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Habitat and Ecosystem Services Division Greater Atlantic Region Updates



Mid-Atlantic Fishery
Management Council
Dec 2022

<https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/habitat-conservation-and-stewardship-greater-atlantic>

Habitat and Ecosystem Services Division (HESD) Updates

- Aquaculture
- Infrastructure
 - Coastal Storm Risk Management Projects
 - Ports/Offshore Wind Ports
- Offshore Wind



Source: Wikimedia Commons



Block Island Wind Farm
credit: Dennis Schroeder / NREL



Source: US. Army Corps of Engineers

Regional Aquaculture Update



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Status of Aquaculture Projects in Federal Waters



Pacific Ocean

- Ocean Rainforest - CA
- Pacific Ocean Aquafarm - CA

Northern Atlantic

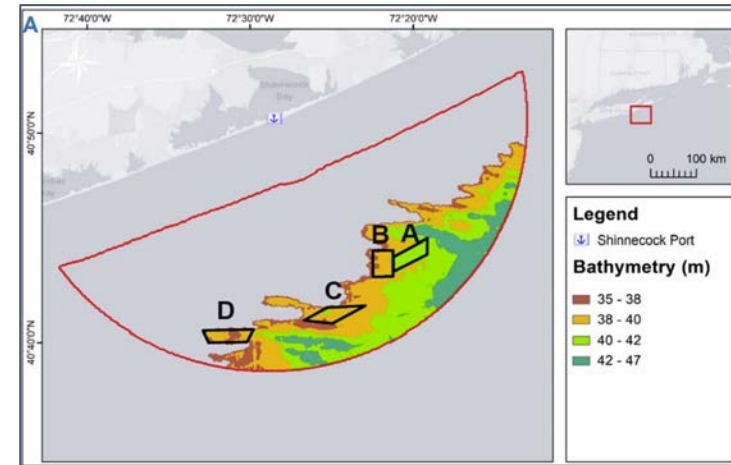
- Blue Water Fisheries - MA
- Salem State University - MA
- Rutgers Surf Clam - NJ
- Manna Fish Farm - NY

Gulf of Mexico

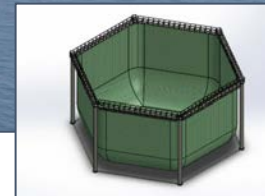
- Ocean Era - FL
- Manna Fish Farm - FL

Manna Fish Farms LLC (MFF)

- MFF proposes to construct a commercial-scale marine finfish aquaculture facility within federal waters ~ 9 miles SE of Shinnecock Inlet, NY in water depths ~40m.
- As proposed, the facility will occupy a 400-acre site. The site would hold 12-18 net pens at full build out. The pens will remain submerged below the surface except when being actively serviced.
- MFF plans to initially deploy and operate two pens. At full build out MFF would operate 18 pens that would produce up to 9 million pounds of fish.
- Operations will occur continuously throughout the year and will be based out of Shinnecock Bay, NY.

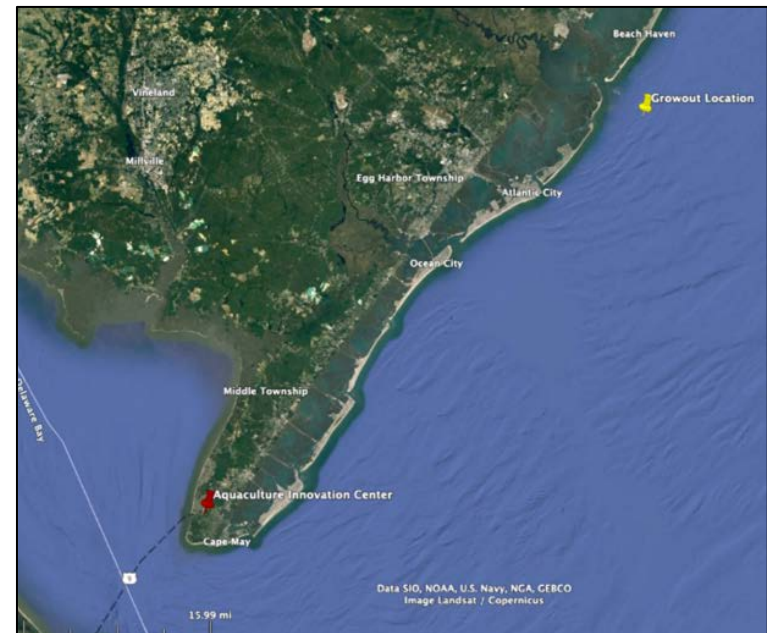
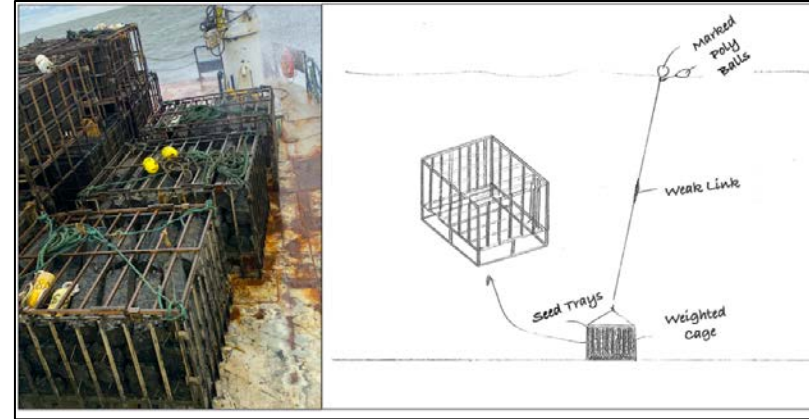


Proposing 391 acre site (western portion of polygon A) off Shinnecock Inlet, Long Island



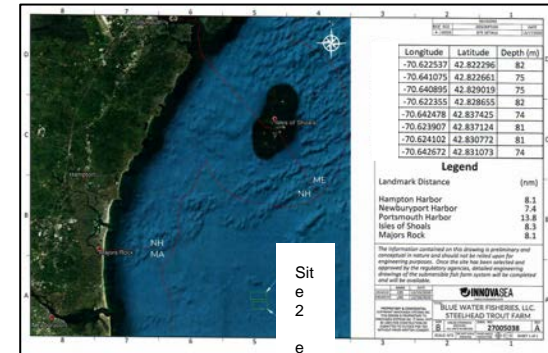
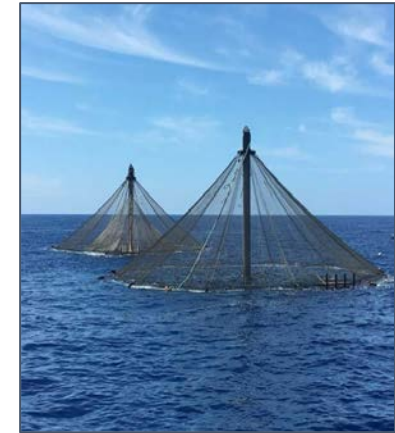
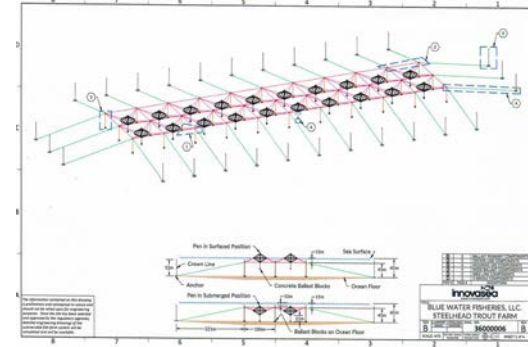
Rutgers Surf Clam Pilot Project

- Rutgers/Surfside/Seawatch/ACF project funded by Sea Grant
- Permitted by USACE under NWP 48
- The project is proposing to outplant surf clam pH and temp tolerant surf clam seed from Rutgers AIC hatchery in federal waters ~3 miles off Atlantic City NJ to evaluate feasibility of offshore surf clam culture. Can also inform feasibility of stock enhancement
- Seed will be placed in bags housed within 10- 6' 9" x 6' 9" (3' high) metal cages constructed of 1" galvanized steel square box tubing.
- Cages would rest on the bottom in depths approximately 10 to 15 m with a minimum spacing of at least 30 feet between cages.



Blue Water Fisheries LLC (BWF)

- BWF proposes to construct a commercial-scale marine finfish aquaculture facility within federal waters ~ 7.5 miles ENE of Newburyport Harbor in water depths ~80m.
- As proposed, the facility will occupy two 265-acre sites. At each site there will be 20 submersible net pens in a 2 x 10 grid. The pens will remain submerged approximately 15 m below the surface except when being actively serviced.
- BWF plans to initially deploy and operate four pens. At full operation BWF expects to operate 40 pens that will produce up to 25.6 million pounds of a combination of steelhead trout (*Oncorhynchus mykiss*) and Atlantic salmon (*Salmo salar*) annually. Lumpfish (*Cyclopterus lumpus*) will also be stocked in the pens to manage external parasites on cultured fish.
- Operations will occur continuously throughout the year and will be based out of Portsmouth, NH.

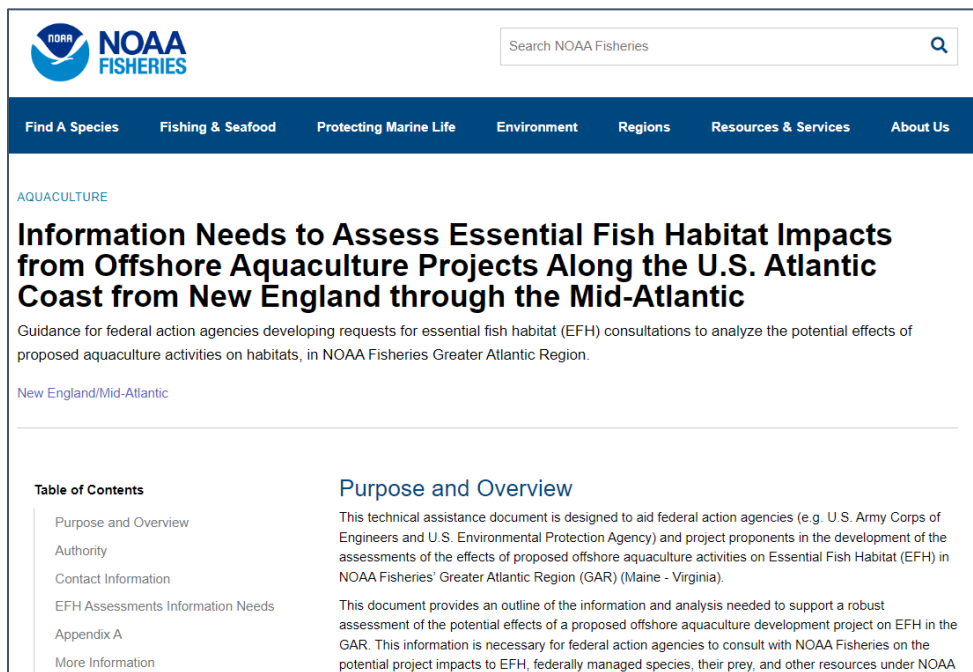


Site
2
2
1

MSA Considerations Associated with the Addition of Atlantic Salmon

- In September, the NEFMC voted to initiate of a framework adjustment of the A. salmon FMP with the goal of:
 - *Allowing for the implementation of Atlantic salmon aquaculture projects through the adjustment of the management measures prohibiting the possession and harvest of wild Atlantic salmon in the EEZ. If necessary, add or adjust other management measures to ensure aquaculture projects in the EEZ are conducted in a manner consistent with the goals and objectives of the Atlantic Salmon Fishery Management Plan.*
- This action is intended to apply to BWF and other proposed operations

New Regional EFH/ESA Aquaculture Guidance for Aquaculture



The screenshot shows the NOAA Fisheries website interface. At the top left is the NOAA Fisheries logo. A search bar is located at the top right. Below the logo is a navigation menu with links: Find A Species, Fishing & Seafood, Protecting Marine Life, Environment, Regions, Resources & Services, and About Us. The main content area is titled "AQUACULTURE" and features the document title: "Information Needs to Assess Essential Fish Habitat Impacts from Offshore Aquaculture Projects Along the U.S. Atlantic Coast from New England through the Mid-Atlantic". Below the title is a brief description: "Guidance for federal action agencies developing requests for essential fish habitat (EFH) consultations to analyze the potential effects of proposed aquaculture activities on habitats, in NOAA Fisheries Greater Atlantic Region." A "Table of Contents" section is visible on the left, listing: Purpose and Overview, Authority, Contact Information, EFH Assessments Information Needs, Appendix A, and More Information. The "Purpose and Overview" section is expanded, providing a detailed description of the document's purpose.

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). The Greater Atlantic Regional Fisheries Office consults on aquaculture projects occurring from Maine through Virginia. While the federal agency is responsible for developing and submitting the BA to NMFS PRD for section 7 consultation, this document will also inform aquaculture proponents about the information needs related to their action in regards to avoidance and minimization of effects on ESA listed species.

General guidance on carrying out ESA Section 7 consultation in the GAR is available at: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-aquaculture-greater-atlantic-region>.

The statutory requirements for Biological Assessments and requests for consultation are described at 84 FR 44976 (August 27, 2019) and [50 CFR 402.12](#).

This document outlines the information necessary to support a robust analysis of the effects of a proposed aquaculture activity on ESA-listed species and designated critical habitat. This list is not project specific and may not capture all information needs for all projects, but is intended as a guide. In addition, the information needed to produce an adequate and complete BA will vary due to a number of factors such as project scope and size, location (e.g., estuary/bay, inshore, offshore), type of operation, etc. For each project, we expect that any description of baseline information or analysis of the potential effects of any action will be comprehensive and based on the best available scientific information. We understand that gear- and site-specific information may sometimes be limited; in those instances, the best reasonable proxy should be provided with an explanation for why any necessary assumptions are reasonable. We also recognize that quantitative analyses are not always possible; in those cases, qualitative assessments should be provided with a robust explanation of any underlying assumptions or data gaps. For all activity descriptions, include as much detail as possible including relevant measures to reduce impacts and monitoring and reporting requirements that are part of the proposed action.

For technical assistance¹ on NMFS trust resources, contact your [regional PRD contact](#). If you do not know your contact is, please contact nmfs.gar.esa.section7@noaa.gov.

For each specific information need/stressor listed, we have included sub-topics with specific aspects to include/consider/analyze.

¹ Technical assistance includes information on protected species present in the action area and potential stressors the species may encounter as a result of the project.

<https://www.fisheries.noaa.gov/new-england-mid-atlantic/aquaculture/information-needs-assess-essential-fish-habitat-impacts>


https://media.fisheries.noaa.gov/2022-03/ESAInfoforAquaculture_508.pdf

NOAA Aquaculture Library

fisheries.noaa.gov/national/aquaculture/aquaculture-library

Fact Sheets

- [Antibiotic Use in Finfish](#)
- [Aquaculture and Environmental Interactions](#)
- [Aquaculture Opportunity Areas](#)
- [Aquaculture Provides Beneficial Ecosystem Services](#)
- [Climate Resilience and Aquaculture](#)
- [Disaster Assistance for Fisheries](#)
- [Harmful Algal Bloom Impacts on Aquaculture](#)
- [Marine Aquaculture in the U.S.](#)
- [Potential Risks of Aquaculture Escapes](#)
- [Regulation of Marine Aquaculture](#)
- [Shellfish Aquaculture and Cultural Ecosystem Services](#)
- [Sustainable Aquaculture Feeds and Fish Nutrition](#)




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Office of Aquaculture

Shellfish and seaweed aquaculture can increase food production, create economic opportunities in coastal areas, and enhance natural harvests.

These aquatic crops provide important ecosystem services that can improve water quality around farm sites.

Aquaculture farms can also provide habitat for fish and crustaceans, benefiting wild populations.



Aquaculture Provides Beneficial Ecosystem Services


REMOVING NITROGEN, IMPROVING WATER QUALITY

Nitrogen is an essential nutrient, but too much of it in water—often from excess fertilizer in runoff—boosts the growth of algae. Algae overwhelms water bodies and reduces oxygen levels, killing fish, crabs, lobsters, and other aquatic life. Fortunately, shellfish aquaculture has emerged as a promising, low-cost tool to help improve water quality.

Around the nation, shellfish and seaweed farms (many of which are family-owned) are providing sustainable seafood and improving the surrounding environment. These farms are described as “low-to-no input,” because feed, fresh water, and fertilizer typically aren’t necessary for their crops. By raising shellfish and seaweed, farms improve access to local seafood and mitigate the harmful effects of excess nutrients, ocean acidification, and habitat loss.

As shellfish filter feed, they remove nitrogen by incorporating it into their shells and tissues. An adult oyster can filter up to 50 gallons of water a day, while a large quahog can clean about 24 gallons of water a day. A farm with 100,000 oysters per acre can potentially filter up to 5,000,000 gallons of water per day, per acre.

NOAA scientists are studying the nitrogen removal that shellfish aquaculture can provide to coastal communities. Coastal communities are increasingly adding shellfish aquaculture to help meet water quality goals. Waterfronts along the Chesapeake Bay and on Cape Cod are looking into seeding and growing shellfish as a way to reduce excess nitrogen in their local waters.



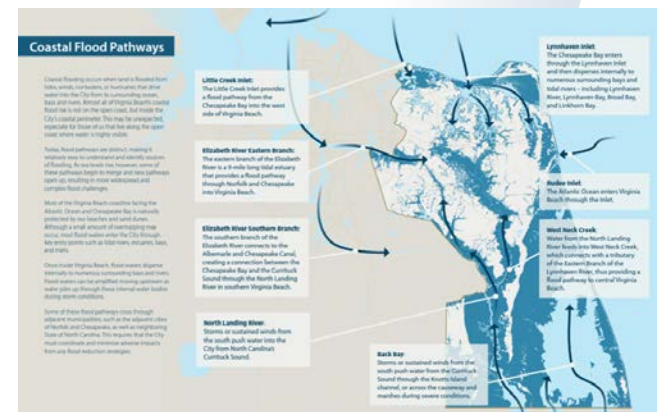
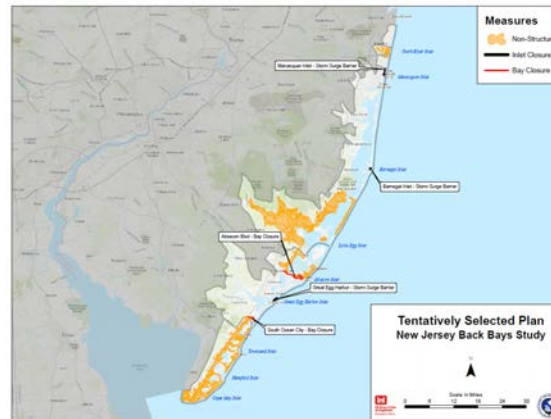
Infrastructure Updates



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USACE Coastal Storm Risk Management Studies

- New York-New Jersey Harbor and Tributaries Study - <https://www.nan.usace.army.mil/Missions/Civil-Works/Projects-in-New-York/New-York-New-Jersey-Harbor-Tributaries-Focus-Area-Feasibility-Study/>
- New Jersey Back Bays Study <https://www.nap.usace.army.mil/Missions/Civil-Works/New-Jersey-Back-Bays-Study/>
- Virginia Beach - <https://www.youtube.com/watch?v=47euY0twD1I>
<https://www.nao.usace.army.mil/About/Projects/VBCSRM/>



Infrastructure/Port Development

- NJ Wind Port at Hope Creek <https://nj.gov/windport/>
- Arthur Kill Marine Terminal <https://www.atlanticterminals.com/arthur-kill-terminal.html>
- South Brooklyn Marine Terminal <https://www.nan.usace.army.mil/Missions/Regulatory/Regulatory-Public-Notices/>



source: NJEDA



Source: Atlantic Offshore Terminals



Source: Equinor



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Offshore Wind Update

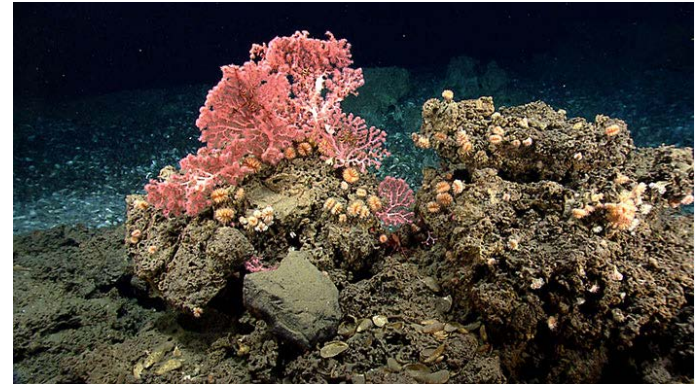


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Essential Fish Habitat Consultations

8 projects under review

- Ocean Wind
- Revolution Wind
- Empire Wind
- Sunrise Wind
- CVOW
- Atlantic Shores South
- New England Wind
- Mayflower Wind



Reviewing for completeness

Initiation of consultations have not yet begun



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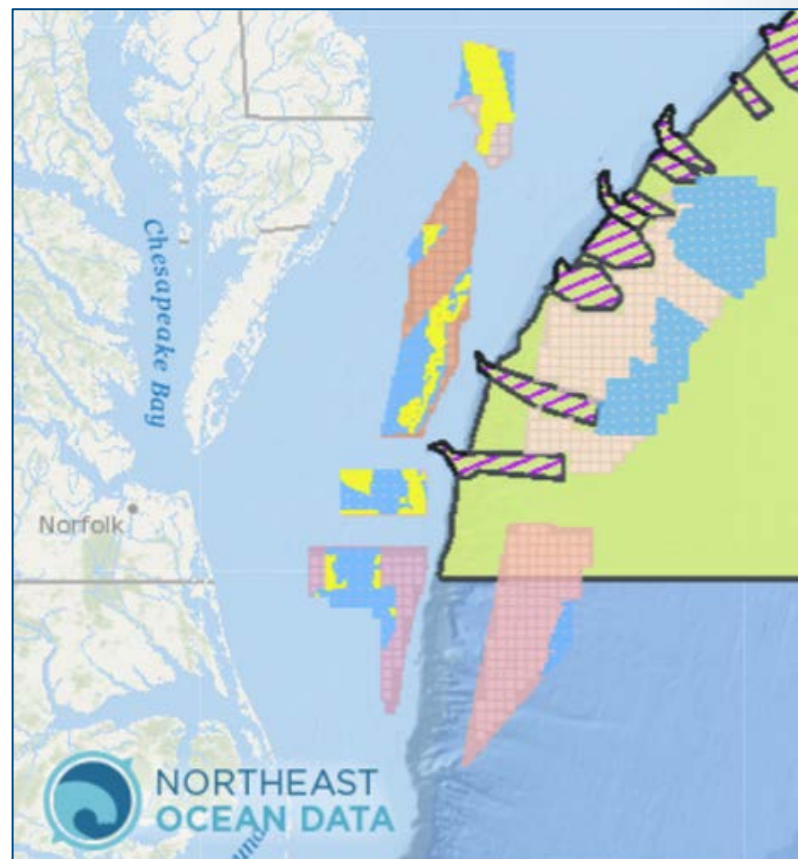
Central Atlantic Bight Call Areas

Modeling Role:

- Provide data
- Give technical advice

Concerns:

- Coral Protection Area
- Sensitive habitats
- Fishing operations
- Protected species interactions
- Cable transmission



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Projects Under Review

Empire Wind:

- DEIS Comments due January 17, 2023
- Public hearings: Dec. 13 @ 5pm, Dec. 15 @ 1pm

CVOW: DEIS expected to publish Dec. 16

Sunrise Wind: DEIS expected to publish Dec. 16

New England Wind: DEIS expected to publish Dec. 23



Source: www.workboat.com

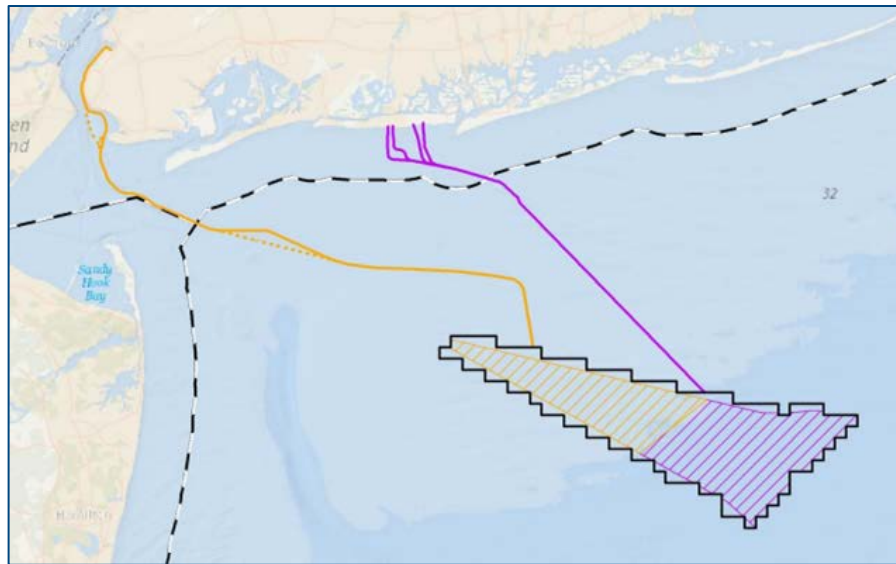


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Projects Under Review

Army Corps of Engineers public notices:

1. Empire Wind 1 cable landfall (Brooklyn)
 2. Empire Wind 2 cable landfall (Long Beach)
 3. Empire Wind South Brooklyn Marine Terminal
- Comments are due January 6, 2023

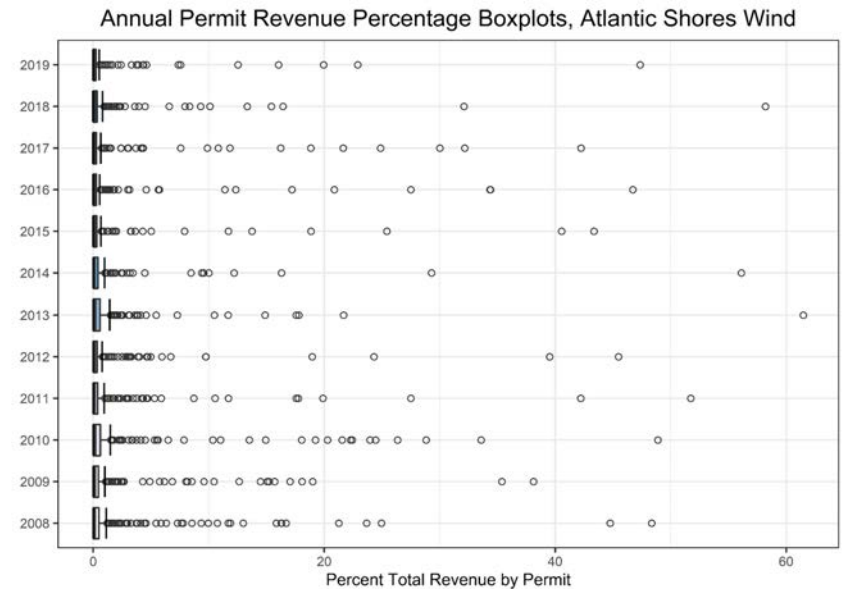
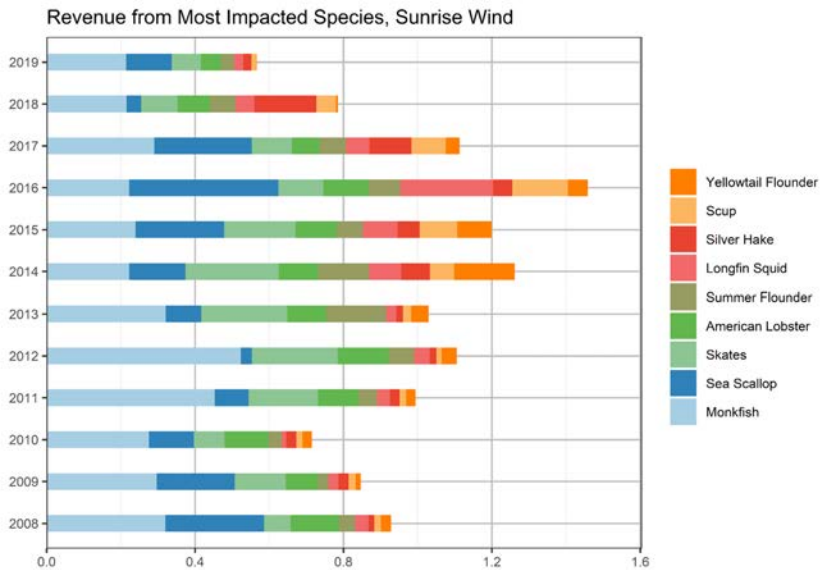


Source: BOEM



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Socioeconomic Reports



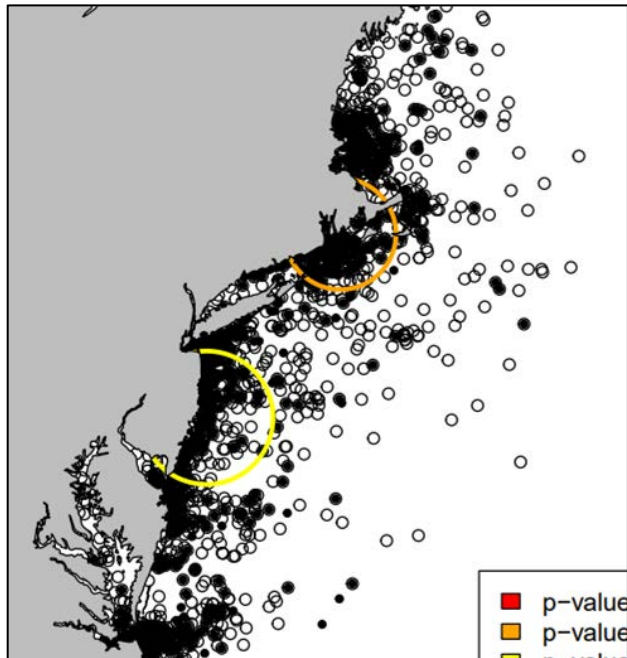
- Commercial and party/charter
- Annual landings/revenue
- FMP, species, gear, port, state
- Species/area dependence
- Vessel/trip and SBA counts
- Yearly regional % totals

**2020 and 2021 Data
Now Available**

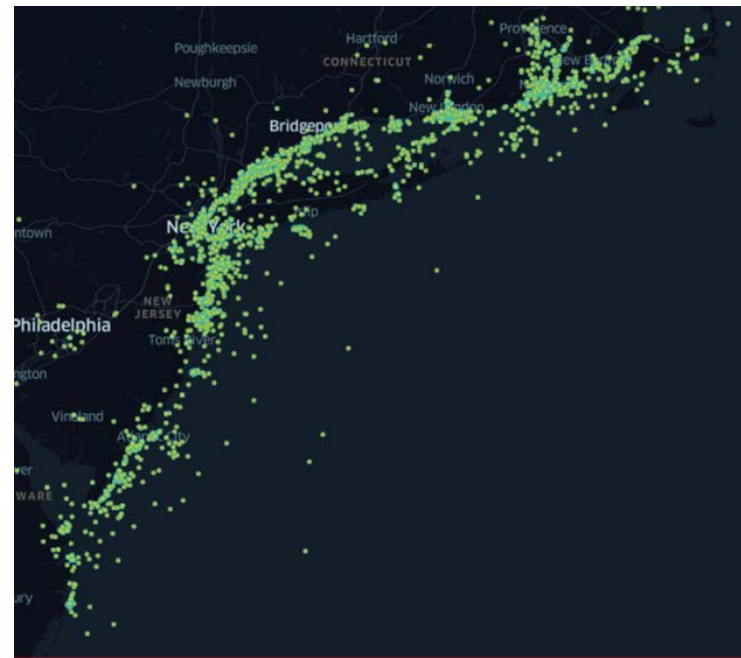


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Current/Future Socioeconomic Work



[FishRules App](#) Data - Black Sea Bass



[FishBrain App](#) Data - Black Sea Bass

- Use app data as a proxy for private angling effort
- Explore angler city origin and travel costs?
- Assess angling port communities and impacts?



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Future Socioeconomic Work?

Environmental Justice and Social Vulnerability

- Integrate NMFS Community Social Vulnerability Indicators into existing lease area reports
- Assess community vulnerability to offshore wind development impacts

Shoreside Impacts and Compensation Methods

- Identify methods to improve estimates/guidance
- Improve cumulative impact evaluations

Permit Valuation

- Explore permit valuation and potential changes due to management and wind project impacts



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