



Developing Offshore Wind in US Waters

Part 1: The Planning and Regulatory Framework - BOEM

July 19, 2023

BOEM Office of Renewable Energy Programs



Outline

- Historical framing
- Offshore wind industry - how has it developed and where are we now?
 - Energy Policy Act of 2005
 - Regulations Published in 2009
 - First round of offshore wind energy leases (2011-2015)
 - Current leasing goals

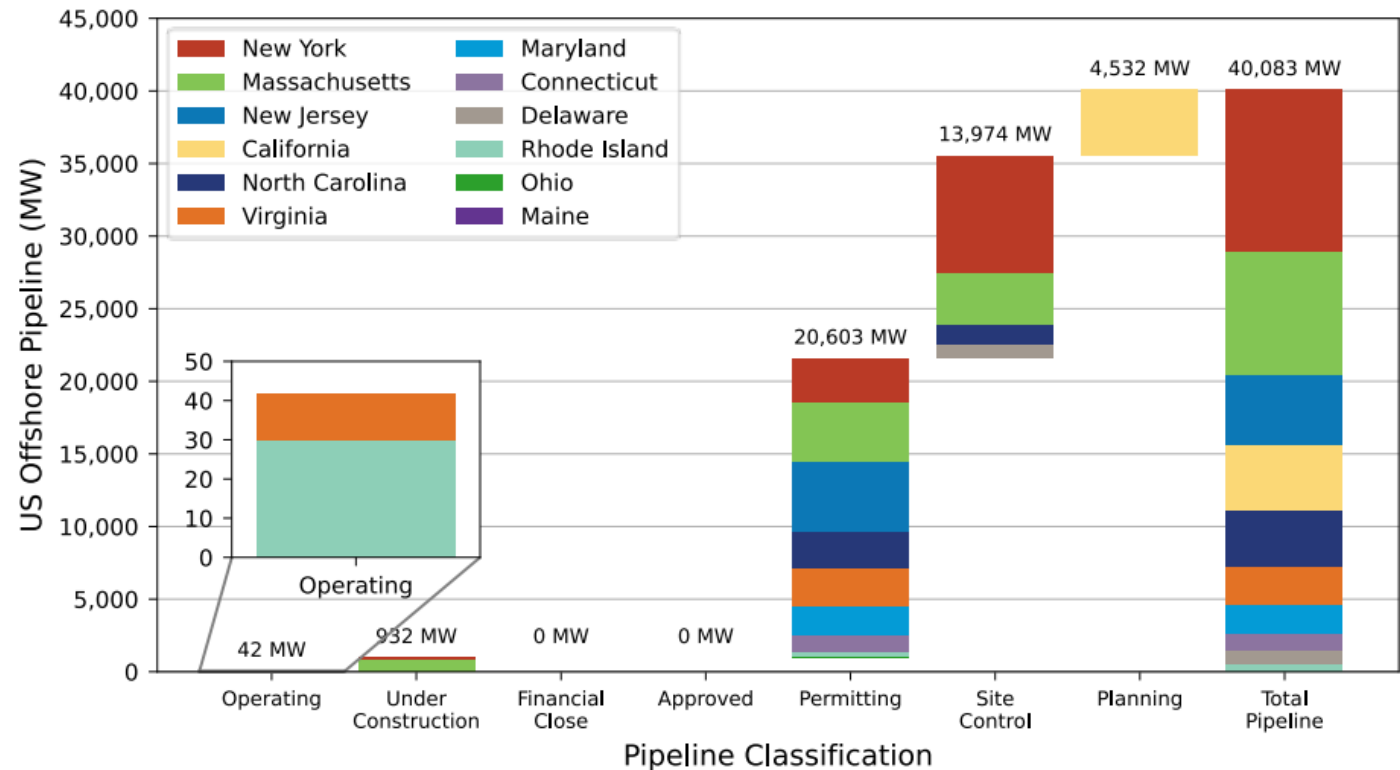


Figure 1. U.S. project pipeline classification by status

<https://www.energy.gov/sites/default/files/2022-09/offshore-wind-market-report-2022-v2.pdf>

BOEM Statutory Authority

- **“The Outer Continental Shelf (OCS) is a vital national resource reserve held by the Federal Government for the public, which should be made available for expeditious and orderly development, subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs.”**
 - **Outer Continental Shelf Lands Act (OCSLA) | Sec 3(3)**
- **“... may grant a lease [for] energy from sources other than oil and gas ... in a manner that provides for safety and protection of the environment.”**
 - **Energy Policy Act of 2005 | Sec. 388**

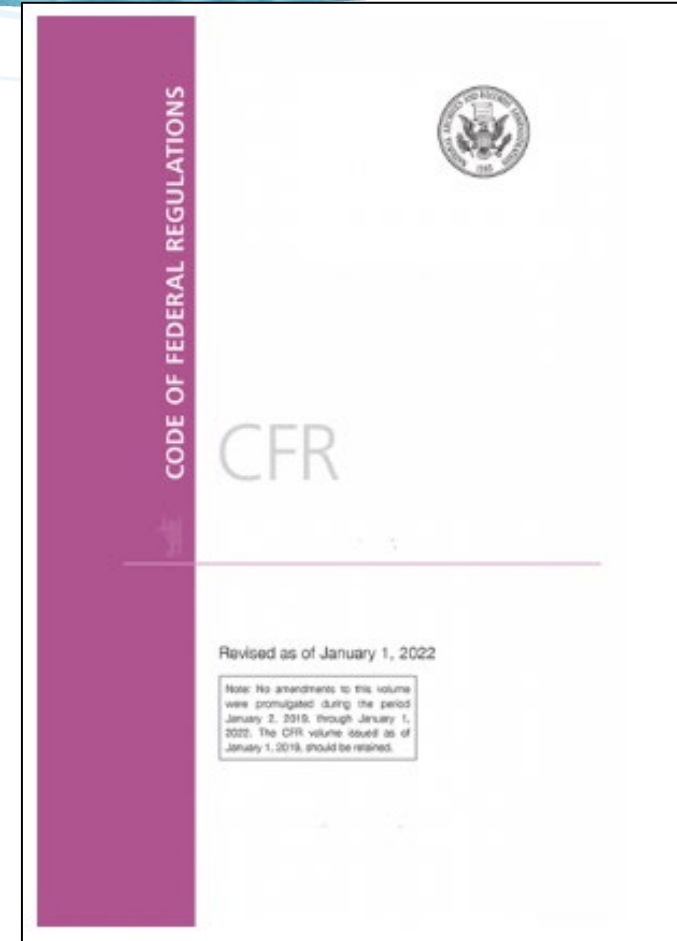
BOEM Statutory Authority

- **(4) Requirements**
- **The Secretary shall ensure that any activity under this subsection is carried out in a manner that provides for—**
- (A) safety;
- (B) protection of the environment;
- (C) prevention of waste;
- (D) conservation of the natural resources of the outer Continental Shelf;
- (E) coordination with relevant Federal agencies;
- (F) protection of national security interests of the United States;
- (G) protection of correlative rights in the outer Continental Shelf;
- (H) a fair return to the United States for any lease, easement, or right-of-way under this subsection;
- (I) prevention of interference with reasonable uses (as determined by the Secretary) of the exclusive economic zone, the high seas, and the territorial seas;
- (J) consideration of—
 - (i) the location of, and any schedule relating to, a lease, easement, or right-of-way for an area of the outer Continental Shelf; and
 - (ii) any other use of the sea or seabed, including use for a fishery, a sealane, a potential site of a deepwater port, or navigation;
- (K) public notice and comment on any proposal submitted for a lease, easement, or right-of-way under this subsection; and
- (L) oversight, inspection, research, monitoring, and enforcement relating to a lease, easement, or right-of-way under this subsection.

○ **Energy Policy Act of 2005 | Sec. 388**

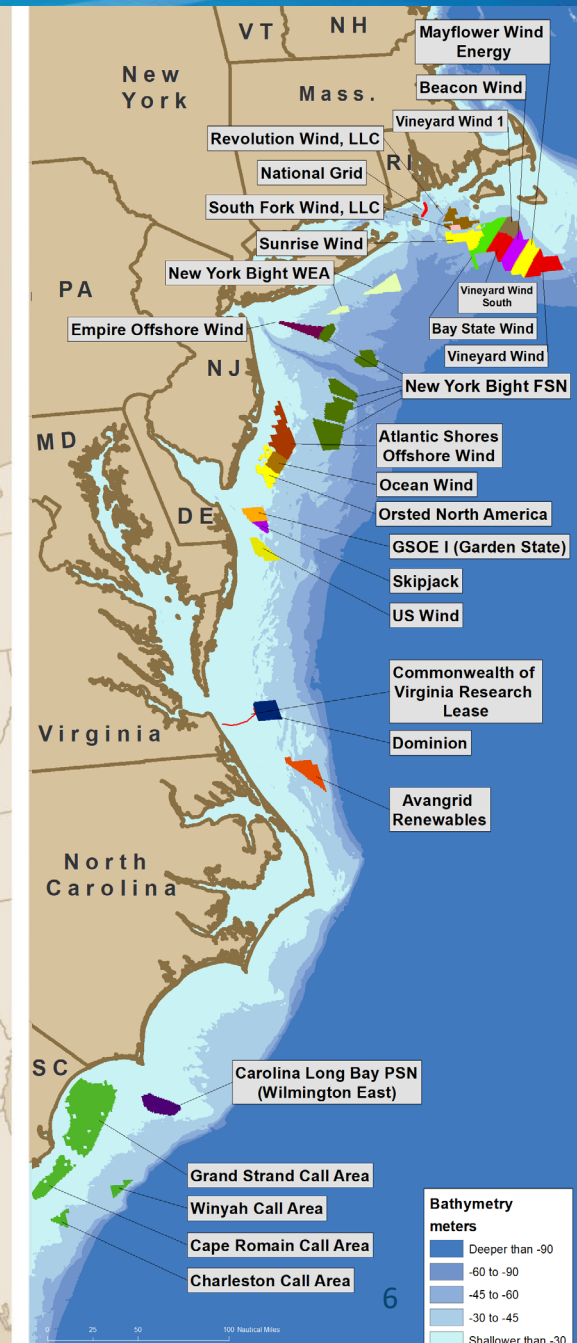
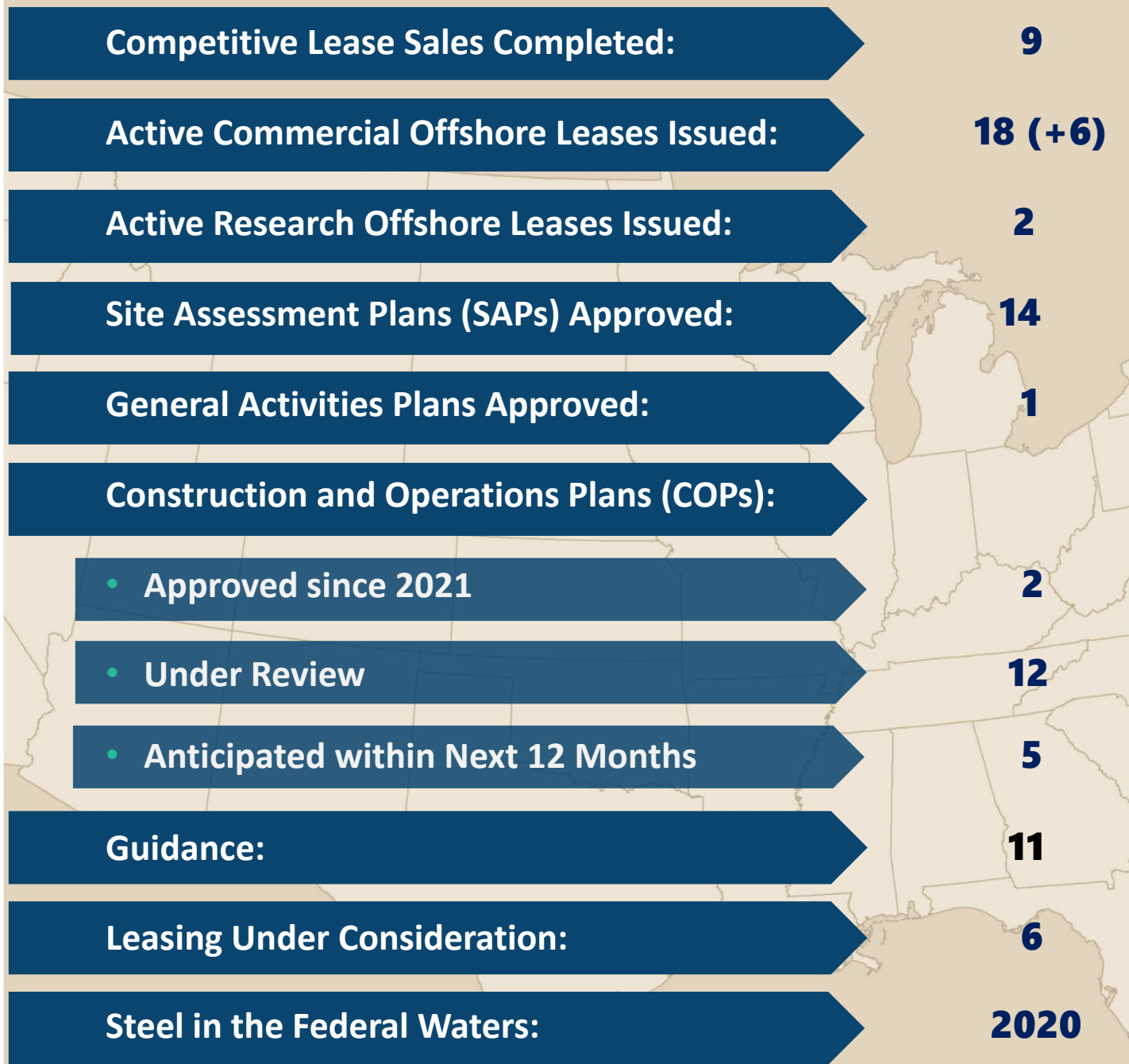
Offshore Wind Energy Regulations

- **30 CFR Part 585**
 - Contains process for obtaining a lease;
 - Financial assurance requirements;
 - Requirements for contents of plans, including construction and operations plans; and
 - Measures for lease cancellation

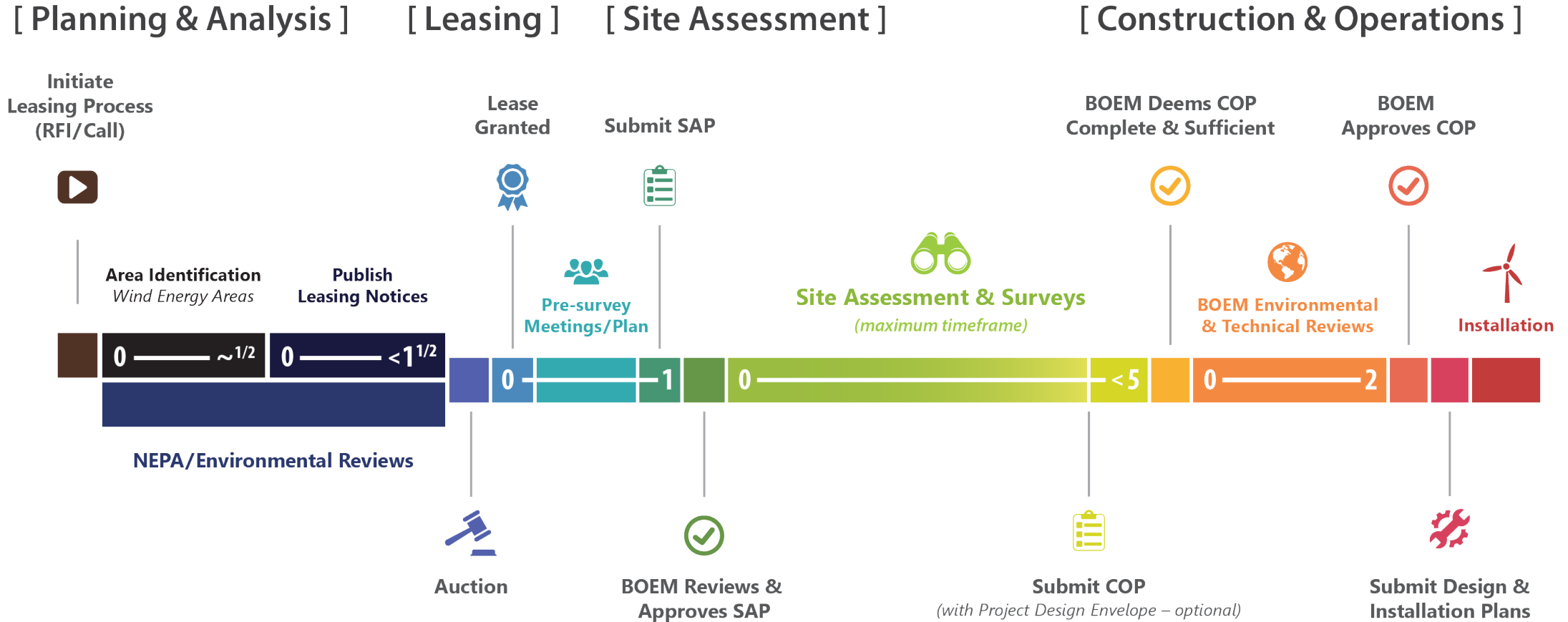


<https://bookstore.gpo.gov/products/t-30-pts-200-699-code-federal-regulations2022>

Renewable Energy Program by the Numbers

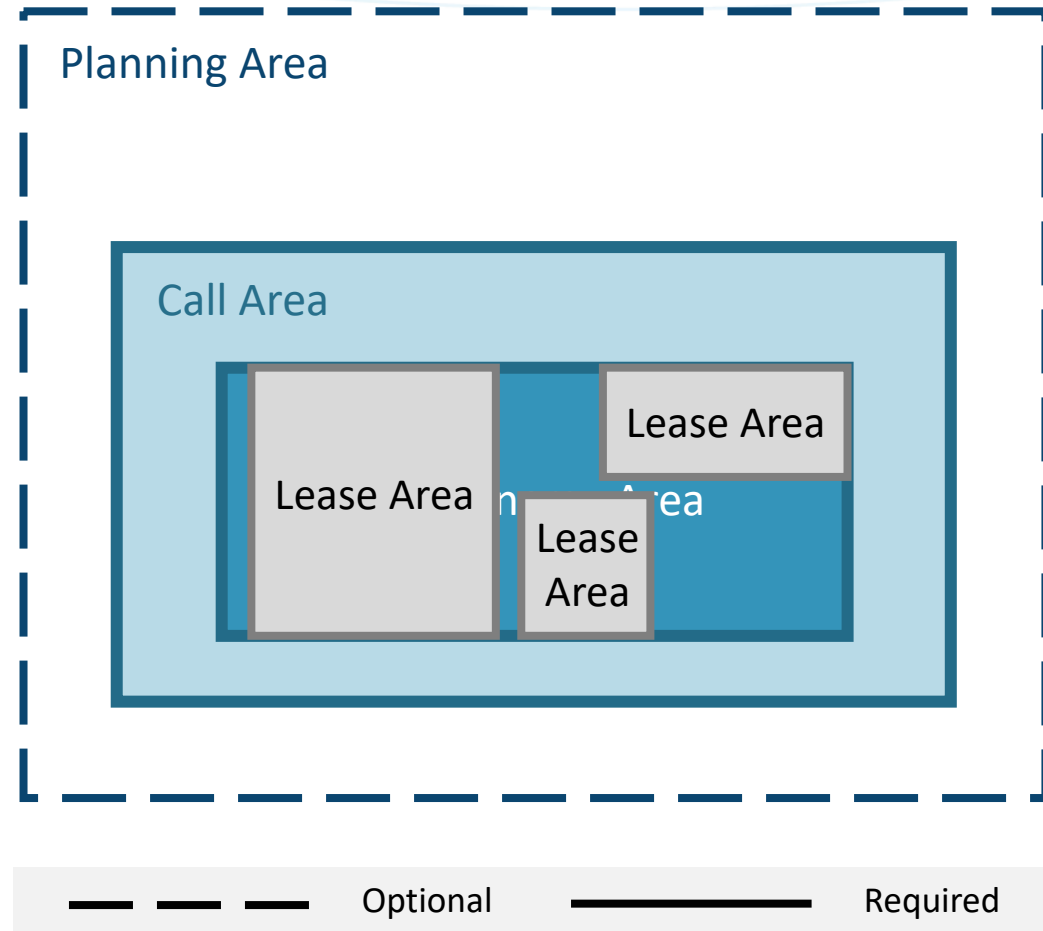


Renewable Energy Process: From RFI/Call to Operation

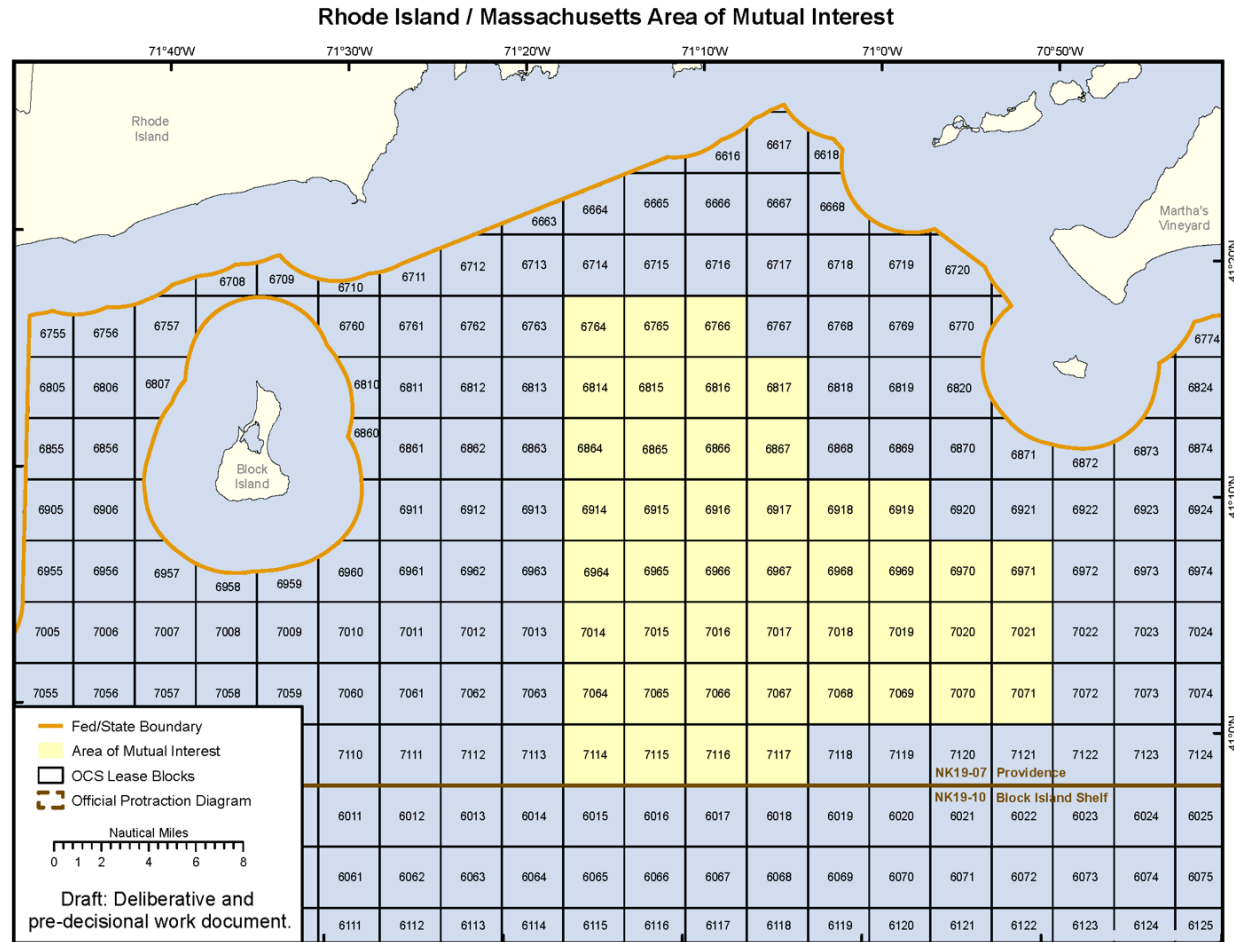


Area Identification Process: Winnowing

- Currently developing the Planning Area
- Wind Energy Areas (WEAs) have the potential for further division into Lease Areas
- Multiple sales can come from Wind Energy Areas

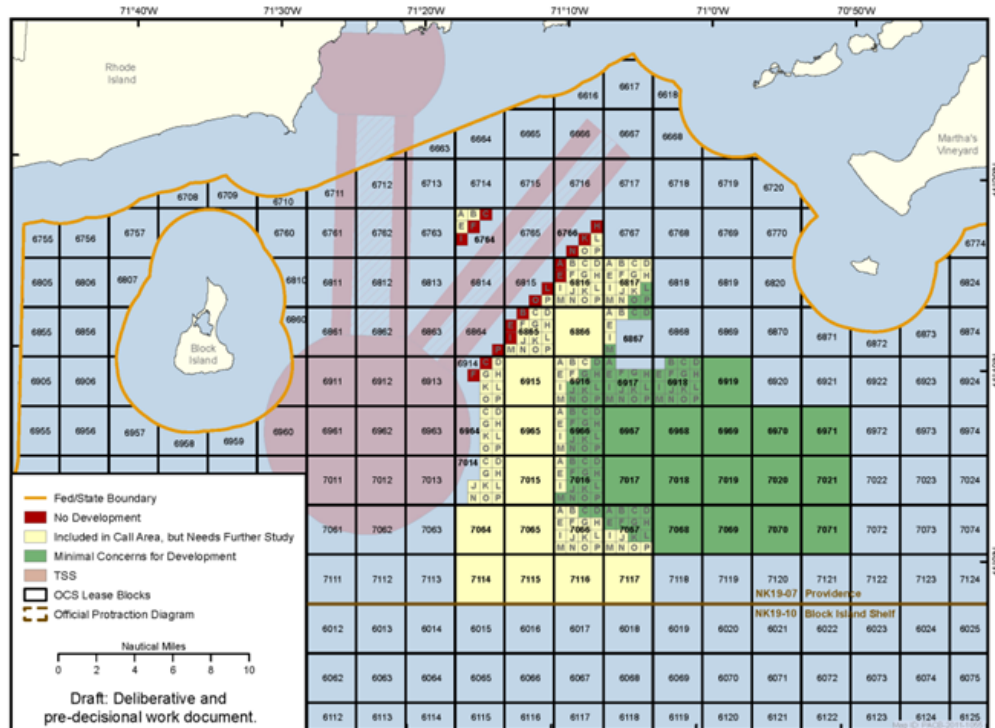


Example: Rhode Island/Massachusetts Leasing History

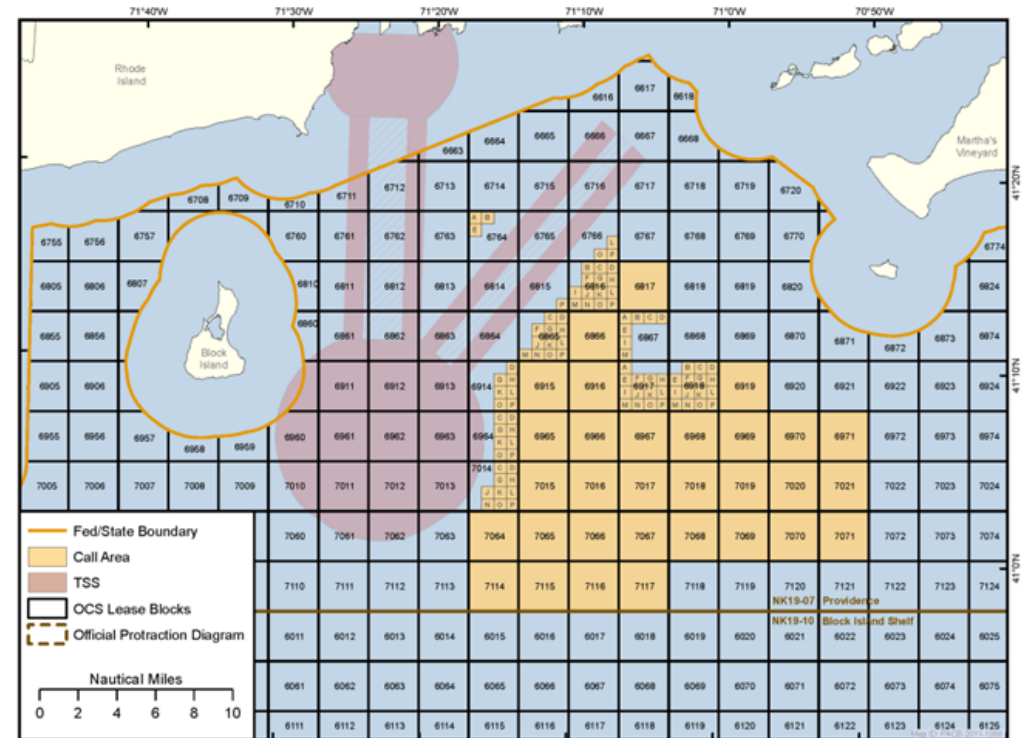


Example: Rhode Island/Massachusetts Leasing History

USCG Comments on the Draft Rhode Island, Massachusetts Call Area

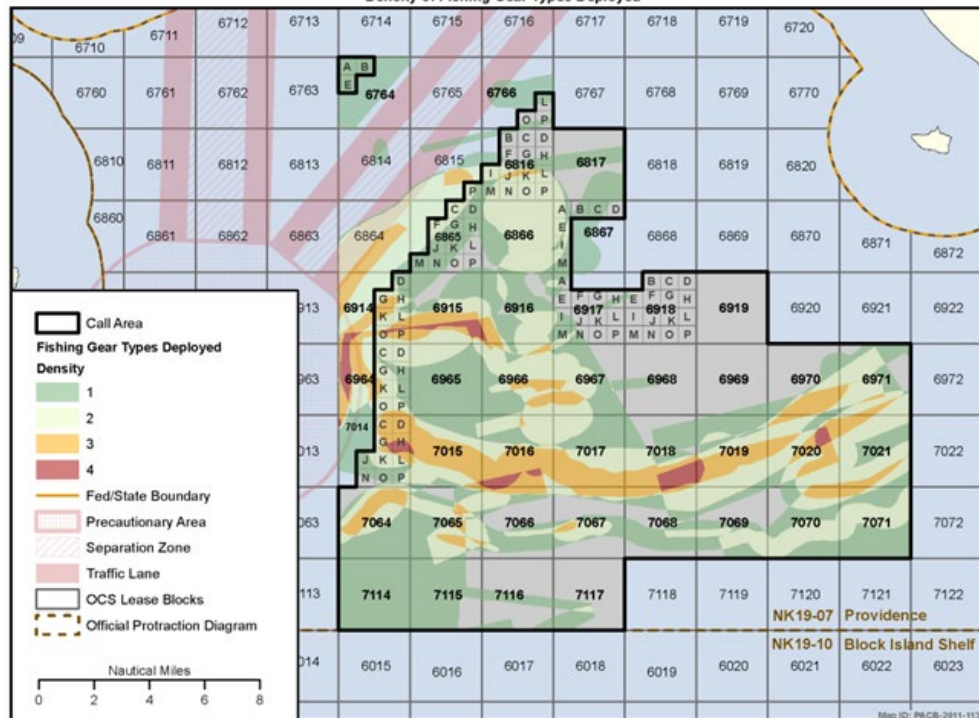


Rhode Island and Massachusetts Call Area

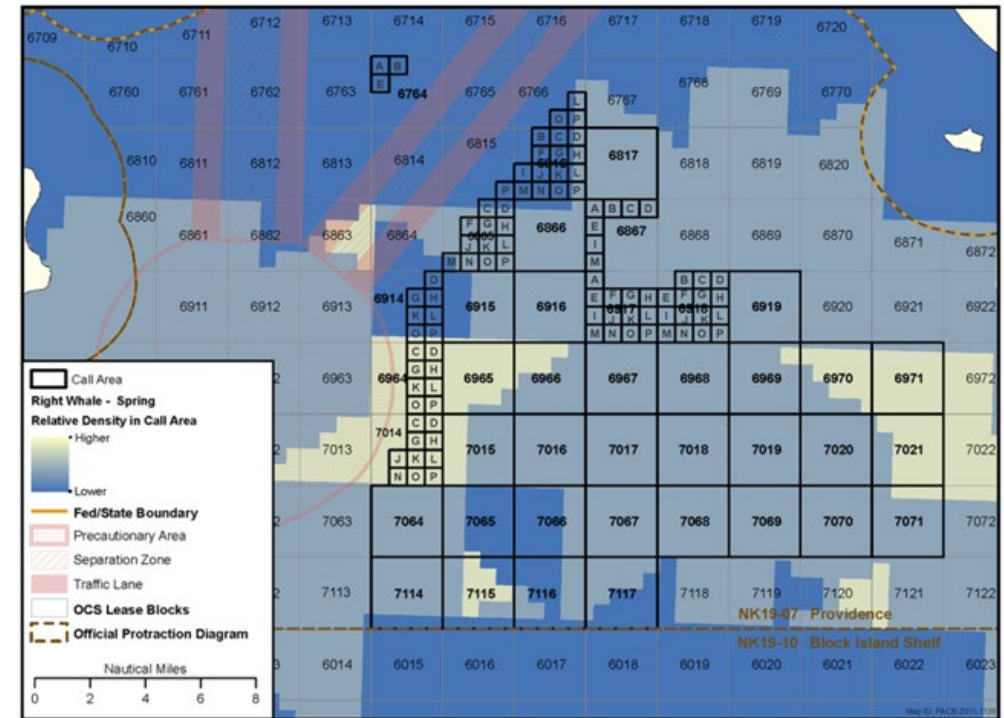


Example: Rhode Island/Massachusetts Leasing History

Rhode Island & Massachusetts Area Identification, Fishing and Fishery Resources
Density of Fishing Gear Types Deployed

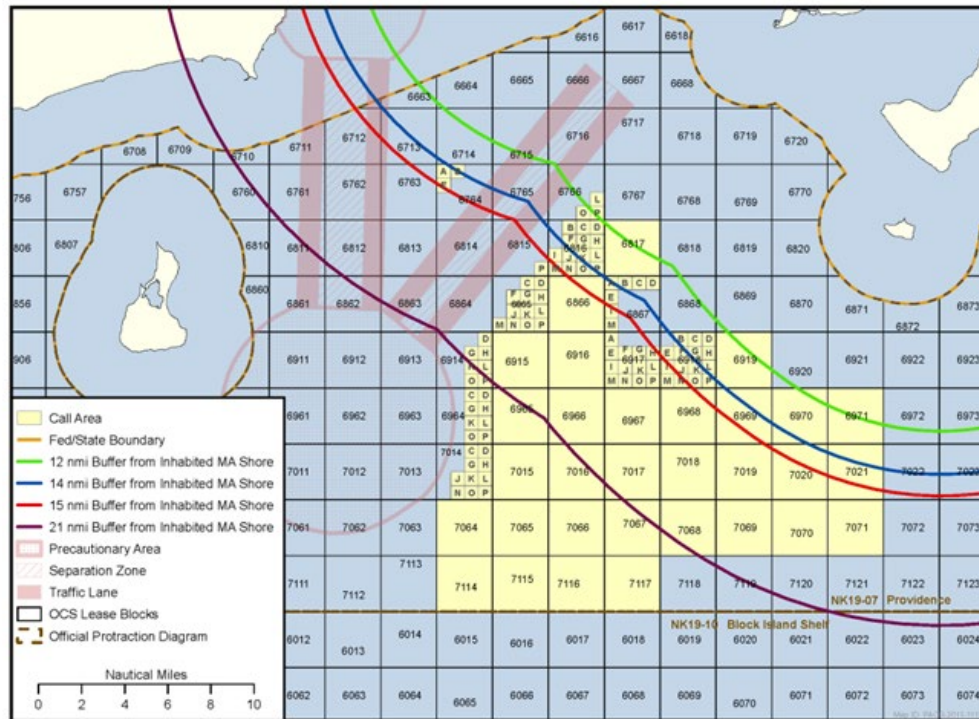


Rhode Island & Massachusetts Area Identification - Recommended Alternatives
Right Whale Relative Density Index - Spring



Example: Rhode Island/Massachusetts Leasing History

Rhode Island & Massachusetts Area Identification - Visual and Cultural Resources

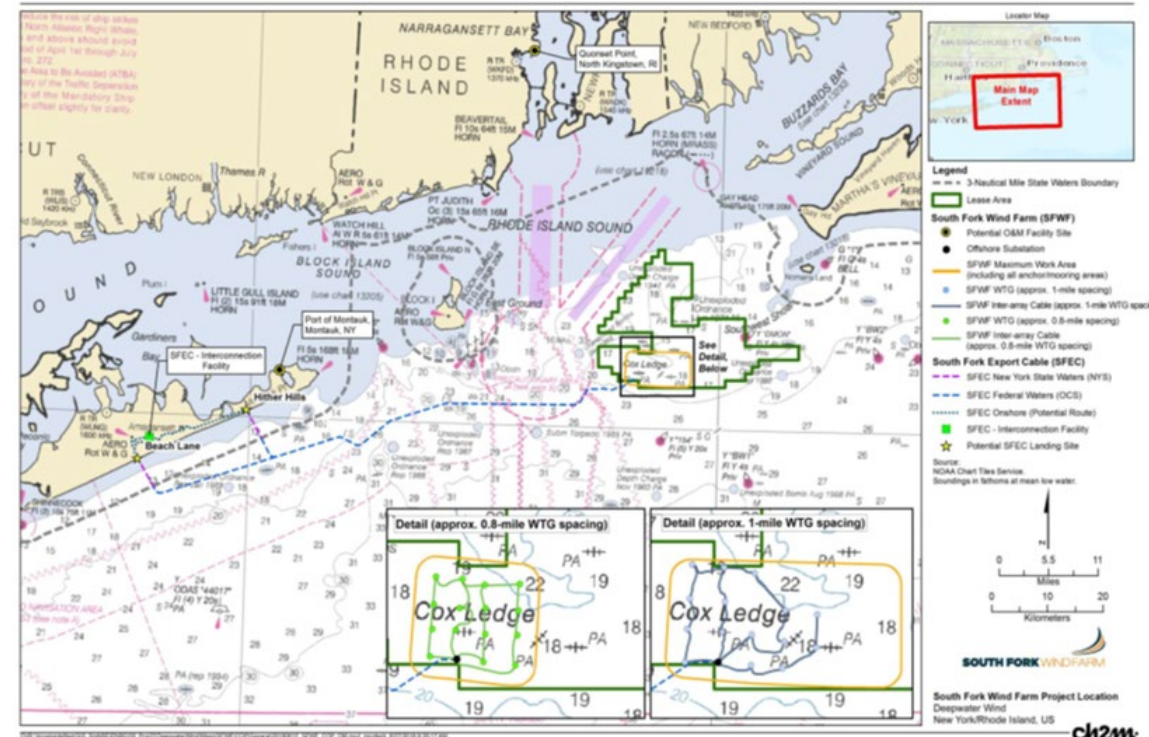
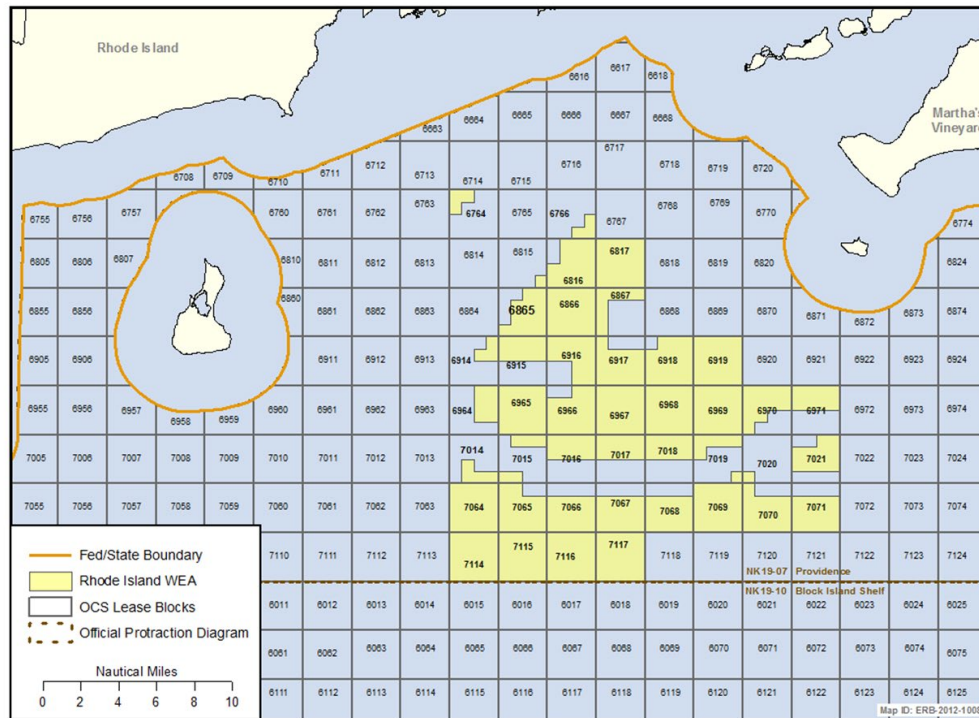


Rhode Island & Massachusetts Area Identification, Telecommunications Cables
Areas Requested by Verizon



Example: Rhode Island/Massachusetts Leasing History

Rhode Island & Massachusetts Wind Energy Area



South Fork Wind Farm

- **South Fork Wind Farm**
 - COP was approved by BOEM on January 18, 2022.
 - The first pile was driven on June 22, 2023 (image right).



Image Credit: <https://southforkwind.com/news/2023/06/governor-hochul-announces-major-milestone-for-south-fork-wind-with-installation>

BOEM

Bureau of Ocean Energy Management
U.S. Department of the Interior

BOEM.gov



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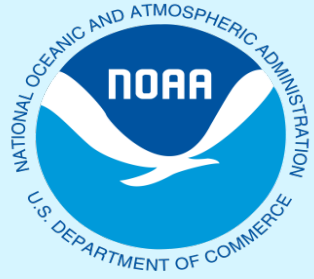
The background of the slide is an underwater scene. The top half shows a dark blue, deep water area with several curved, semi-transparent blue lines that resemble waves or currents. Below this, the water becomes lighter and more transparent, revealing a sandy seabed with distinct, rhythmic ripples. The bottom of the slide transitions into a white area, also framed by curved, semi-transparent blue lines.

Agency Roles

BOEM's Role

- **Lead Federal Agency**
 - Planning
 - Leasing
 - Environmental Review
 - Authorization
- **Bureau of Safety and Environmental Enforcement**
 - Lead Agency post plan approval
 - BOEM retains and advisory role



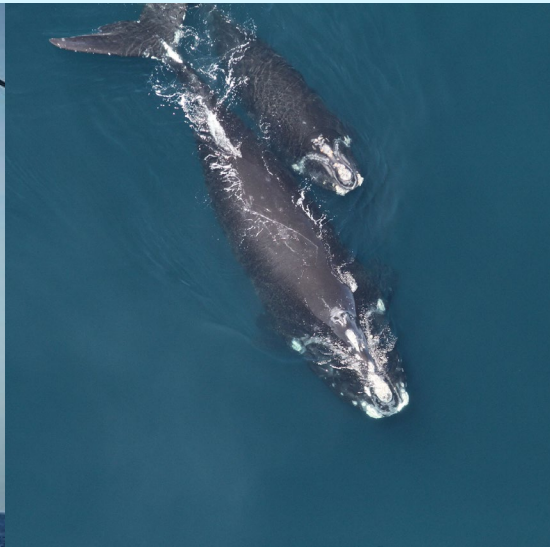


NOAA

National Oceanic
and Atmospheric
Administration

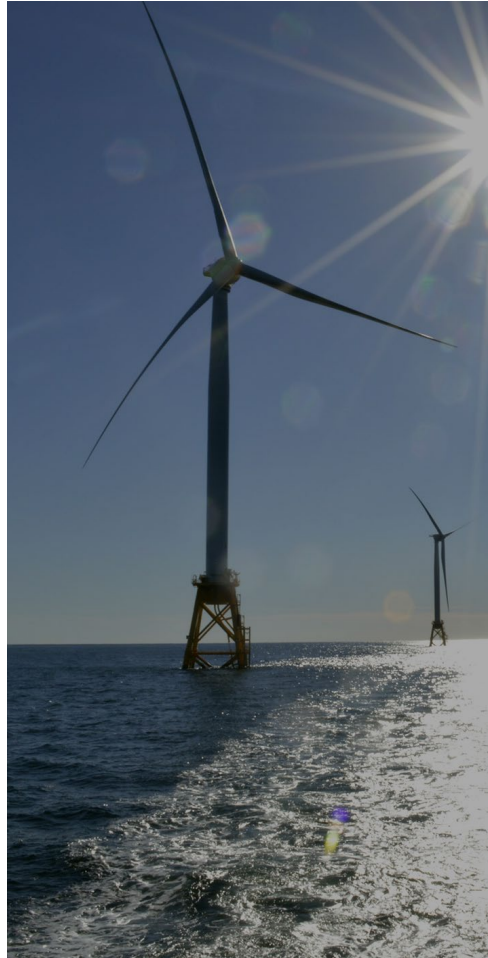
NOAA's Roles in Offshore Wind

Betsy Nicholson
National Ocean Service
Office for Coastal Management





NOAA's Roles in Offshore Wind



Protection of Coastal & Marine Resources

Environmental reviews and regulatory authorizations to ensure compliance with NOAA trust resource statutes.

Interagency & Stakeholder Engagement

Multi-scale engagement with State, Tribal, Federal partners and constituents.

Environmental Intelligence

Data, tools, science, modeling, mapping and services to inform offshore wind siting and decision making.

Research & Operations

Understand and monitoring impacts, provide and improve wind forecasts.

NOAA's Statutory Roles and Responsibilities



Lead Action Agency

- Marine Mammal Protection Act (MMPA)

Consulting Agency

- Endangered Species Act (ESA)
- Magnuson-Stevens Fishery Conservation and Management Act (MSA)
- Fish and Wildlife Coordination Act (FWCA)
- National Marine Sanctuaries Act (NMSA)

Cooperating and Adopting Agency

- National Environmental Policy Act (NEPA)

Other Interacting Statutes

- Coastal Zone Management Act (CZMA)

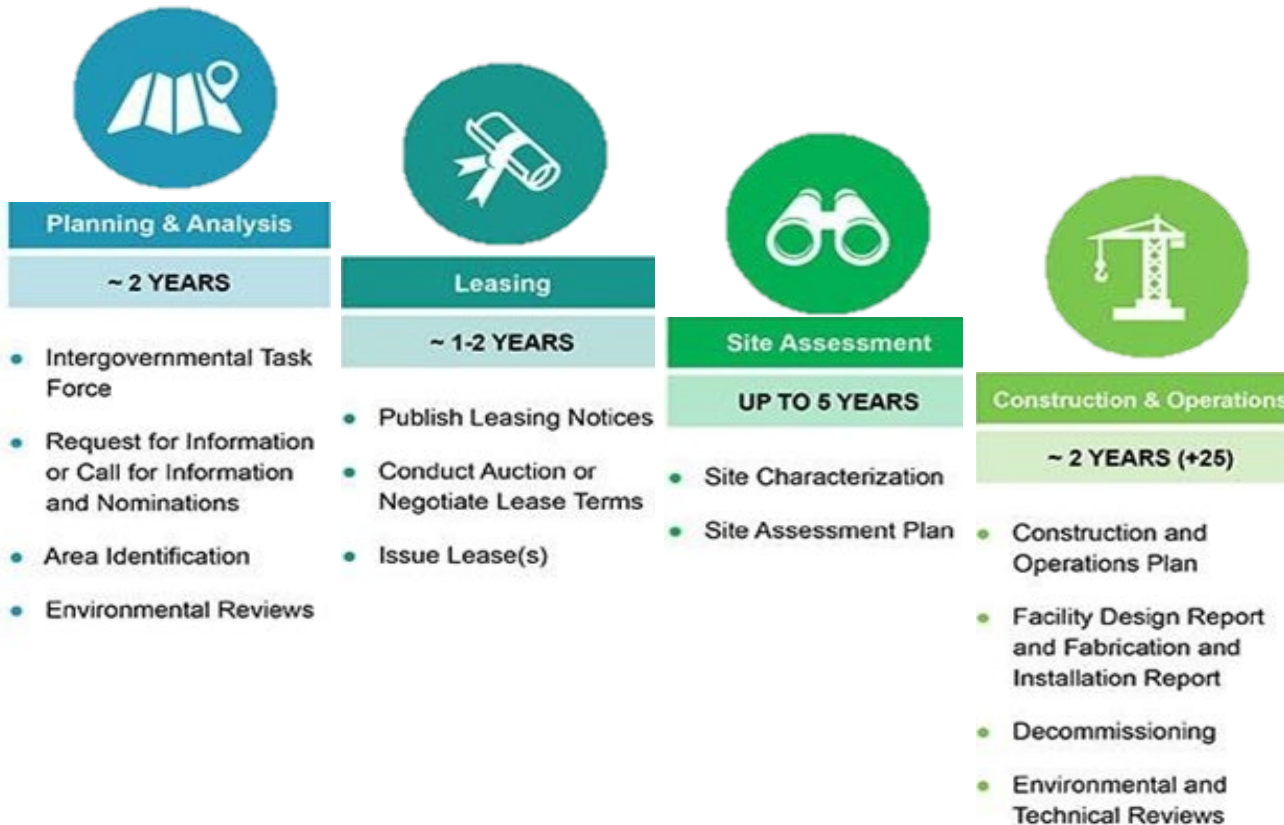
Scientific Support

- Ensure informed management decisions based on best available science
- Address impacts on scientific surveys and advice



Permitting Process

BOEM Process



NOAA Fisheries

Environmental Review & Regulatory Processes

- Marine Mammal Protection Act
- Endangered Species Act
- Magnuson-Stevens Act (Essential Fish Habitat)
- Fish and Wildlife Coordination Act
- National Environmental Policy Act
- Interagency coordination and streamlining requirements under Title 41 of Fixing America's Surface Transportation Act (FAST-41)

Science support during environmental review and planning and leasing phase

Science to understand impacts

All Parts of NOAA Contribute to Wind

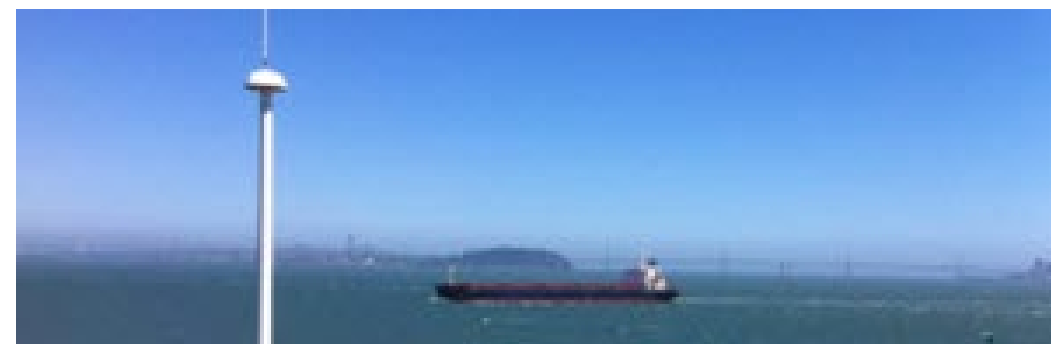
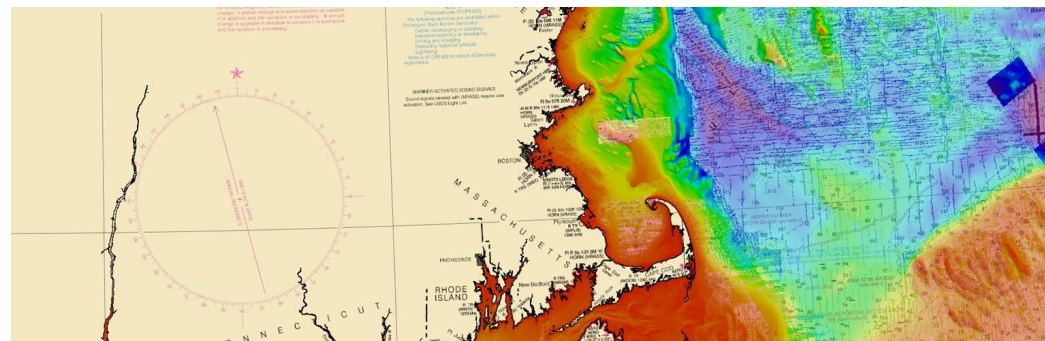


- **NOAA Fisheries (NMFS)** provides expertise and data in fisheries, protected resources, and their habitats and has the bulk of the agency's permitting and environmental review responsibilities related to offshore wind.
- **National Ocean Service (NOS)** maintains up-to-date nautical charts, oversees implementation of the Coastal Zone Management Act and the management of the National Marine Sanctuary System, and has partnered with BOEM through its National Centers for Coastal Ocean Science (NCCOS) to support marine spatial planning and modeling to help BOEM identify potential conflicts and deconflict areas as best as possible about leasing.
- **Ocean and Atmospheric Research (OAR)** supports predictive atmospheric and oceanic models and provides extension support via Sea Grant in partnership with the Department of Energy.
- **National Weather Service (NWS)** provides weather and climate predictions that inform wind siting, models wind farm wakes and other oceanic/atmospheric impacts, and evaluates radar mitigation needs.
- **National Environmental Satellite, Data, and Information Service (NESDIS)** manages several data and model products that inform decision-making.
- **Office of Marine and Aviation Operations (OMAO)** supports platforms used in NOAA missions, including problem-solving with NMFS in mitigating impacts from offshore wind to fisheries and other surveys.

Environmental Intelligence

NOAA provides coastal and ocean environmental intelligence for **understanding and predicting interactions with wildlife, fisheries, habitats, and other ocean uses.**

- Foundational Data (Earth Observations, baselines, charts)
- Forecasts and projections
- Spatial Planning & Siting
- Research and Modeling





Protection of Coastal & Marine Resources

Data, modeling, & other capabilities like AI and machine learning improve understanding and minimize impacts of offshore wind development on living resources and habitats

NOAA provides management, conservation, and protection of these ecosystems by ensuring activity compliance with environmental directives



AA509 video

0:14 / 1:50

Down Looking Oblique Looking

Location: 145.70564° E / 15.239° N

Habitat Name	Depth MLLW (meters)	Substrate - Abundance of Live Coral Reef	Substrate - Abundance of Upright Dead Coral Reef	Sul Ab Coi
Upright Dead and Live Coral Reef, Mixed Algae	5.9	20	60	20





Research, Monitoring, & Operations

Meteorological, oceanographic, and climate observations, forecasts, and warnings, fishery surveys inform efficient offshore wind siting, design, and safe operations, and energy efficiency and integration

NOAA provides assessments on offshore wind impacts to **endangered or threatened species, marine mammals, fisheries, marine habitats, and fishing communities**

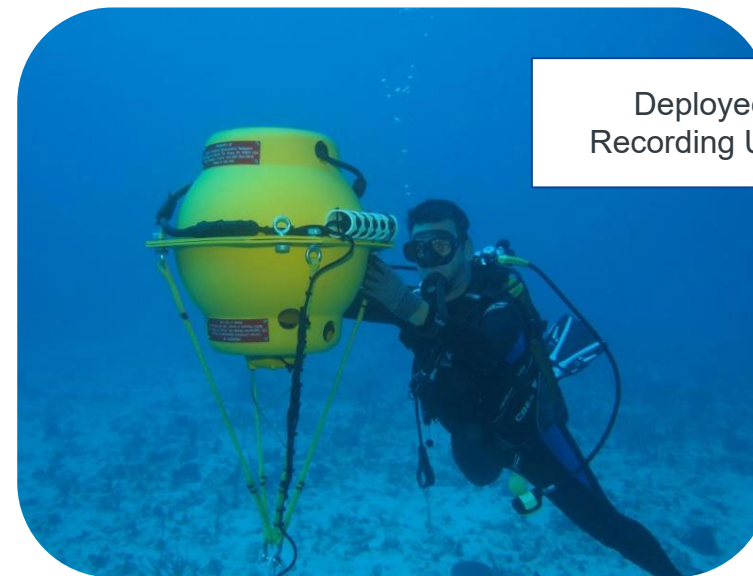


Experimental Wind Profiling Buoy Facility



Photo credit: AXYS Technologies / Pacific Northwest National Laboratory

Deployed Marine Autonomous Recording Unit, Caribbean, 2017

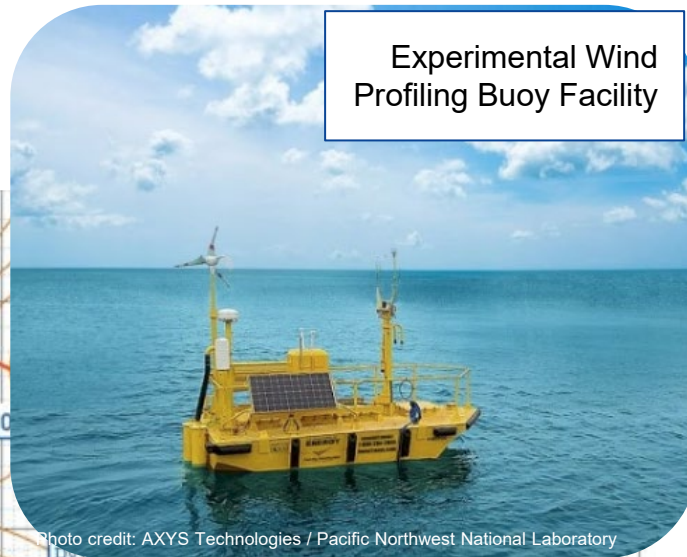
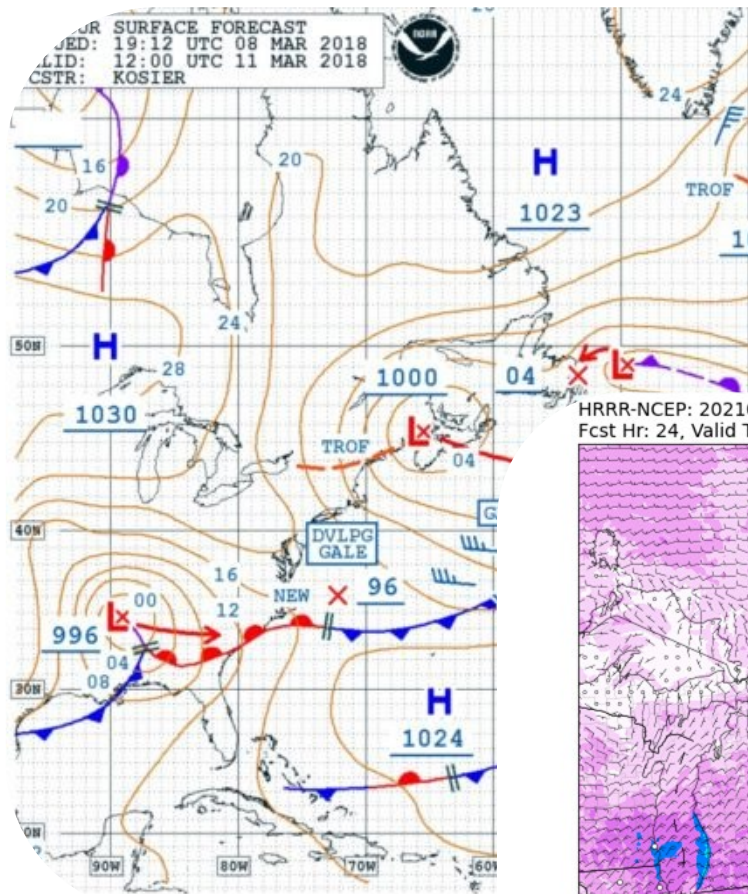




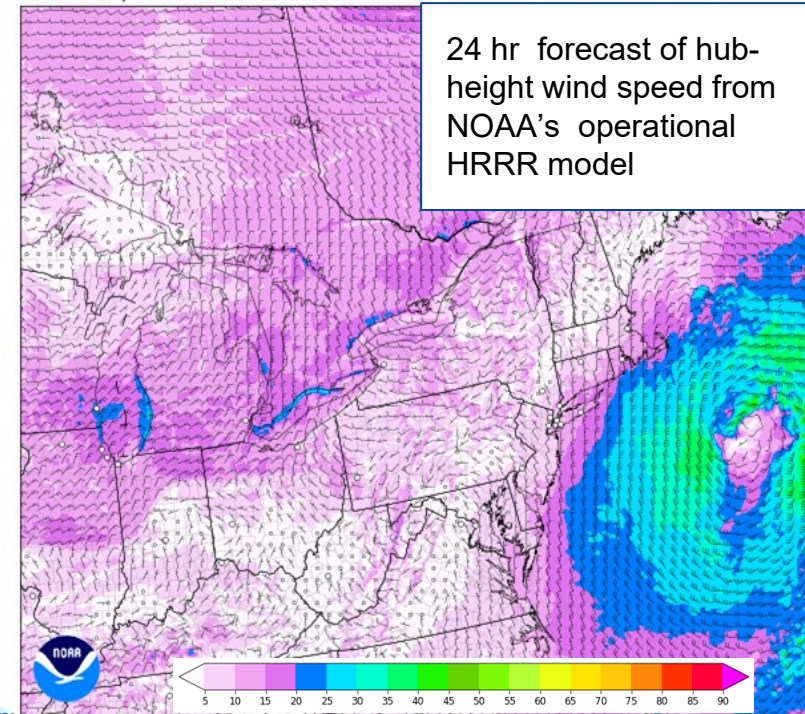
Observations & Weather Forecasts



As the nation's wind and solar industries grow, NOAA faces increased demands for **improved meteorological observations and more accurate wind and cloud forecasts** over a range of timescales.



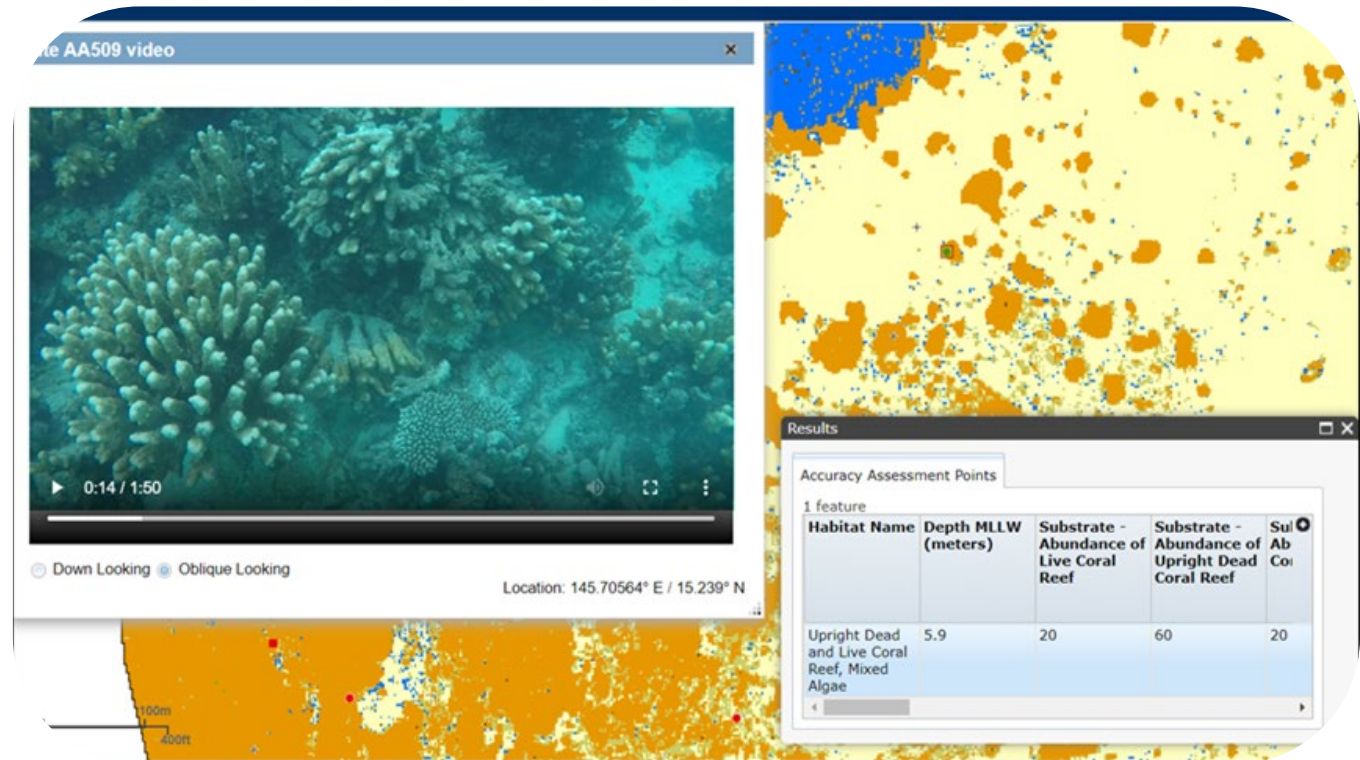
HRRR-NCEP: 20210917 12 UTC
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Ocean Planning to Inform Siting of Offshore Wind

NOAA uses **data, spatial modeling, resource and social science surveys** to identify **suitability of locations** for wind development to minimize impacts on living resources, habitats, and operations to minimize resource user conflicts and understand community perceptions & concerns.

Ultimately, integrated **spatial models** are provided to BOEM to aid in defining potential Call Areas, WEA and specific Lease blocks.



DOE and Other Agency Roles



The mission of the Energy Department is to ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.



Energy development on the outer continental shelf



Science, operations, regulatory compliance, and management to protect trust resources and support ocean co-use and coastal communities/economies



Supports vessel construction and operations, port development and operations



Workplace safety and environmental compliance

WETO Broad Mission and Portfolio

Mission: Advance scientific knowledge and technological innovation to enable clean, low-cost wind energy options



- **Key Opportunities**
 - Reduce Cost through Technology R&D
 - Reduce Environmental and Siting Challenges
 - Reduce Grid Integration Impacts
- **How? Directed lab research, competitive awards, collaboration with Federal partners, communication with stakeholders**