England
- Blue mussel farming off RI and MA
- Oyster farming off RI, MA and ME
- Kelp farming off RI, MA and ME

Additionally:

- NC has requested NOAA, MAFMC, and SAFMC develop a permit process for aquaculture in the EEZ
- SAFMC has expressed interest and begun plans for an aquaculture FMP in the future

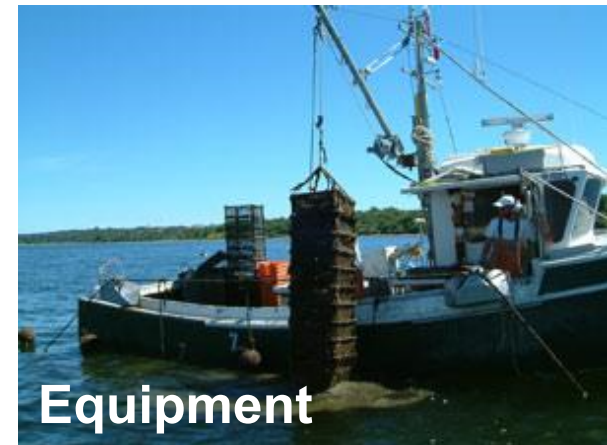
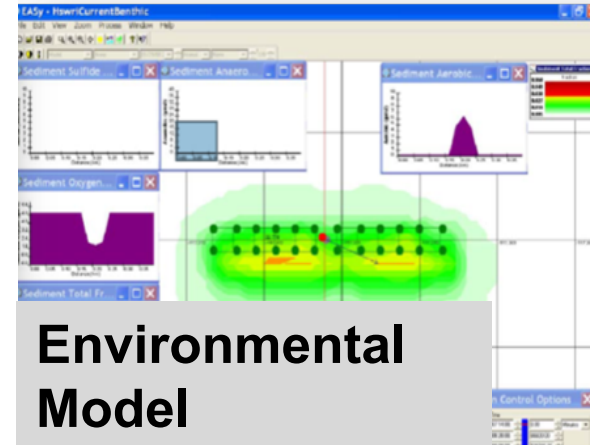
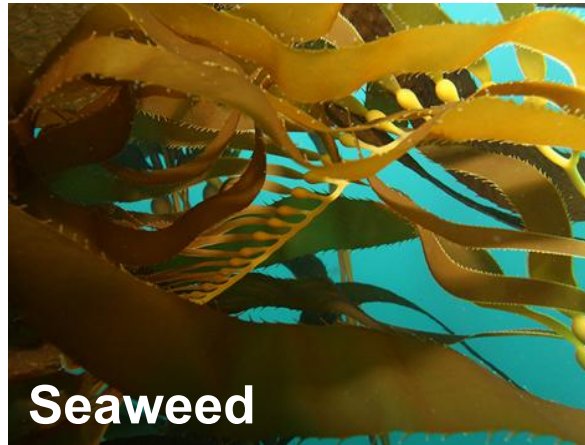


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WPFMC requests aquaculture program

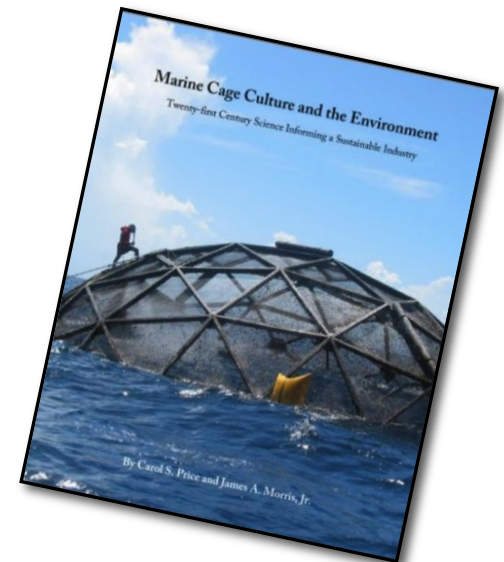
- Since 2008, the WPFMC has made several recommendations to NMFS for an aquaculture program.
- The WPFMC is undertaking analyses to consider support for amending the five regional fishery ecosystem plans (FEPs) to establish a management program for aquaculture fisheries under the Magnuson-Stevens Fishery Conservation and Management Act.
- NMFS, with a hired contractor, is preparing a Programmatic Environmental Impact Statement (PEIS) to analyze the potential environmental impacts of a proposed Pacific Islands Region aquaculture management program and alternatives.

U.S. Leadership in Research and Innovation



Science for Management

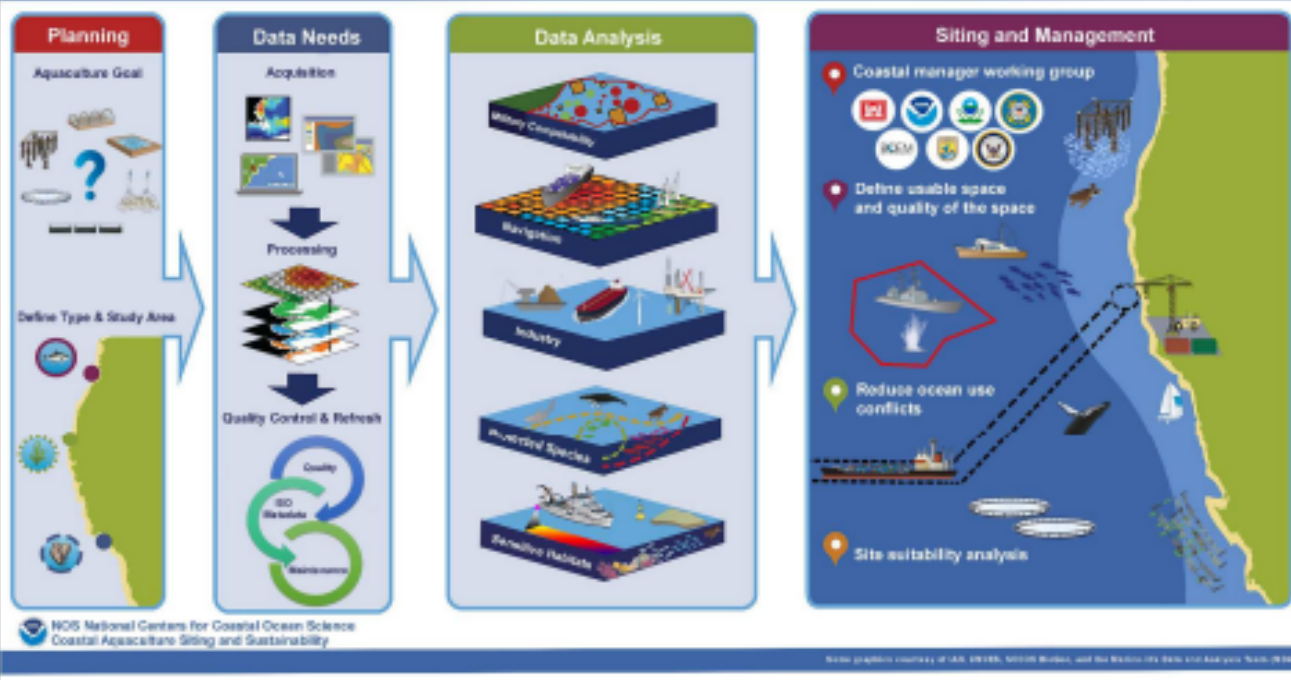
- Regional Siting Models
- Water Quality/Benthic Models
- Genetic Effects of Escapes - OMEGA model
- Ecosystem Services of Shellfish Farming
- Effects of Ocean Acidification, Changing Ocean Conditions
- Pathogen and Parasite Vectors



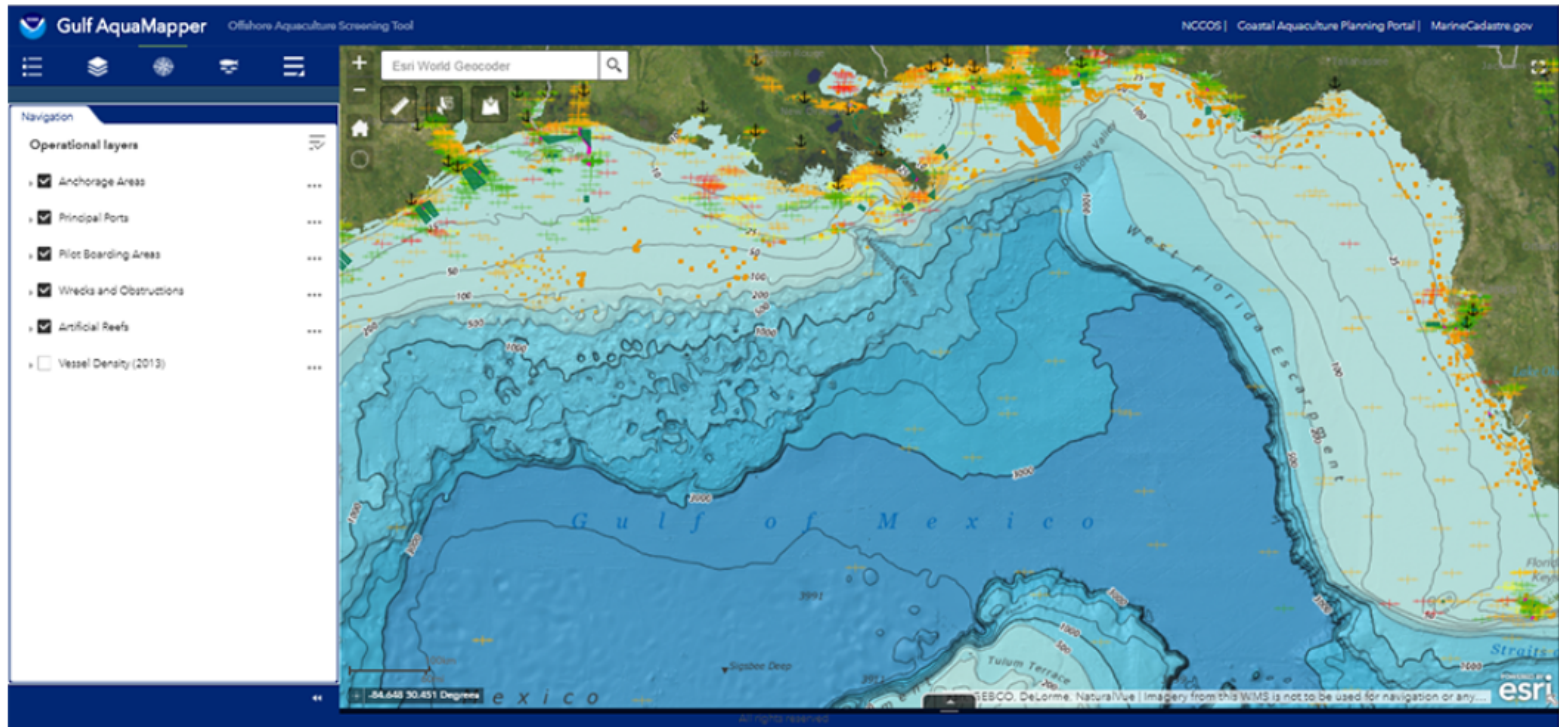
4. R&D, Technology Transfer, and Extension Examples

- Shellfish Hatchery Techniques, Algae Starters, Probiotics
- Sablefish and Yellowtail Farming
- Marine Feed Ingredients
- Abalone and Native Oyster Restoration
- Fisheries enhancement
- Seaweed Farming
- Genetics

Coastal Aquaculture Siting



Location, Location, Location!



A screenshot of the Gulf AquaMapper tool's online interface, which provides data to help with permitting and siting of potential offshore aquaculture ventures. Credit: NOAA.

This product was developed in partnership with marinecadastre.gov, and similar products are in development for other regions across the United States.

The Gulf AquaMapper is one of many coastal planning tools designed to assist managers, planners, and industry with sustainable aquaculture development, all of which can be found on NCCOS's [Coastal Aquaculture Planning Portal](#).

For more information, contact James.Morris@noaa.gov.

Building the Nation's Aquaculture Spatial Infrastructure

1

Regional Geodatabases

Gulf of Mexico

Northeast

Northwest

Southern CA Bight

Hawaii

USVI,

Puerto Rico

Alaska

March 2018

2

Mariculture Spatial Atlas

Entire US EEZ

November 2018

3

Aquaculture Planning Areas

Gulf of Mexico

Northeast US

Hawaii

Alaska

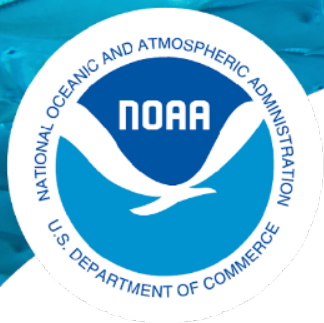
2019

Coastal Aquaculture Planning Portal



- The Coastal Aquaculture Planning Portal (CAPP) is a toolbox of coastal planning tools designed to assist managers, planners, and industry with sustainable aquaculture development.
- The portal is a centralized, user-friendly, and cost-effective repository for aquaculture tools that are required by coastal communities for aquaculture planning and development.

Gulf of Mexico Aquaculture FMP



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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Southeast Regional Office

- Home
- About Us
- Science Center
- PROGRAMS**
- Fishing Permit Applications
- Fisheries
- Grants
- Habitat Conservation
- Highly Migratory Species
- Office of Law Enforcement
- Operations, Management & Information Services
- Protected Resources
- Commercial Fishing
- Recreational Fishing
- News Room
- Fishery Bulletins
- Stock Assessments
- Annual Catch Limits (ACL) Monitoring
- Outreach & Education
- National Environmental Policy Act (NEPA)
- Freedom of Information Act

Home » Fisheries » Gulf Fisheries



Photo Credit: Snapperfarm

Fishery Management Plan for Regulating Offshore Marine Aquaculture in the Gulf of Mexico (Gulf Aquaculture Plan)

The purpose of the Gulf Aquaculture Plan is to maximize benefits to the Nation by establishing a regional permitting process to manage the development of an environmentally sound and economically sustainable aquaculture industry in federal waters of the Gulf of Mexico. The Gulf Aquaculture Plan allows up to 20 offshore aquaculture operations to be permitted in federal waters of the Gulf over a 10-year period.

The final rule published on January 13, 2016. To download a copy of the final rule, see the 'Rulemaking' section below.

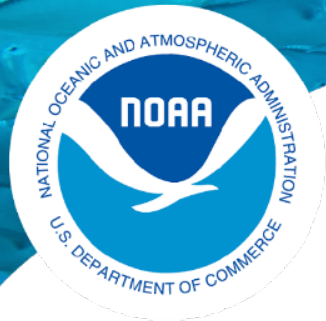
To reach the Regional Aquaculture Coordinator, please call 727-824-5301.
nmfs.ser.aquaculture@noaa.gov

Gulf Aquaculture Permit (GAP) Application Information

Rulemaking

- Permit Applicant Guide (UPDATED June 3, 2016)

- Final Rule



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Gulf of Mexico Aquaculture FMP Guidance

- [GAP Application Forms](#)
 - [Federal Permit Application for Offshore Aquaculture in the Gulf of Mexico](#)
 - [Certification for Broodstock and Juveniles](#)
- [Guidance Documents](#)
 - [Baseline Environmental Survey](#)
 - [Assurance Bond](#)
 - [Genetic Requirements](#)
- [List of Gulf Council Managed Species](#) (Note: shrimp and coral species can not be cultured under the Final Rule)

- [Proposed Rule](#)

Management Plan

- [Gulf Aquaculture Plan](#)
- [Fishery Management Plan Consistency Analysis](#)
- [Record of Decision \(ROD\)](#)
- [Draft Supplemental Information Report](#)
- [Final Supplemental Information Report](#)
- [Draft Supplement to the FPEIS for the Gulf Aquaculture Plan](#)
- [Final Supplement to the FPEIS for the Gulf Aquaculture Plan](#)

More Information

- [Aquaculture in the Southeast Region](#)
- [NOAA Aquaculture Program Webpage](#)
- [Gulf Council's Aquaculture Webpage](#)
- [Letter to the Gulf Council regarding the Status of the Gulf Aquaculture Plan](#) (September 3, 2009)
- [Gulf Aquaculture Plan Press Release](#) (September 3, 2009)
- [NOAA Marine Aquaculture Policy Press Release](#) (June 9, 2011)
- [NOS/NCCOS Coastal Aquaculture Planning Program](#)

Challenge to the Final Rule

Gulf Fisherman's Assoc. v. NMFS (E.D. La.)

- Filed by environmental and fishing organizations.
- Violation of MSA
 - Lack of statutory authority
 - Inconsistent with NS1, NS4, NS5, NS8, and NS9.
 - Fails to protect EFH
 - Violated procedural requirements
- Violation of ESA
 - NLAA determination was arbitrary and capricious
- Violation of NEPA
 - Overly narrow purpose
 - Failure to ensure evaluation of site-specific impacts
 - Failure to take a “hard look”
- Case fully briefed and argument held in March 2018.

Regulatory Framework for Federal Waters Aquaculture

Location, navigation: permit from US Army Corps of Engineers

Discharge: permit from US EPA US Fisheries Law for fish farms

Fisheries management: permit from NOAA for “federally managed species” under the Magnusson Stevens Act)

Take-away Messages

- The U.S. could significantly increase marine aquaculture production.
- Aquaculture is the fastest growing food production system in the world and plays an important role in food security.
- Stakeholders are asking NOAA to help expand seafood farming.
- Aquaculture, done right, benefits communities and the environment.



Questions?

Kevin Madley
GAR Aquaculture Coordinator
kevin.madley@noaa.gov



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Next Steps

- Decide preferred path for EEZ aquaculture mgmt. and permitting path for the Atlantic
- Aquaculture Committee revival in NEFMC and creation in ASMFC and MAFMC?
- Working group among NEFMC, MAFMC, ASMFC?
- Compare the Gulf Plan for Aquaculture and the planned PIRO PEIS

Background

- Background Information and Recommendations for New England Fishery Management Council Development of an Aquaculture Policy and Management Strategy, September 1995. William Brennan hired consultant to NEFMC, formerly of Maine DMR, NMFS, and legal assistant in the US House of Representatives.
- To Be Or Not To Be Involved: Aquaculture Management Options For The New England Fishery Management Council. Ocean & Coastal L.J. 1996. William J. Brennan.
- **Joint NEFMC/Federal Agency Aquaculture Administration Process, Draft 1997 which was prompted in part by the S-K grant funded SeaStead project to research/culture sea scallops (Smolowitz et al. put gear in the water in 1997)**
- Guidance Relative to Development of Responsible Aquaculture Activities in Atlantic Coast States November 2002. Special Report No. 76 of ASMFC pursuant to NOAA awards.
- Ecosystem-based management and jurisdictional issues surrounding non-fisheries offshore marine services: LNG terminals, aquaculture and wind farming. Memo to NEFMC members. September 2005. Laura Welles, Maine-based attorney under contract to NEFMC.



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NEFMC Aquaculture Policy

- Introduction
- Background
- Administrative Process
 - Phase 1 – Pre-application and Review
 - Application
 - Coordination
 - Notice
 - Public Meeting
 - Council Review
 - Council Findings
 - Phase 2 – Formal Application
 - EPA, NMFS, US Coast Guard, and others
 - Phase 3 – FMP Amendment and Framework Adjustment

NEFMC Aquaculture Policy

This policy sets forth NEFMC's authority under the MSA and the key objectives in facilitating the permitting of offshore aquaculture. The policy objectives include:

- (1) The NEFMC will address those issues that are clearly germane to the Council's fishery management role and will work with other federal agencies involved in aquaculture to identify and minimize or eliminate areas of potential overlap.
- (2) The NEFMC will position itself as a point of contact for aquaculture developers, to provide information and federal permit application materials, and to provide recommendations to developers which may help avoid projects or elements of those projects that would otherwise pose conflicts with the Council's management activity.
- (3) The NEFMC will seek advice and guidance from representatives of both the aquaculture and fishing industries, the conservation community and other resource management agencies in formulation of aquaculture management strategies so as to minimize or eliminate the potential for use conflicts.





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NMFS SERO Aquaculture FMP Guidance

Current mid-Atlantic project proponents are using the Gulf Aquaculture Plan as guidance for:

Baseline Environmental Surveys; and possibly,
Genetic Requirements

Guidance can be reviewed at

http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/aquaculture/



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Benefits of this Approach for Northeast

- Clear, consistent guidance and process for applicants
- Clear, consistent criteria for review and approval of applications
- 1-stop shop for applicants
 - All relevant agencies coordinated
 - Council PEIS covers NEPA for permitted activities
- Limits and conditions developed by Council
 - Maintain consistency with Council intent
 - Ensure consideration of wild harvest fisheries
 - Public process for development and future changes

Comparison of NEFMC Aquaculture Policy with the Gulf FMP for Aquaculture



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- Clear, consistent guidance and process for applicants
- Clear, consistent criteria for review and approval of applications
- 1-stop shop for applicants
 - All relevant agencies coordinated
 - Council PEIS covers NEPA for permitted activities
- Limits and conditions developed by Council (MSY, OY)
 - Maintain consistency with Council intent
 - Ensure consideration of wild harvest fisheries
 - Public process for development and future changes