



**BOEM** Bureau of  
Ocean Energy Management

# Gulf of Maine Wind Energy Research Lease Virtual Public Meetings

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Welcome, thank you for joining us today

Before we begin, you can visit the virtual meeting room at:

<https://www.boem.gov/renewable-energy/state-activities/maine/gulf-maine>

August 2023 BOEM Environmental Assessment Meeting

# Maine Floating Offshore Wind Research Array

Celina Cunningham

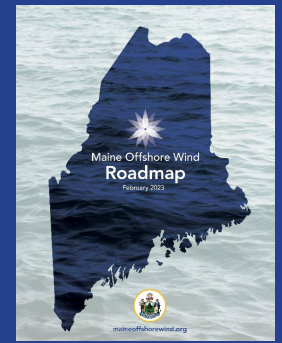
*Deputy Director, Governor's Energy Office*



[maineoffshorewind.org](http://maineoffshorewind.org)



# Maine Roadmap Overview



## Objectives



Pursue Offshore Wind Supply Chain, Infrastructure, and Workforce Investments to Support Economic Growth and Resiliency



Harness Abundant Renewable Energy to Reduce Long-Term Costs, Reliance on Fossil Fuels, and Fight Climate Change



Advance Maine-Based Innovation to Compete in Emerging National and Global Offshore Wind Industry



Support Maine's Vital and Thriving Seafood Industries and Coastal Communities



Protect the Environment, Wildlife, & Fisheries Ecosystem in the Gulf of Maine

## Cross-Cutting Themes

At the inception and throughout the *Roadmap* development, four cross-cutting themes were deemed essential to the process of creating a *Roadmap* purpose-built for Maine and offshore:

- Stakeholder Engagement & Communications
- Equity
- Transparency & Data-Driven Decision Making
- Regional Collaboration & Coordination

# Gulf of Maine Floating Offshore Wind Research Array



## Why A Floating Research Array?

- **Advance** phased approach to floating technology as seen worldwide
- **Research** the effects of multiple floating turbines on marine life, fishing and more
- **Maximize** research and innovation in floating offshore wind to help grow U.S. floating supply chain
- **Support** UMaine's public-private partnership
- **Work** with fishing, environmental and other marine interests to answer important questions
- **Use** the experience to inform the work of the offshore wind roadmap and future projects, including lowering the cost of floating wind in the Gulf of Maine



# Maine OSW Research Consortium

**GEO established a Maine OSW Research Consortium to better understand the local and regional impacts of floating OSW in the Gulf of Maine**

The consortium will include representation from fishing industry, ocean experts, and others to inform research priorities, and will work to align with related regional and national efforts.

The overall goal is to develop and execute a research strategy to better understand the local and regional impacts of floating offshore wind power projects in the Gulf of Maine, including:

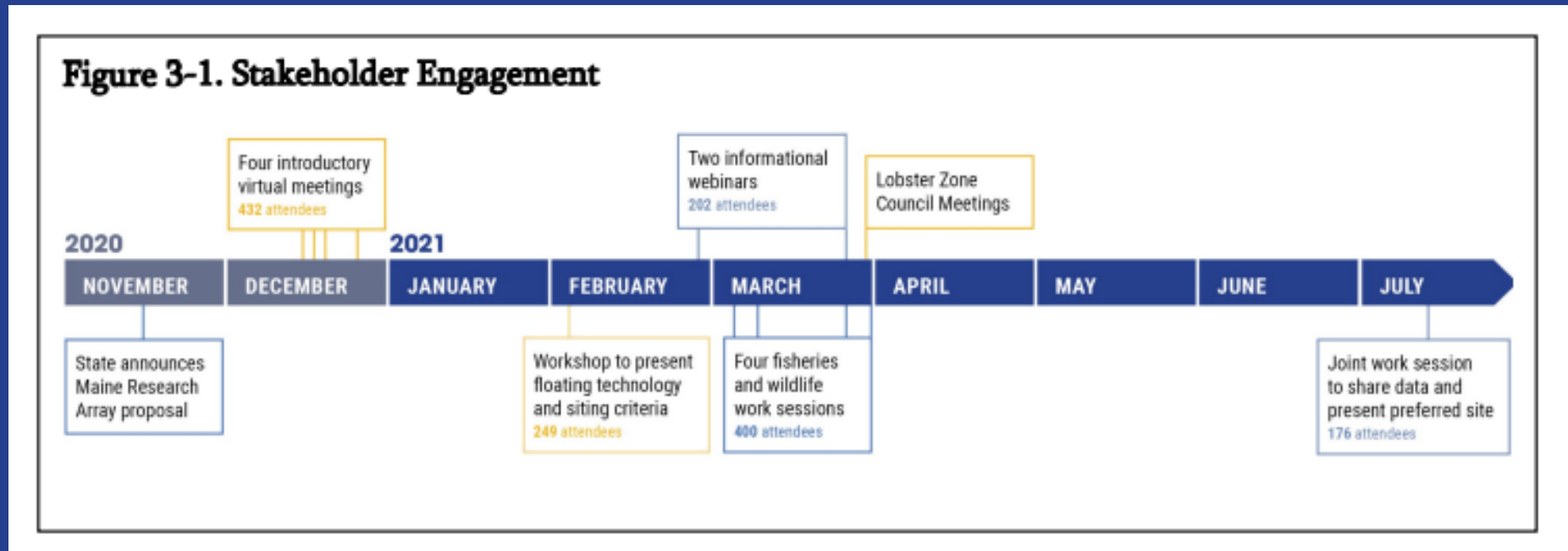
- Opportunities and challenges to existing uses in the GOM, including how to best support co-existence with the fishing industry
- Methods to avoid and minimize impacts on ecosystems and existing uses
- Ways to realize cost efficiencies in commercialization





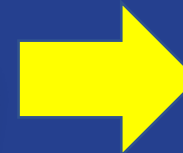
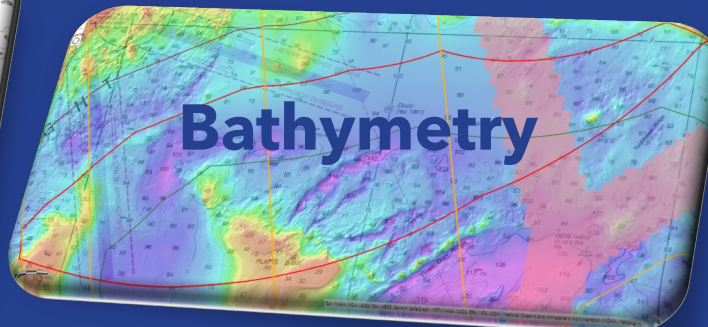
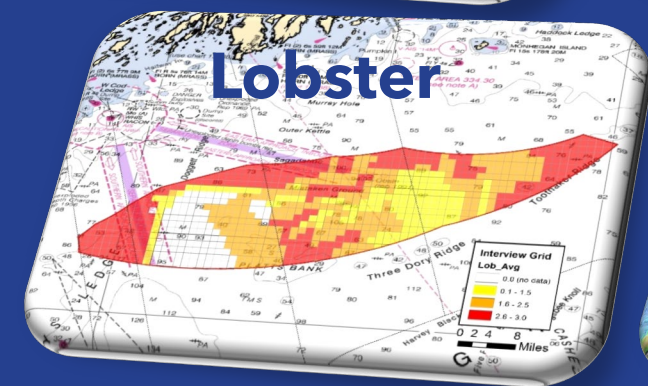
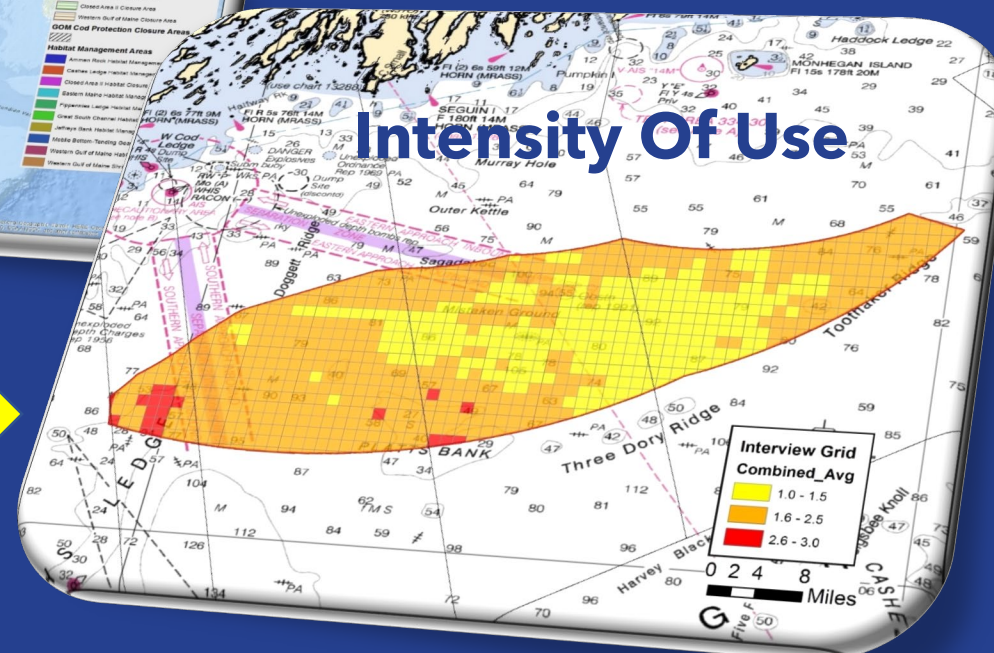
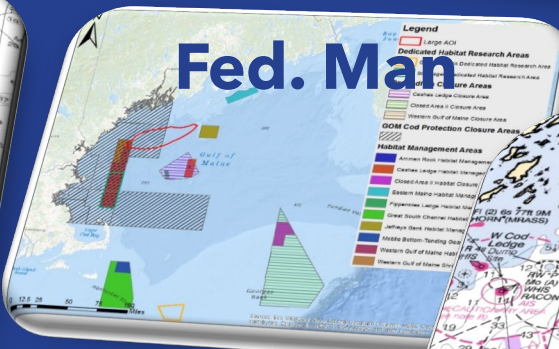
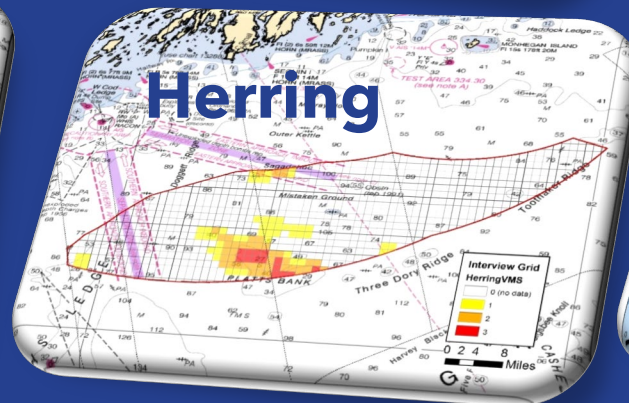
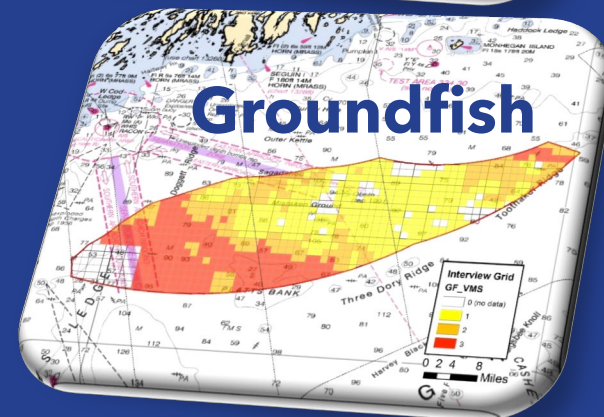
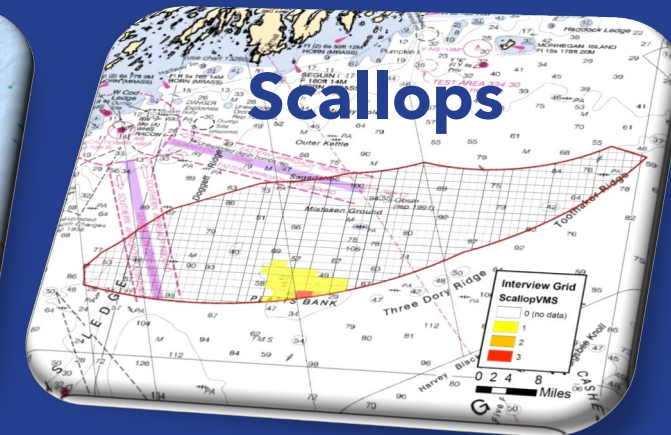
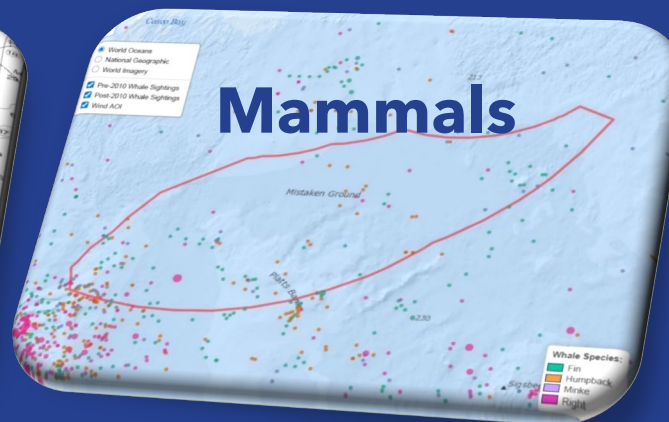
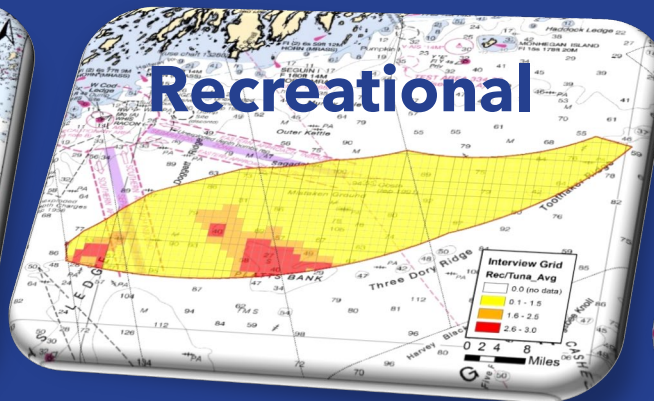
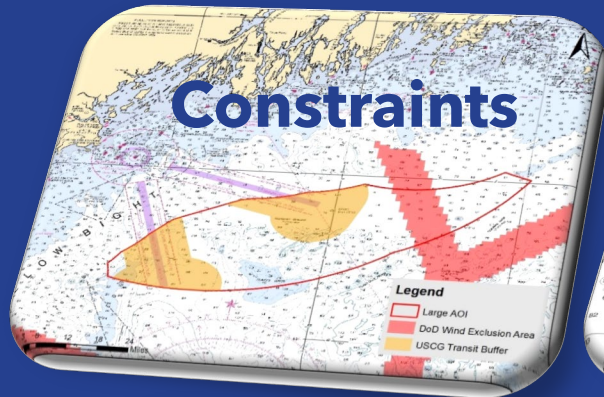
# Research Array Siting Engagement

- In Nov. 2020, the state initiated a transparent process to site proposed research array.
- GEO held **more than a dozen** public meetings with stakeholders over a **nine-month period**.
- In addition to public meetings, **dozens of one-on-one meetings** with interested stakeholders, fishermen, and federal agencies.
- Informed by stakeholder input, all available data, federal regulations/policies, the state selected a site that minimizes impacts and **balances** all of the existing uses, environmental and ecosystem information and cost considerations





# State Siting Assessment Process





# Seabed and Water Column Characterization

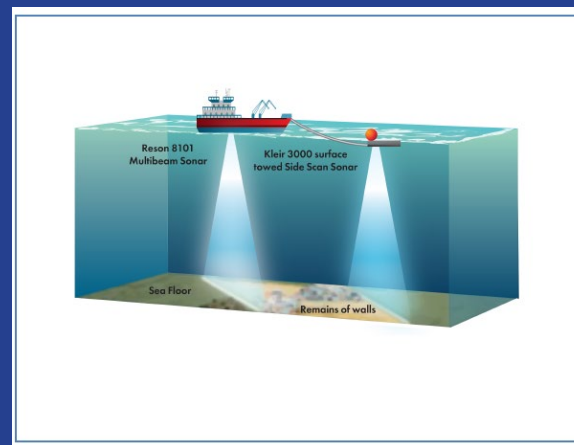
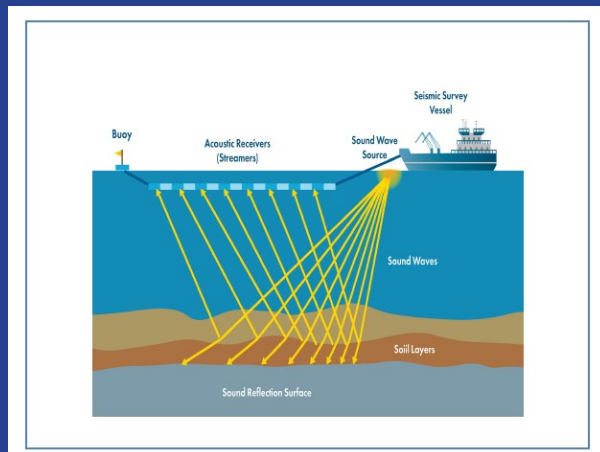


## Geophysical, Geotechnical, Benthic Habitat and Archaeological Surveys

- Multi-beam echo sounders to determine bathymetry;
- Sidescan sonar to image seafloor;
- Sub-bottom profilers determine stratigraphy below the seabed;
- Magnetometers to map shipwrecks;
- Marine Archeological Resources Assessment
- Sediment cores and samples to characterize habitat;
- Benthic samples for infauna identification
- Multiple vessels depending on location and water depth

## Oceanographic and Lower Trophic Level Resource Surveys

- On-shore radar to measure surface water velocity and winds;
- Uncrewed underwater gliders to measure physical oceanographic conditions
- Plankton and larval lobster tows;
- Evaluate zooplankton and lobster and other crustacean larvae,





# Marine Mammal and Highly Migratory Species Monitoring



## FLiDAR Buoy

- Metocean sensors
  - wind, waves, currents, sea level and meteorology
- Biological sensors
  - Marine acoustic monitoring (hydrophone)
  - Fish tag detection (PAM)
  - Avian (Motus) tag detection
  - Avian/bat audio recorders (SM4)
  - Near real-time web portal

## Acoustic Recorders and Receivers

- Characterize ambient noise in the area;
- Detect presence of cetaceans;
- Location and tracking of baleen whales;
- Detect fish tagged as part of highly migratory species monitoring



# Marine Life and Wildlife Surveys

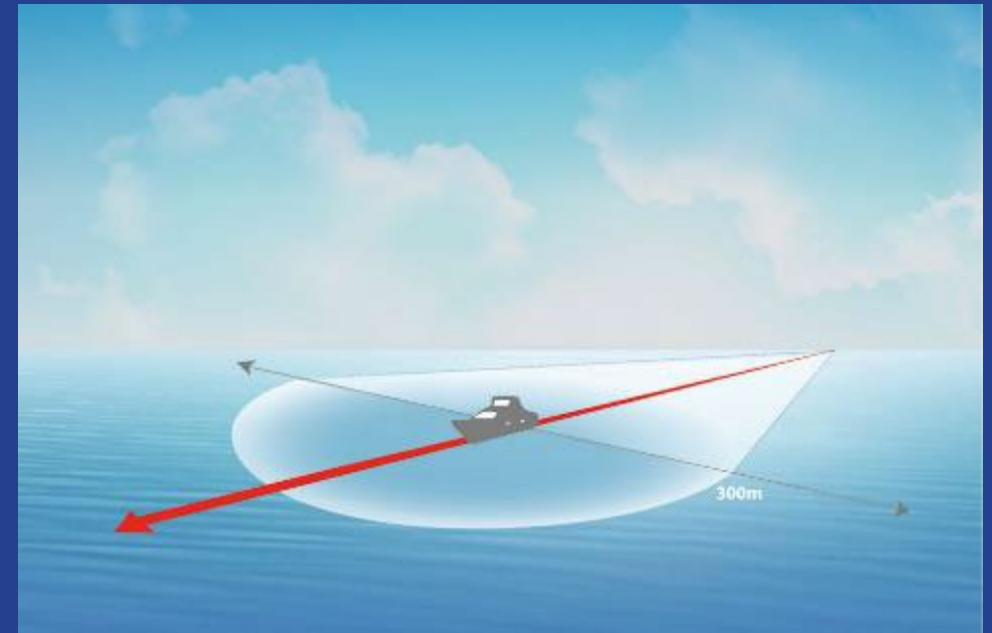
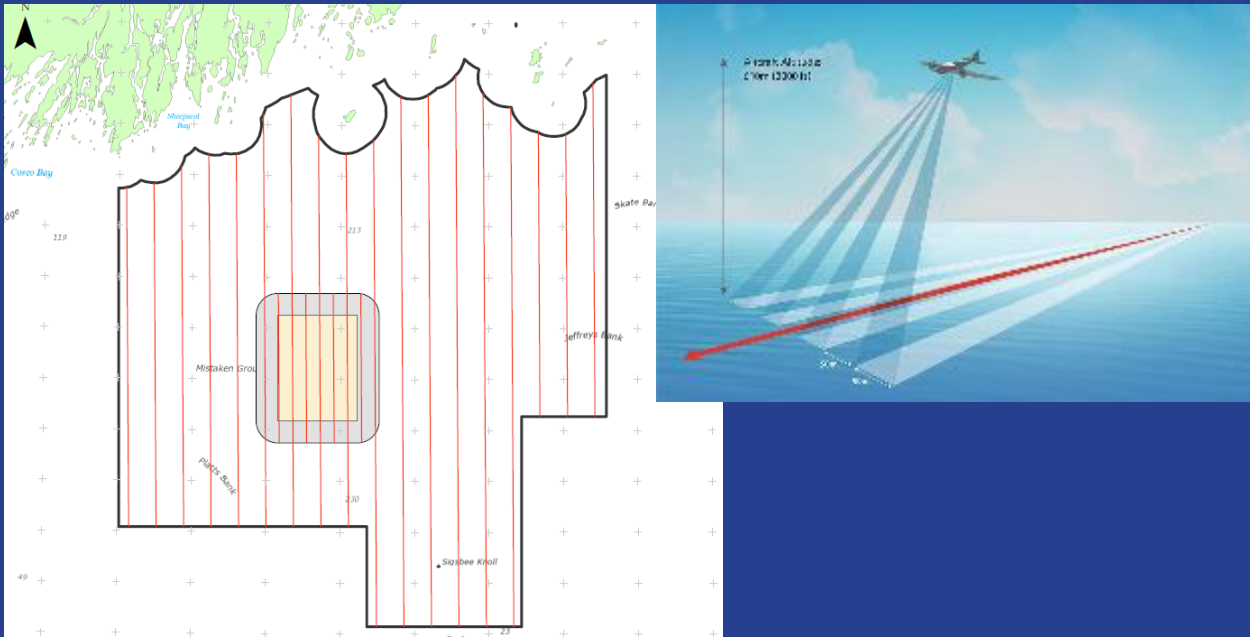


## Digital Aerial Surveys

- Cameras on aircraft to detect birds, marine mammals, sea turtles, large fish, fish schools and vessel activity;
- BOEM-sponsored Gulf-wide surveys;
- Project-specific surveys to cover at least 10% of Lease Area + 4 km buffer

## Vessel Transect Surveys

- Visual surveys along fixed transects to document marine mammal, bird, and sea turtle use of lease area;
- Emphasis on endangered and threatened species;
- Active acoustics and eDNA sampling to evaluate marine fish and invertebrate abundance and distribution;
- Surveys employ local fishing vessels and owners.





# Fisheries Surveys



## Fisheries Surveys

- Bottom trawls
- Lobster trawls
- Gillnet surveys
- Evaluate marine fish and invertebrates and adult lobster and fish populations within and around the lease area
- Surveys employ local fishing vessels and owners





**Thank You**

Celina Cunningham  
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GOVERNOR'S  
Energy Office





**BOEM** Bureau of  
Ocean Energy Management

# Gulf of Maine Wind Energy Research Lease

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August 2023

Mary Boatman, NEPA Coordinator

# Why are we Here?

- State of Maine submitted a research lease application (Oct. 1, 2021) for a floating research array in Federal Waters
  - ~25 nmi from the mainland; **15 Square Miles** (~10,000 acres)
  - ≤ 12 Floating Turbines | Up to 144 MW capacity
- **Research Framework**
  - Human Dimensions (e.g., optimize co-existence w/ ocean users)
  - Ecosystem & Environment (e.g., minimize entanglement/improve monitoring)
  - Technology Development (e.g., optimal mooring/anchor systems)

STATE OF MAINE OFFSHORE WIND RESEARCH ARRAY

## Application for an Outer Continental Shelf Renewable Energy Research Lease

Submitted to  **BOEM**  
Bureau of Ocean Energy Management

Submitted by  **GOVERNOR'S  
Energy Office**

**October 2021**





# What is a Research Lease?

- BOEM is allowed to issue a lease “to a Federal agency or a State for renewable energy research activities that *support* the future production, transportation, or transmission of renewable energy.” 585.239
- BOEM will *NOT* charge any fees
  - No acquisition fee
  - No rent
  - No operations fee
- **EXAMPLE: Coastal Virginia Offshore Wind Pilot Project**
  - 2013 - application received
  - 2015 - lease issued
  - 2020 – installation complete

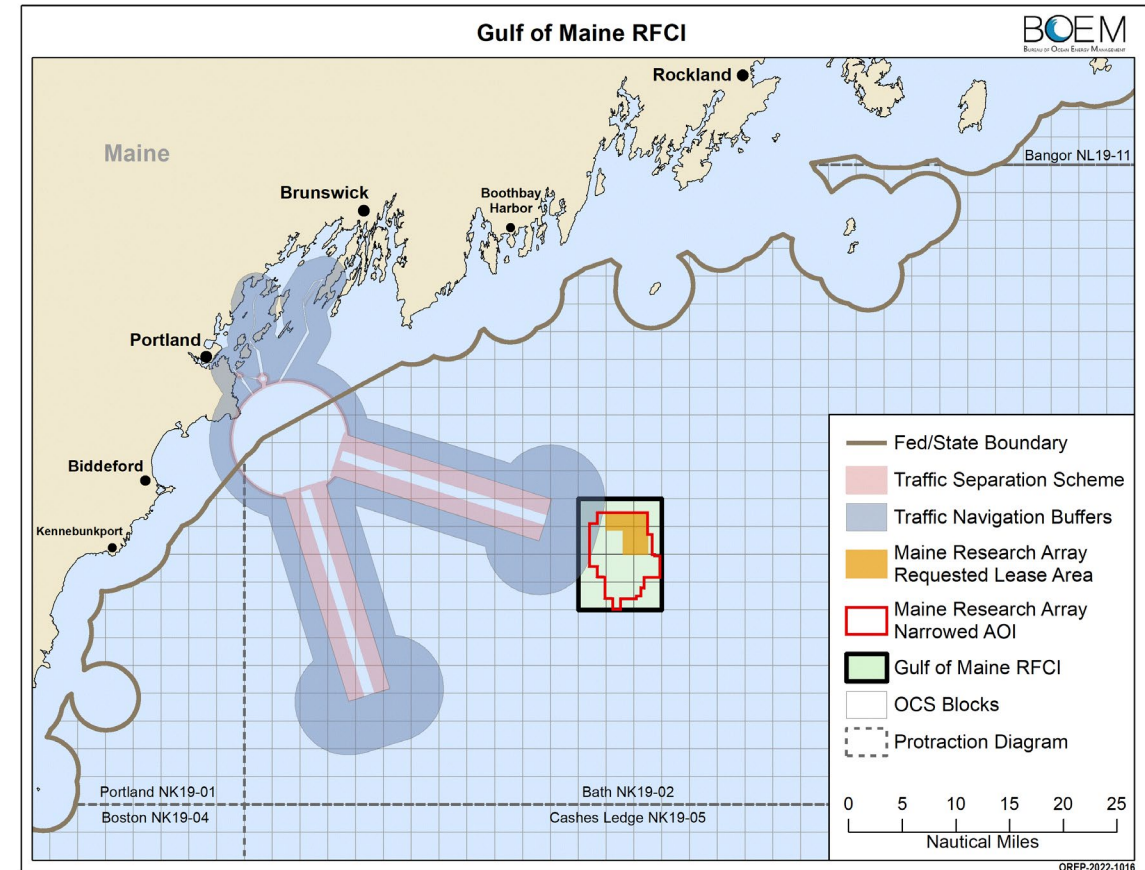


Coastal Virginia Offshore Wind Pilot Project under construction



# What has BOEM done since?

- Aug. 19, 2022 – Request for Competitive Interest (RFCI)
  - Required to determine the presence of competitive commercial interest
- March 20, 2023 – Determination of No Competitive Interest (DNCI)
  - After review, BOEM determined that no competitive interest existed
  - Allows BOEM to move forward to process the State's research application



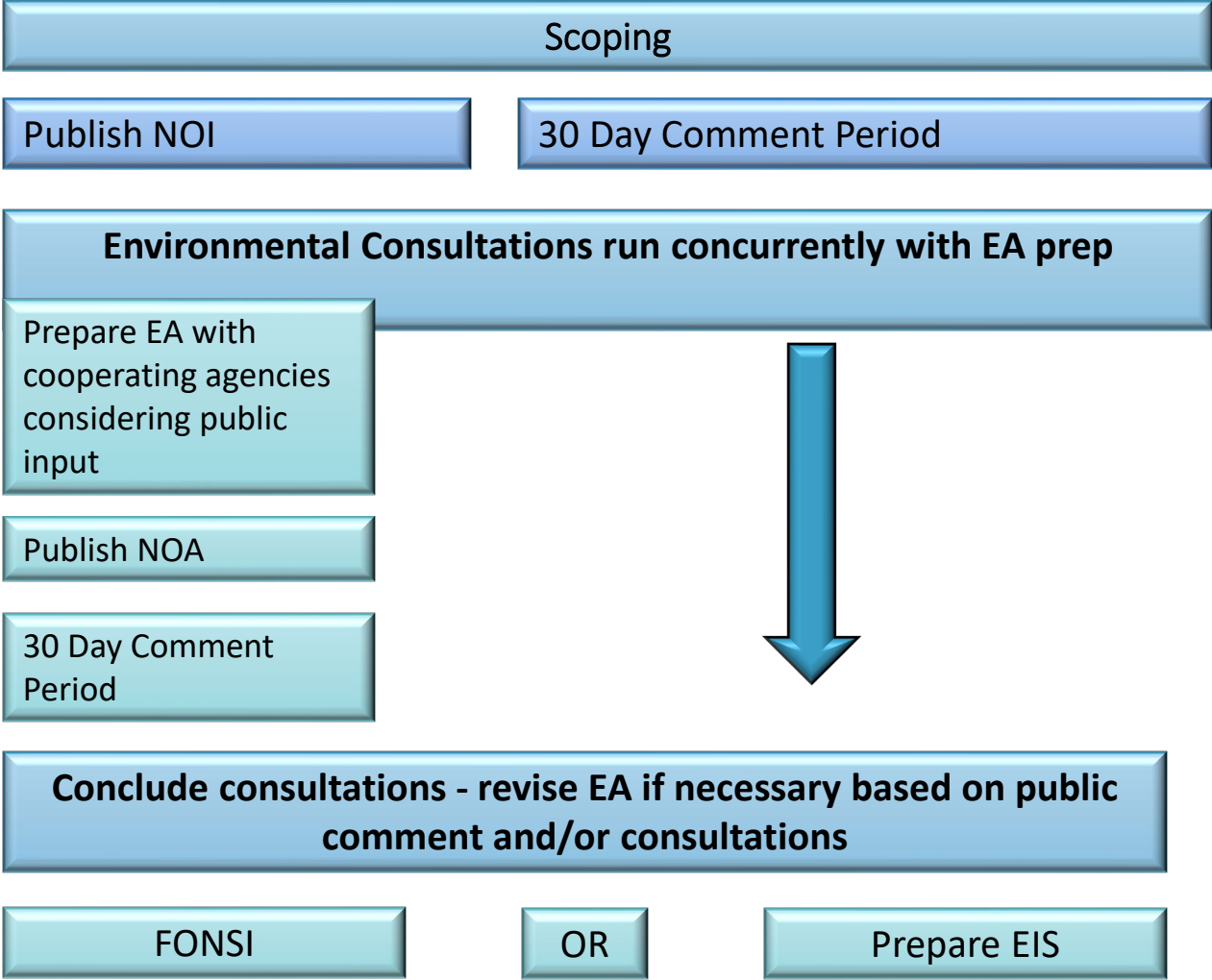


# What is an Environmental Assessment?

- **An EA is a concise public document which:**
  - Briefly provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS);
  - Aids an agency's compliance with NEPA when no EIS is necessary (better alternatives and mitigation measures) and;
  - Facilitates preparation of an EIS when one is necessary.



# Overview: Standard NEPA Process





# Proposed Action: Activities that will be conducted

## Analyzes environmental effects associated with leasing:

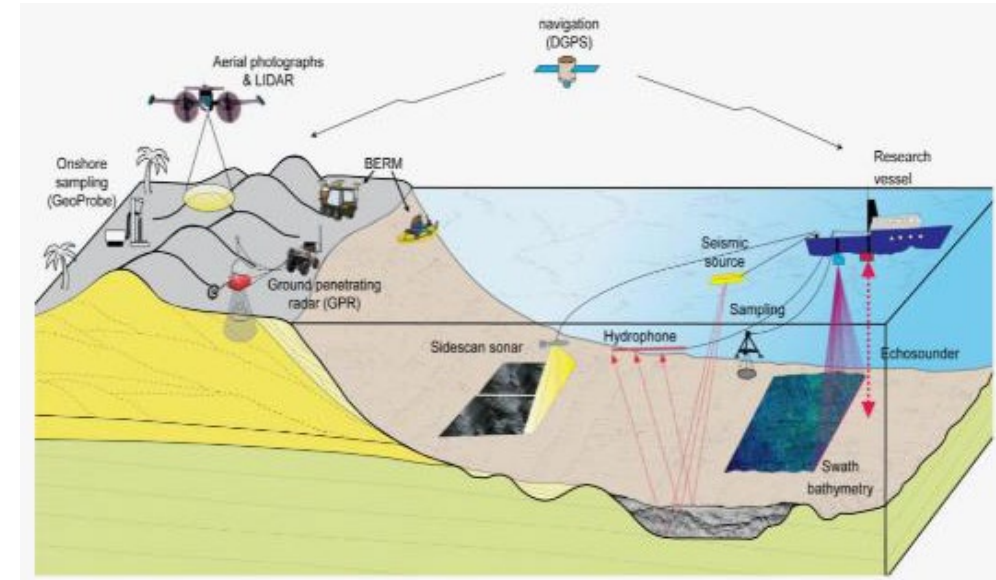
- Site characterization activities
  - biological, geological, geotechnical, and archaeological surveys
- Site assessment activities
  - meteorological and oceanographic buoy deployment

## Notice of Intent to prepare an EA

- Published on **May 4, 2023**

## Notice of Availability of draft EA

- Published on **July 21, 2023**, comment period closes August 21, 2023



# Proposed Action: What is NOT considered

- Installation, operation, and decommissioning of a research facility including turbines and cables
- If the lessee submits a research activities plan, BOEM would conduct a project specific environmental analysis that would likely take the form of an EIS



UMaine 1:8 scale floating VoltturnUS foundation



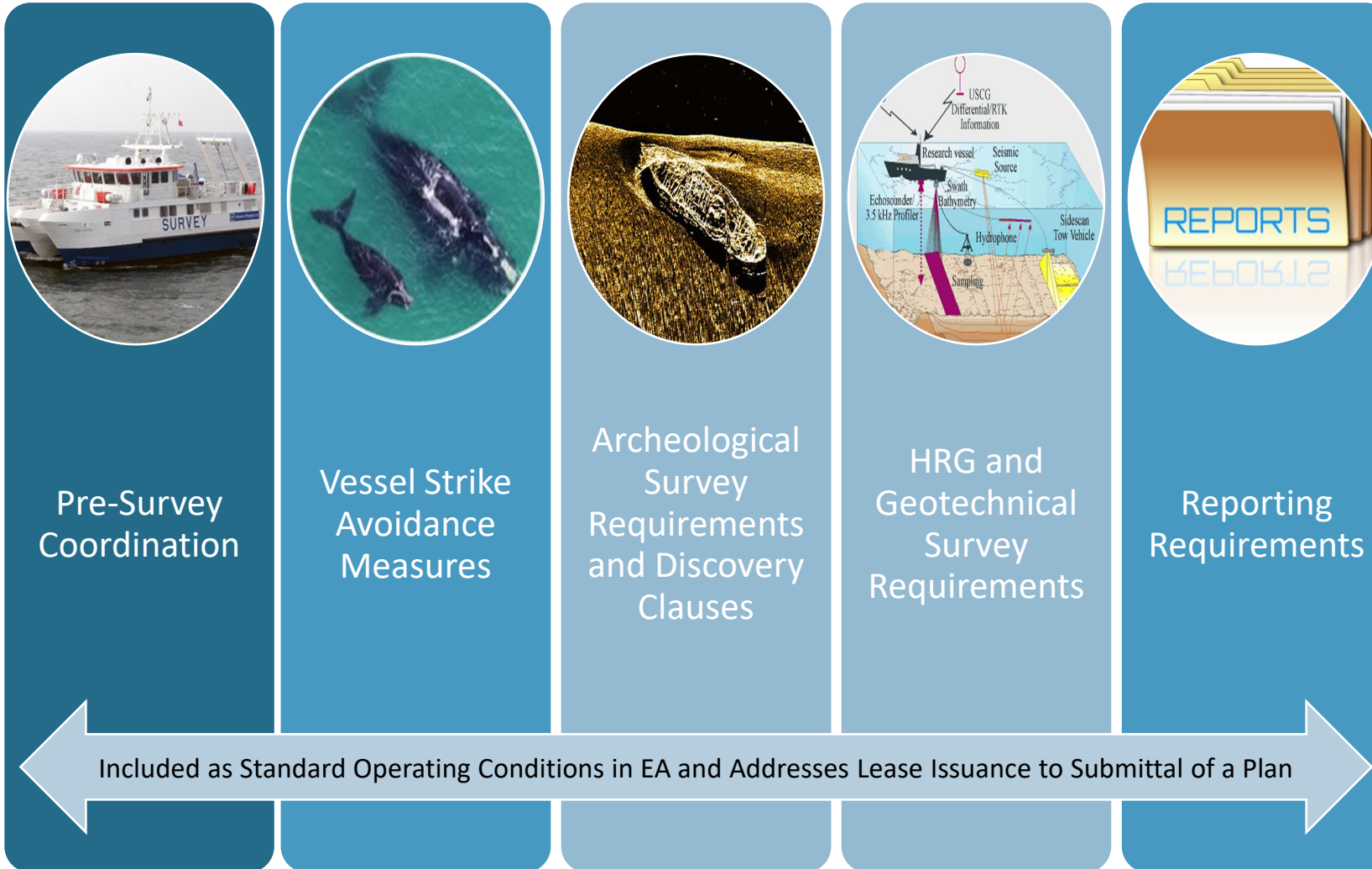
# No Action Alternative

Under the No Action Alternative, BOEM would not issue a wind energy research lease to the State of Maine and site assessment activities would not occur within the leased area of the Gulf of Maine. Although some site characterization surveys (e.g., geological, geophysical, biological, and archaeological surveys conducted on unleased or ungranted areas of the OCS) do not require BOEM approval and could still be conducted under the No Action Alternative, these activities are less likely to occur without a research lease.





# Environmental Lease Stipulations



***\*Additional Construction or Operations Stipulations May Be Added As Terms and Conditions of Plan approval***



# Evaluating the Research Lease Request: Environmental Assessment



## Consultations for Research Lease Issuance:

- Biological Assessments (ESA)
  - Fish and Wildlife Service
  - National Marine Fisheries Service
- Essential Fish Habitat Assessment (MSFCMA)
- Section 106 (NHPA)
- Consistency Determination (CZMA)



# Resources evaluated and impact determinations

Resource	Impact Determination: Proposed Action		
	Routine Activities		Non-Routine Events
	Site Assessment	Site Characterization	
<b>Air Quality and Greenhouse Gas Emissions</b>	Negligible	Negligible	Negligible
<b>Water Quality</b>	Negligible	Negligible	Negligible
<b>Benthic Resources</b>	Negligible to Minor	Negligible to Minor	Negligible
<b>Finfish, Invertebrates, and Essential Fish Habitat</b>	Negligible	Negligible	Negligible
<b>Marine Mammals</b>	Negligible to Minor	Negligible to Minor	Negligible
<b>Sea Turtles</b>	Negligible	Negligible to Minor	Negligible
<b>Military Use</b>	Negligible	Negligible	Negligible
<b>Navigation and Vessel Traffic</b>	Negligible to Minor	Negligible to Minor	Negligible
<b>Commercial and Recreational Fishing</b>	Negligible to Minor	Negligible to Minor	Negligible
<b>Recreation and Tourism</b>	Negligible	Negligible	Negligible
<b>Cultural, Historical, and Archaeological Resources</b>	Negligible	Negligible	Negligible





# Next Steps & Timeline

Milestone	Action	Target Date
Environmental Assessment	<b>Notice of Intent</b> <i>30-Day Comment Period</i>	<b>May 4, 2023</b>
	<b>Draft EA</b> <i>30-Day Comment Period</i>	<b>July 21, 2023</b>
	<b>Final EA</b>	<b>Fall 2023</b>
Lease Issuance	<b>Spatial Analysis Recommendations</b>	<b>Q4 2023</b>
	<b>Leasing Negotiations Complete</b>	<b>Q4 2023</b>
<b>Research Activities Plan (RAP)</b>	<b>Submission</b>	<b>TBD</b>
<b>Environmental Review (EIS/EA)</b>	<b>Notice of Intent</b> <i>Scoping Comment Period</i> <b>Draft EIS/EA</b> <i>Comment Period</i>	<b>TBD</b>



Photo credit: [UMaine](#)



# How to Comment

- In written form by mail, enclosed in an envelope labeled “Gulf of Maine Research Lease Draft EA” and addressed to Program Chief, Office of Renewable Energy Programs, Bureau of Ocean Energy Management, 45600 Woodland Road, Sterling, VA 20166.
- Oral comments during any of the public meetings listed in the Notice of Availability and Virtual Meeting Room.
- Through the regulations.gov web portal by navigating to <https://www.regulations.gov/> and search for Docket No. BOEM-2023-0042. Click on the “Comment” button below the document link. Enter your information and comment, then click “Submit Comment.”
- Comment period closes on August 21, 2023



# BOEM

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