



Maine Floating Offshore Research Array

Fisheries Work Session #1

MARCH 10, 2021 5:30 – 7:30 PM



GOVERNOR'S
Energy Office

Webinar will begin in a few moments.

Zoom Meeting Reminders

- Everyone, please MUTE yourself, except when speaking. If you are on the phone, press *6 to mute/unmute.
- Raise your hand
 - Use the blue "Raise Hand" function in the participants tab for older Zoom version
 - Scroll on "reactions" icon bottom of Zoom control bar to find hand raise in newer Zoom
- If you are on the phone, press *9.
- Use "Chat" function as needed
- Technical assistance: Zoe Miller
zmiller@cbi.org

Fisheries Work Session #1 Agenda

- 5:30 Welcome and Overview**
- 5:40 About Maine's Research Array**
- 6:05 Initial Siting Considerations**
- 6:35 Break**
- 6:40 Siting Discussion**
- 7:25 Next Steps**
- 7:30 Adjourn**

Navigating Our Discussion

- Be attentive to today's objectives.
- Focus on task at hand (avoid multitasking).
- Both questions and comments welcome
- Listen to learn and speak to share expertise.
- Share the floor: Please be mindful of your time to allow others to speak
- Be direct and respectful: Express your views and let others do the same
- The discussions will not be recorded
- Participating in giving advice to DMR/GEO does not constitute approval nor endorsement of OSW development in the GOM generally or the Research Array in particular

Maine's Approach to Offshore Wind



- Offshore wind is part of state's long-term clean energy vision
- Maine is pursuing a phased approach
- Maine supports regional commercial leasing planning effort
- In November, Governor announces multi-turbine research array, commitment to work with stakeholders
- In December, held initial webinars, focus on fishing industry

Fishing Concerns to Date

- Ability/inability to fish in the array
 - Likely to vary by gear type
 - Impact of displaced effort
 - Desire to avoid division within industry
- Ecosystem changes that could affect fisheries and protected resources
- EMF: transmission cable interactions with key species

Fishing Concerns to Date

- Economic case:
 - Cost to fishing industry vs. benefits
 - Why not pursue other renewable options?
- Opening the door:
 - What is driving growth of OSW?
 - How does RA influence those drivers?
- Project utility:
 - How will we use it to inform future projects?
 - Does timeline work?

Research Array Process Elements



State of
Knowledge
Workshop

- Setting stage
- Building common information

Webinars

- Build understanding across sectors

Work Sessions
Fisheries
Wildlife

- Detailed dialogue on data, siting, and research approach

Dockside and
Informal

- Direct engagement with fishermen
- Direct engagement with interested others

Joint workshops

- Coordinating and refining advice from wildlife, fisheries and other

Work Sessions

Provide advice and counsel to the State to help guide its decisions involving

1. the siting of the research project area and its configuration,
2. other relevant project design elements to be considered for the research lease application.
3. research themes of interest for the research project

Objectives for Today

- **Set expectations and goals of working sessions**
- **Understand what data State currently has related to fisheries and fishing activity and gaps in fishing activity data**
- **Solicit additional information to inform siting**



Maine's Offshore Wind Initiative

**Celina Cunningham, Deputy Director
Governor's Energy Office**

CLIMATE COUNCIL GOALS



12.01.20
Climate Action Plan
Delivered



ACHIEVE STATE
CARBON NEUTRALITY BY
2045

REDUCE MAINE'S GREENHOUSE GAS EMISSIONS
BY TARGETS OUTLINED IN STATE LAW

45%
BELOW 1990 LEVELS
BY 2030

80%
BELOW 1990 LEVELS
BY 2050



ENSURE MAINE PEOPLE, INDUSTRIES, AND COMMUNITIES
ARE RESILIENT TO THE IMPACTS OF CLIMATE CHANGE.

Maine Offshore Wind Initiative

- Pursues strategic opportunities for additive economic activity and innovation across various sectors and regions of Maine
- Maximize compatibility with existing marine uses and fisheries and take a data-driven, inclusive, transparent approach
 - Maine fisheries: \$674M in Maine's commercial fishing landings in 2019 (\$485M in lobster landings alone, most valuable single species fishery in US); 2X commercial fishing trips out of Maine than any other state on the east coast
- Support Maine engagement in BOEM Task Force and regional coordination

Maine's Floating Offshore Wind Roadmap

October 2020

US EDA Grant: \$2.167 million for a strategic roadmap to develop offshore wind industry in Maine, focusing on:

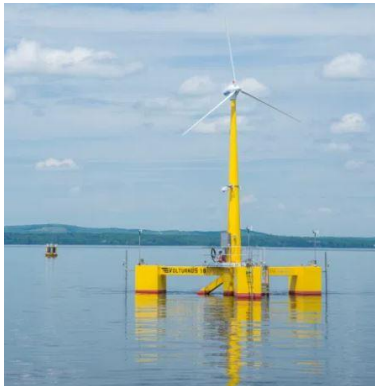
- Ports and infrastructure
- Manufacturing, supply chain, workforce
- Innovation
- Research array and research priorities
- Ocean and environmental data
- Stakeholder engagement



Maine Offshore Wind Projects

2013

1/8 Scale Pilot Project - 1 turbine (Castine - UMaine, Cianbro, MMA)



2023

10 MW Demonstration Project - 1 turbine (Monhegan - NEAV LLC, UMaine)



2025+

Research Array - 12 turbines or less (State, UMaine, NEAV LLC)



TBD*

Commercial Development - BOEM Leasing and Permitting

University of Maine Technology

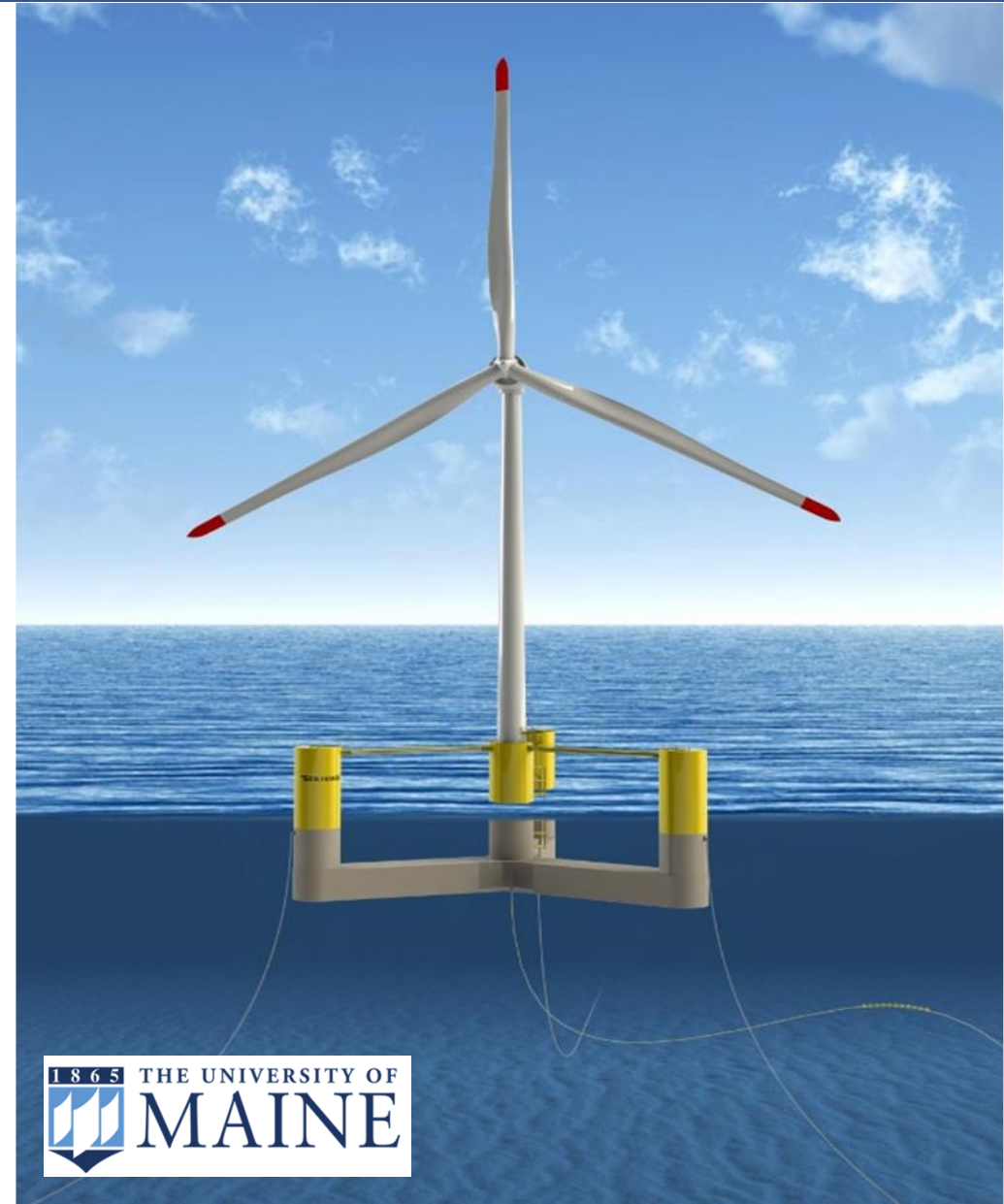
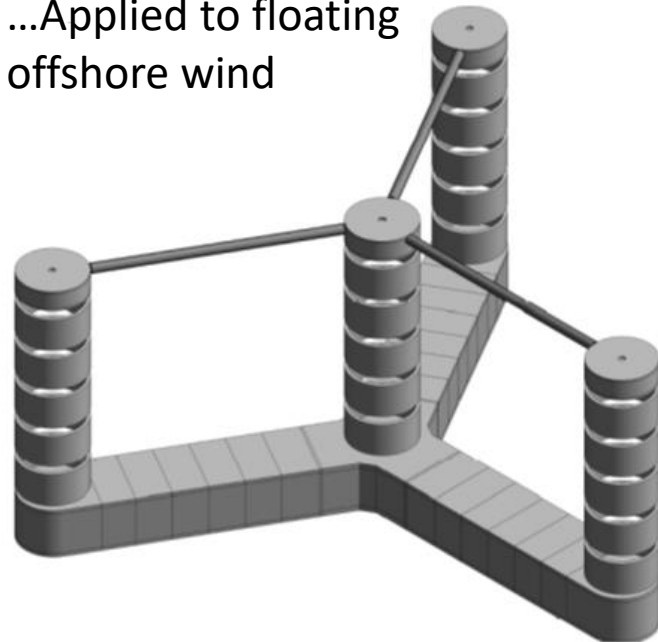
Optimized for Maine

- Can be built in Maine
 - Concrete / not steel
 - Modular construction
 - Creates jobs in Maine
- Fits Maine's waters
 - Suited for mid-depth waters
 - Very stable & shallow draft

Common modular construction



...Applied to floating offshore wind



State of Maine

- Governor's Energy Office (lead)
- Department of Marine Resources
- Governor's Office of Policy Innovation and the Future
- Department of Inland Fish and Wildlife
- Department of Environmental Protection
- Department of Economic and Community Development
- Consensus Building Institute (Consultant - Facilitator)

New England Aqua Ventus

- Diamond Offshore
Wind/RWE Renewables

University of Maine

- Technology

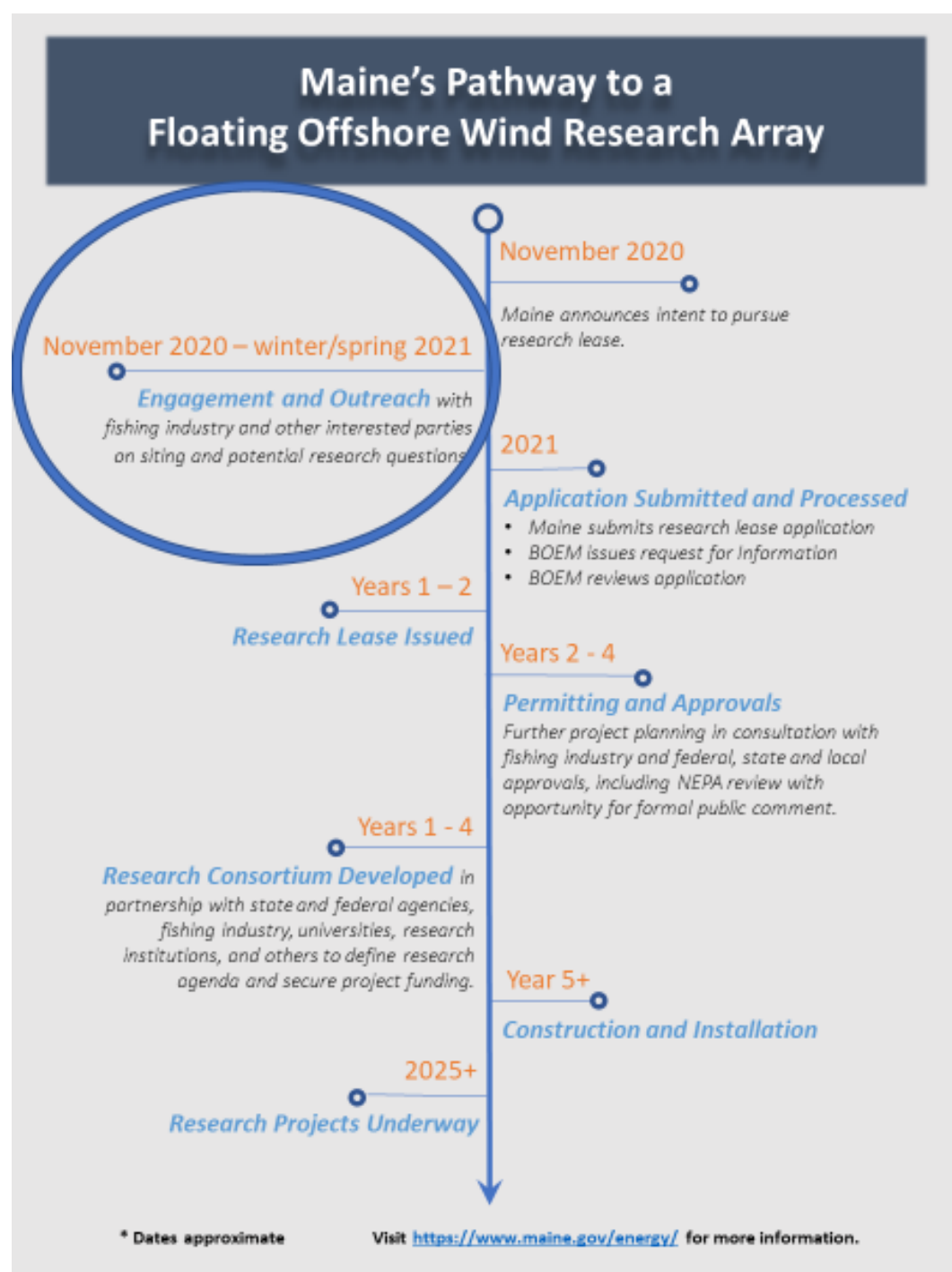
Federal Agency and MA/NH State Agency Coordination

**Research Array:
Who is Involved?**

Research

- Unlike fixed bottom foundations, there is no world-wide body of data to draw upon to understand how floating wind farms interact with the ocean environment
- State, in partnership with NEAV is committed to working with and ocean stakeholders on broad range of research goals including:
 - Environmental baseline & interactions;
 - Fisheries interactions (including whether/how different gear types can transit and fish within the array);
- The Technology research goals will be focused on:
 - Maximizing Maine content and Maine job creation
 - Reducing costs
 - Technology solutions to foster co-existence with traditional ocean users

Preliminary Project Timeline



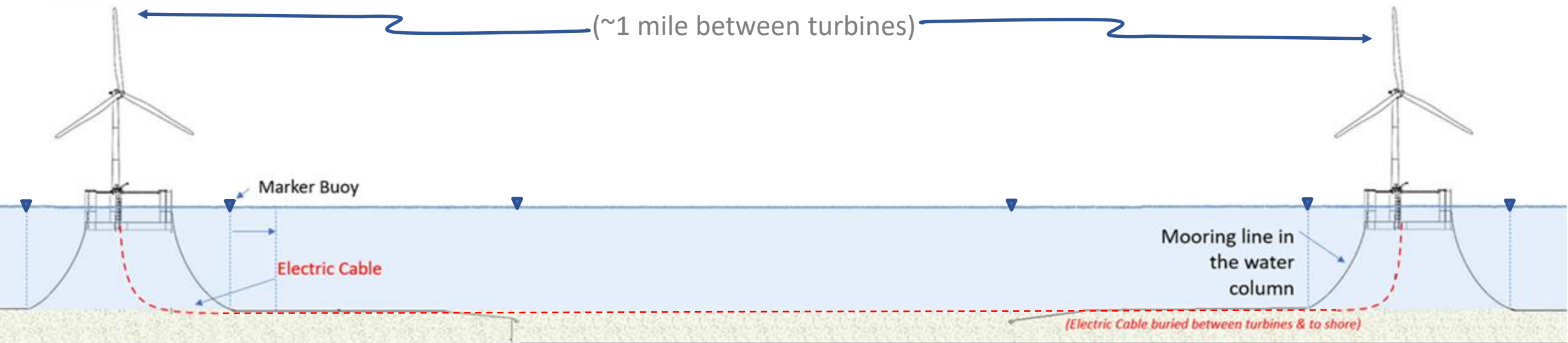


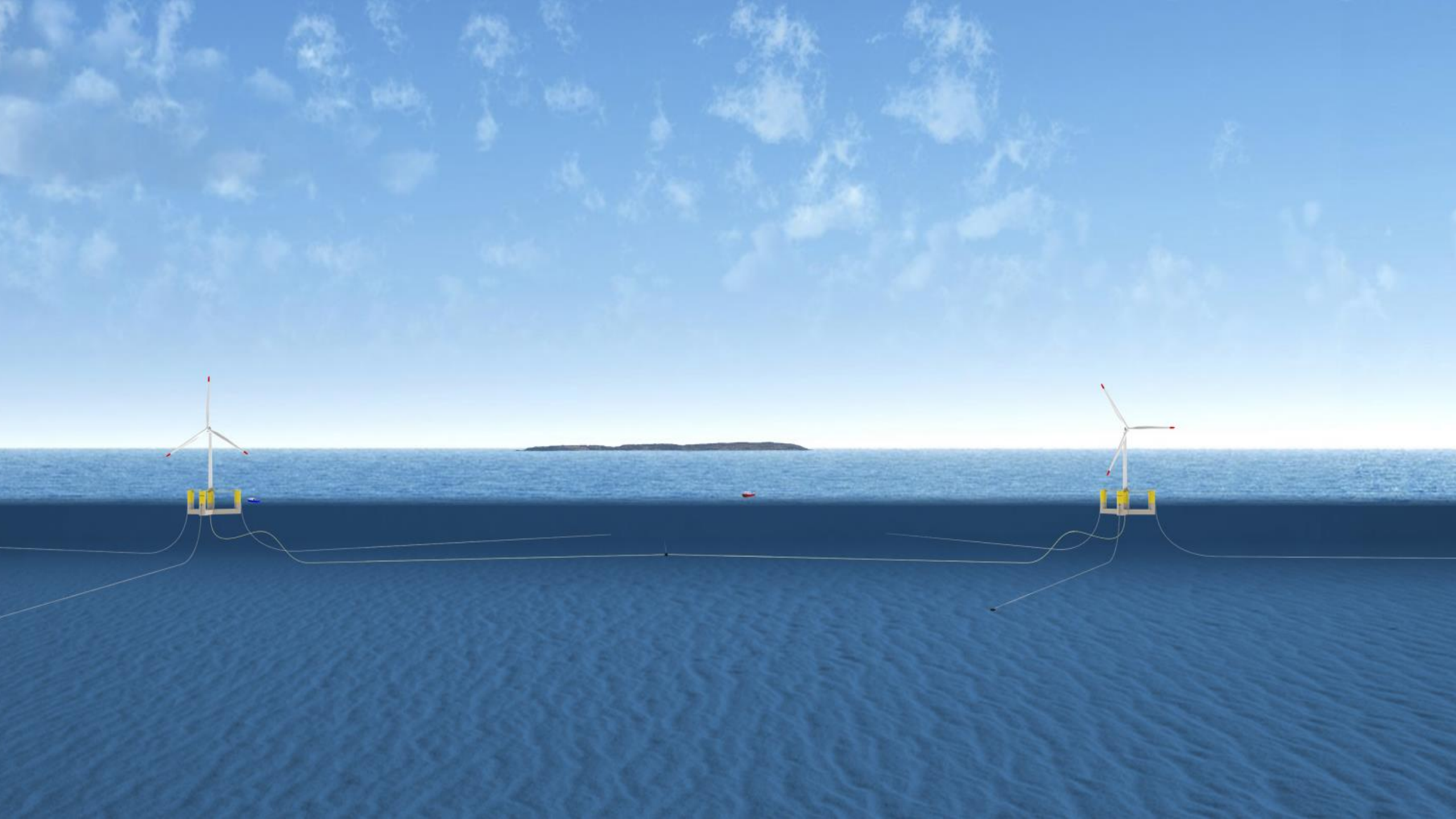
Industry Concerns and Siting Criteria

Indicative Wind Farm Geometry

10 MW class turbines using chain catenary mooring systems

- Water depth focuses technology options and general arrangement
- Catenary mooring lines have relatively small footprint





Visualizing The General Arrangement



Site Selection Process

1. Identify general area

Baseline Criteria

(distance to shore/grid connection/water depth/wind speed/exclusion areas)



Initial GIS Data Collection and Analysis

(publicly available data on fisheries, habitat, transportation, bathymetry, geology, military, shipwrecks, etc.)



**2. Eliminate and refine areas based on multiple inputs
~16 sq miles**

Fishing Industry Engagement

(Information on intensity of use, value, seasonality, diversity of fisheries for site selection and input to research framework)

State and federal agency consultation

Other interested parties, incl. NGOs, maritime industries, research institutions

Site Selection



Initial Siting Criteria

20-40 statute miles offshore

150 feet of water or deeper

Southern half of ME interconnect

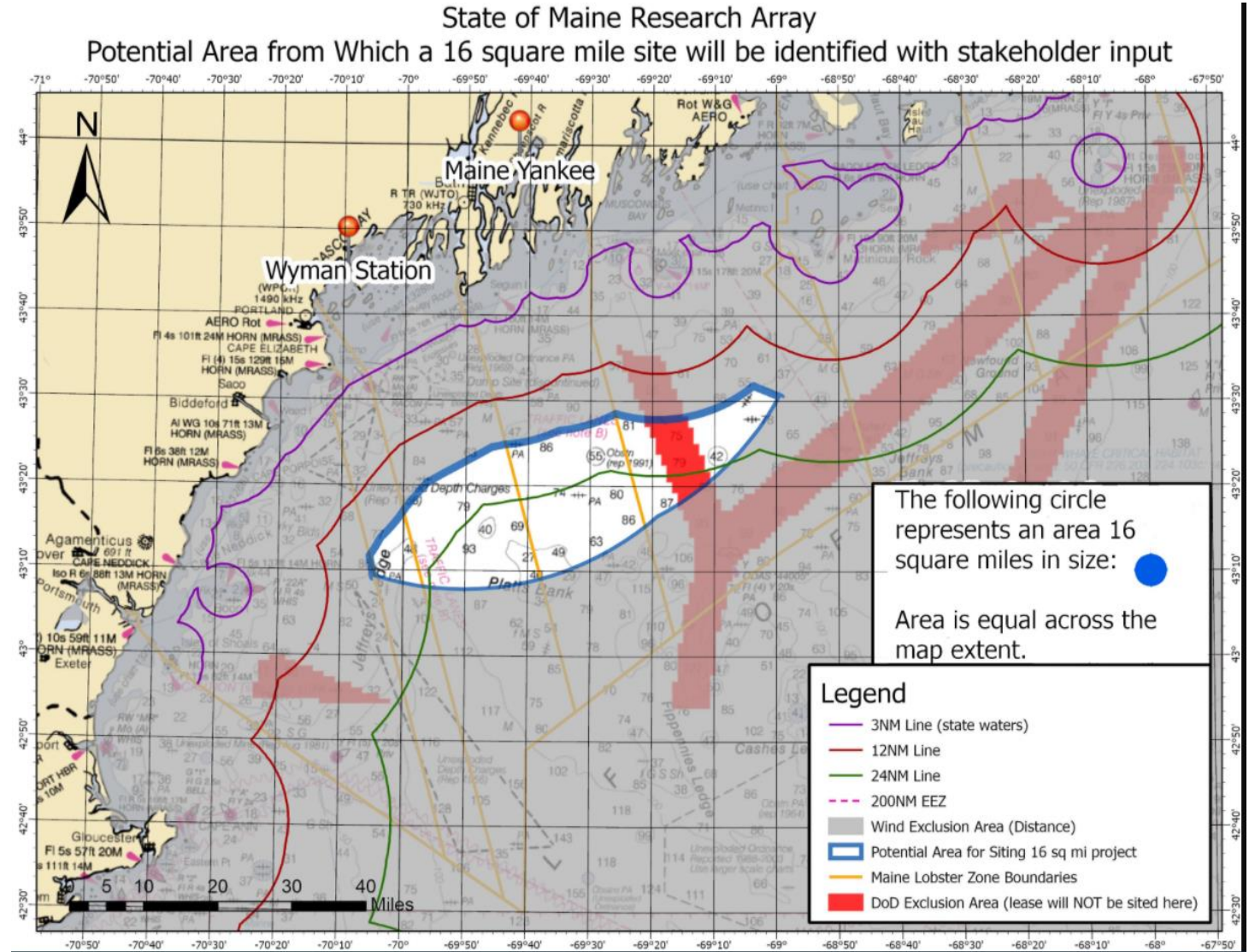
Bottom type gravel and/or mud

Minimal conflicts with known
fishing grounds

Avoid highly trafficked areas

Limit visibility from shore

Research Array General Area of Interest



**We are seeking
your input on:**

- Location
 - areas to avoid
 - habitat to avoid
 - areas of less conflict with fishing activity
- Configuration
 - to the extent it affects lease shape/siting
- Orientation of lease
 - e.g. northeast/southwest
- Navigational space
 - preference for turbines closer or further apart

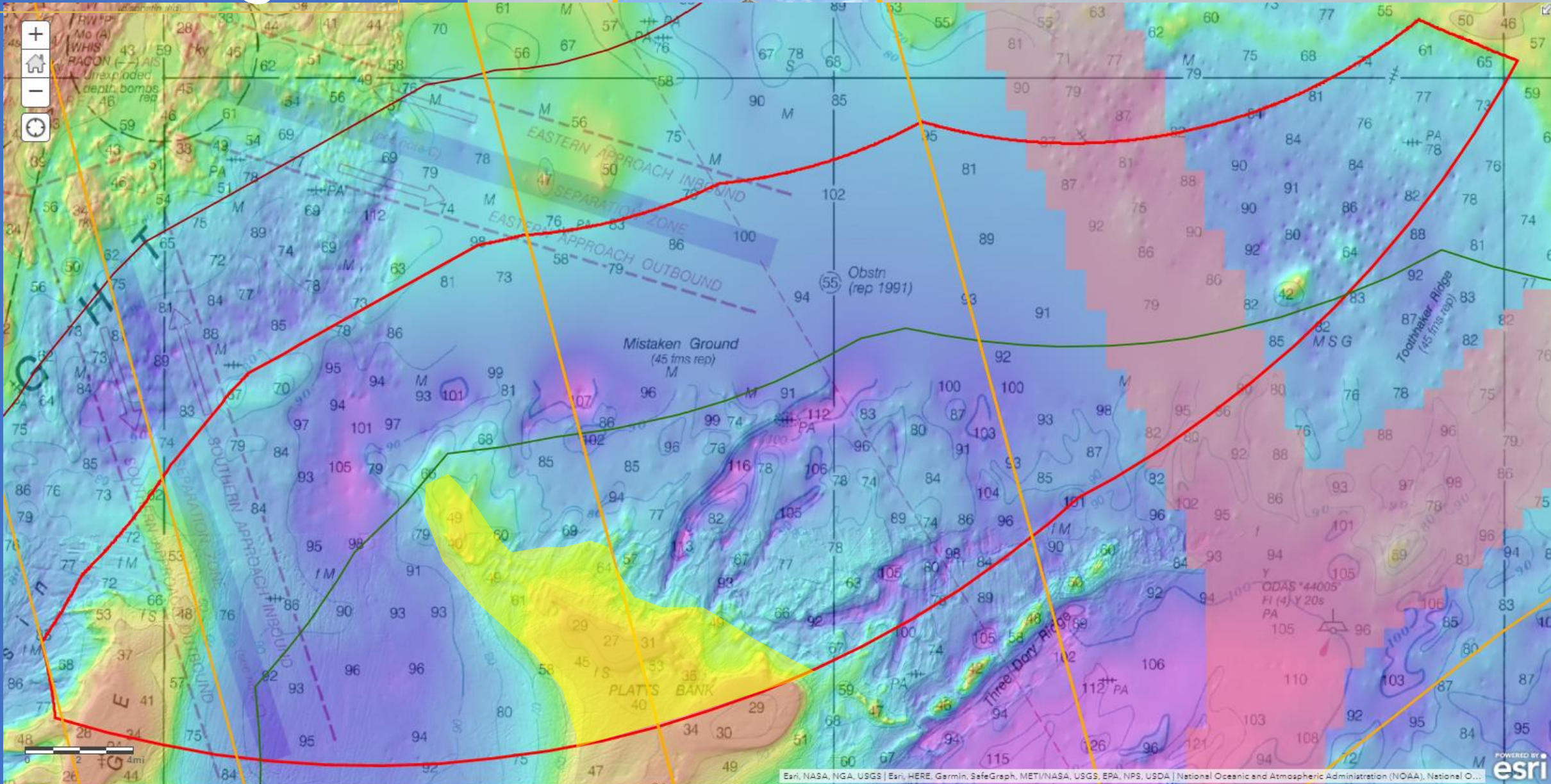
Multiple Ways to Participate

- Participate in Work Sessions
- Review materials on the website:
www.maine.gov/energy/initiatives/offshorewind
- Call or email DMR individually:
 - Carl.Wilson@maine.gov
 - Kathleen.Reardon@maine.gov
 - Meredith.Mendelson@maine.gov
- Participate in “dockside” conversations later in April

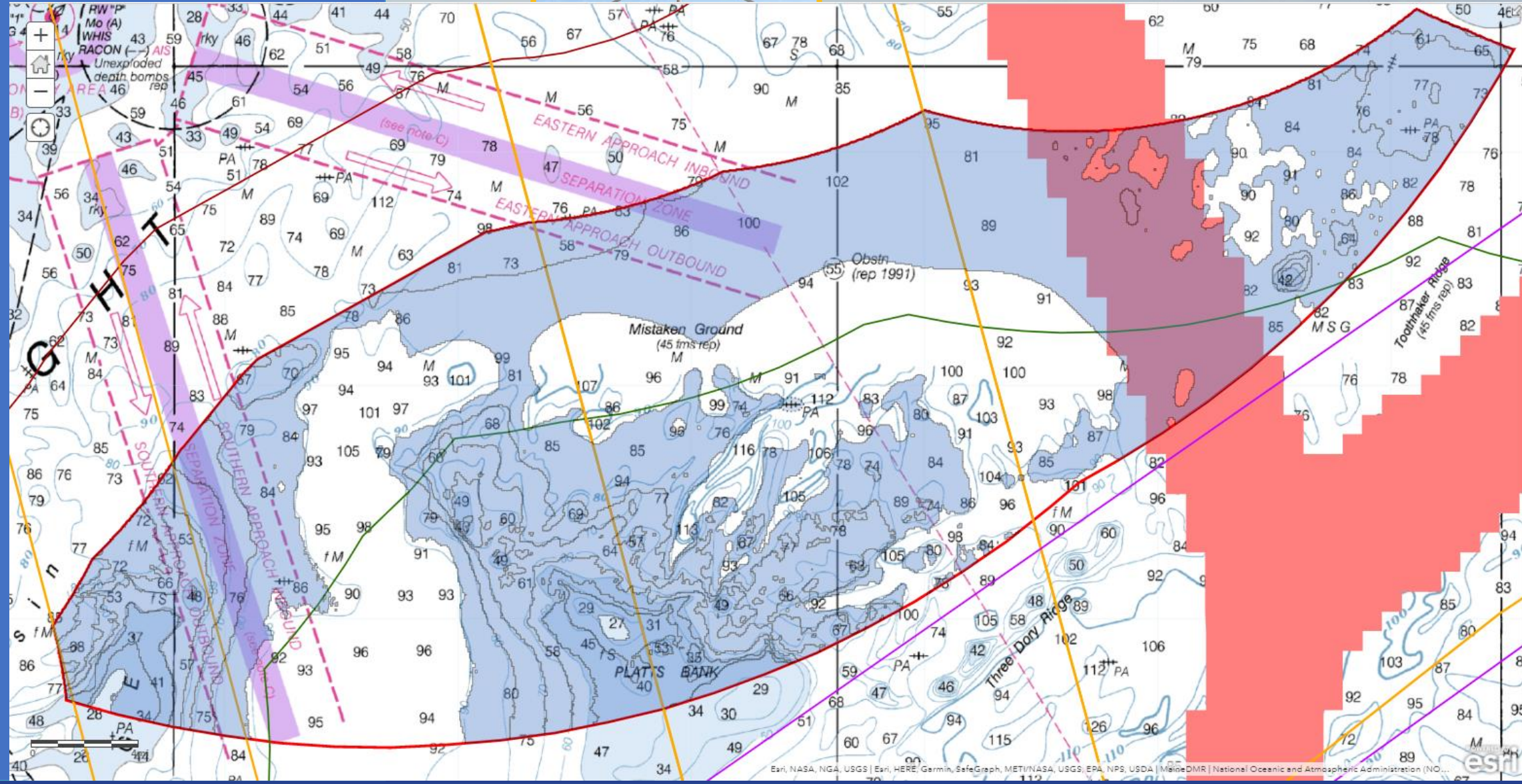


Siting Discussion

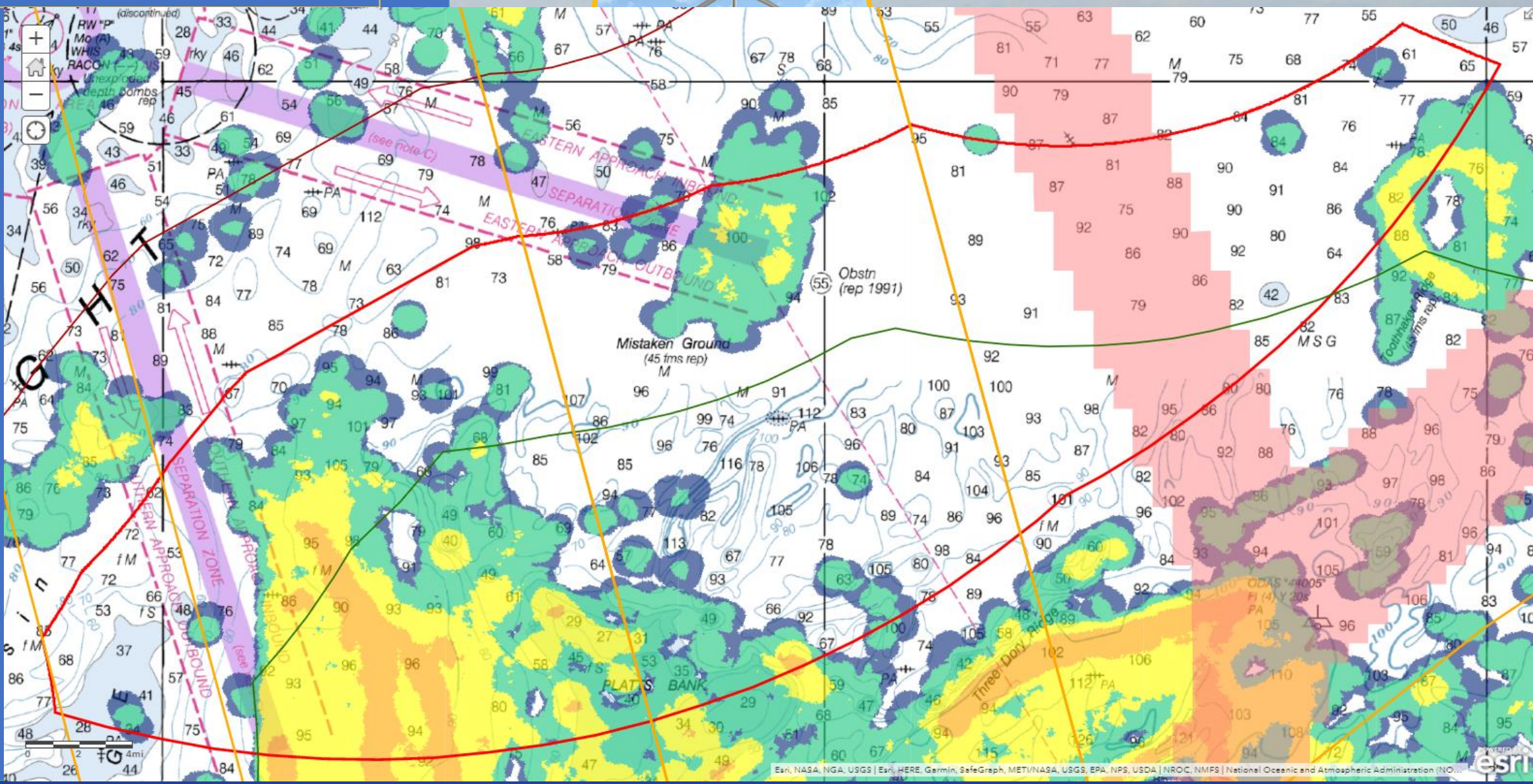
Recreational Fishing



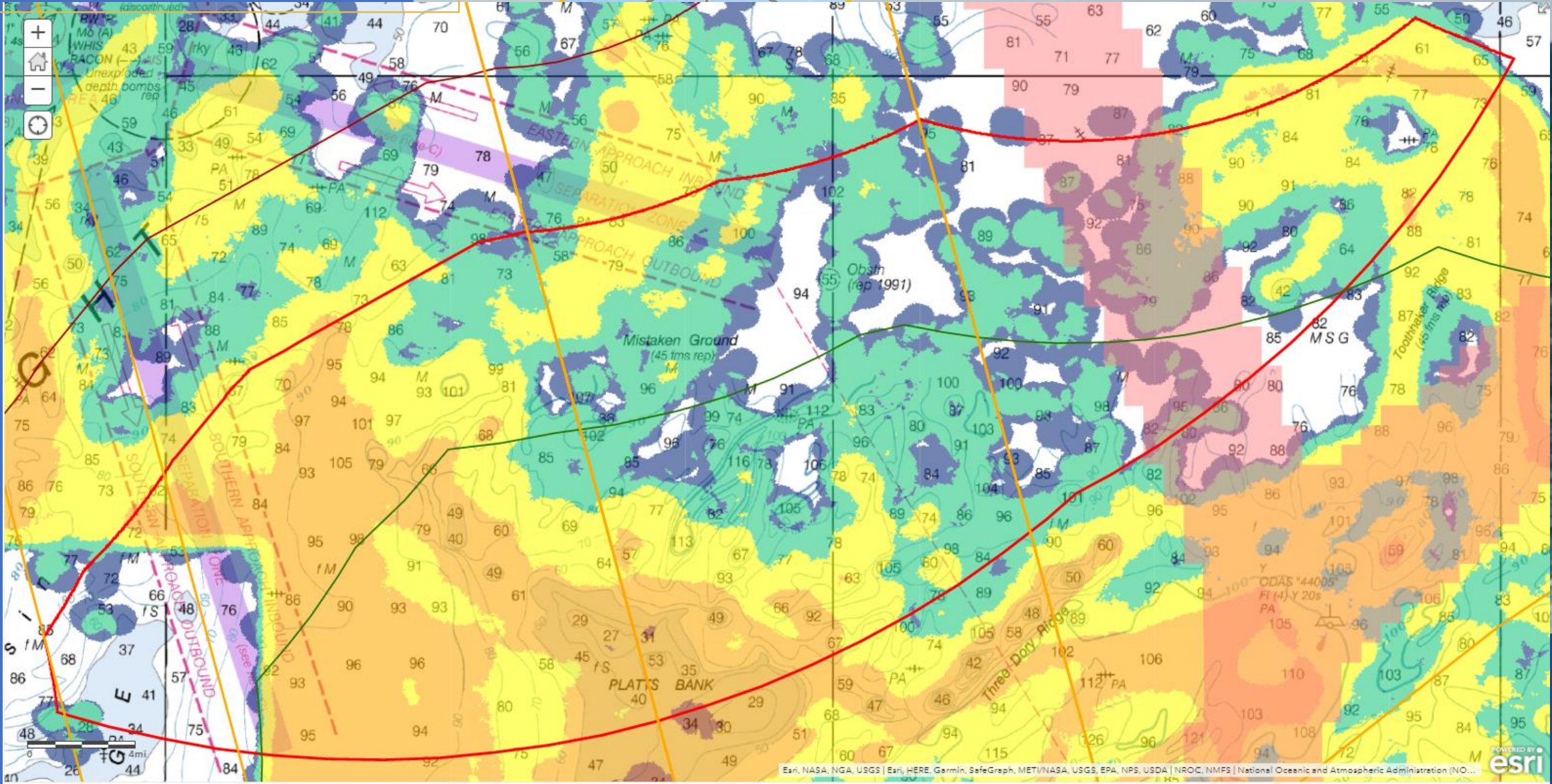
Lobster Fishing



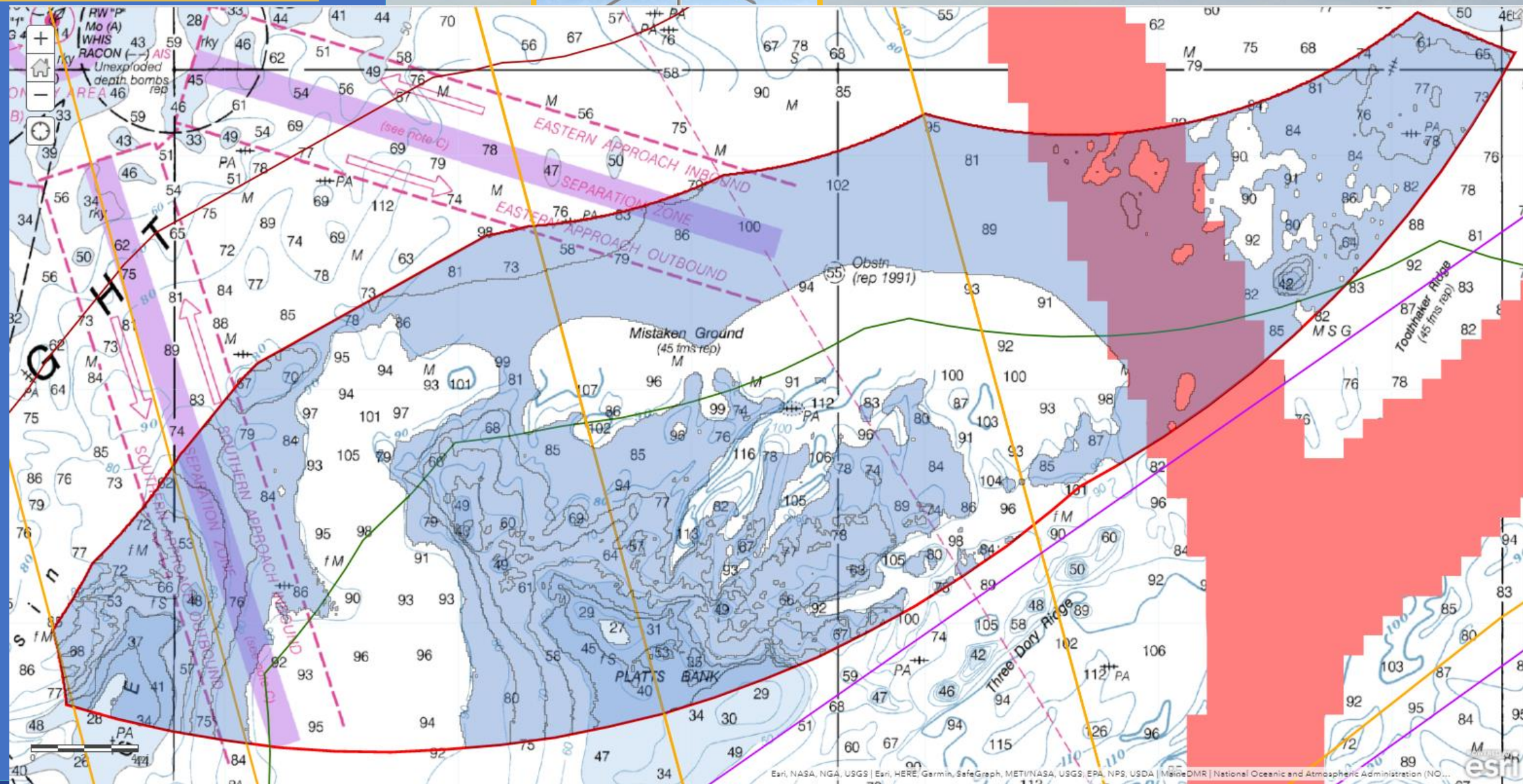
Multispecies 2015-2016

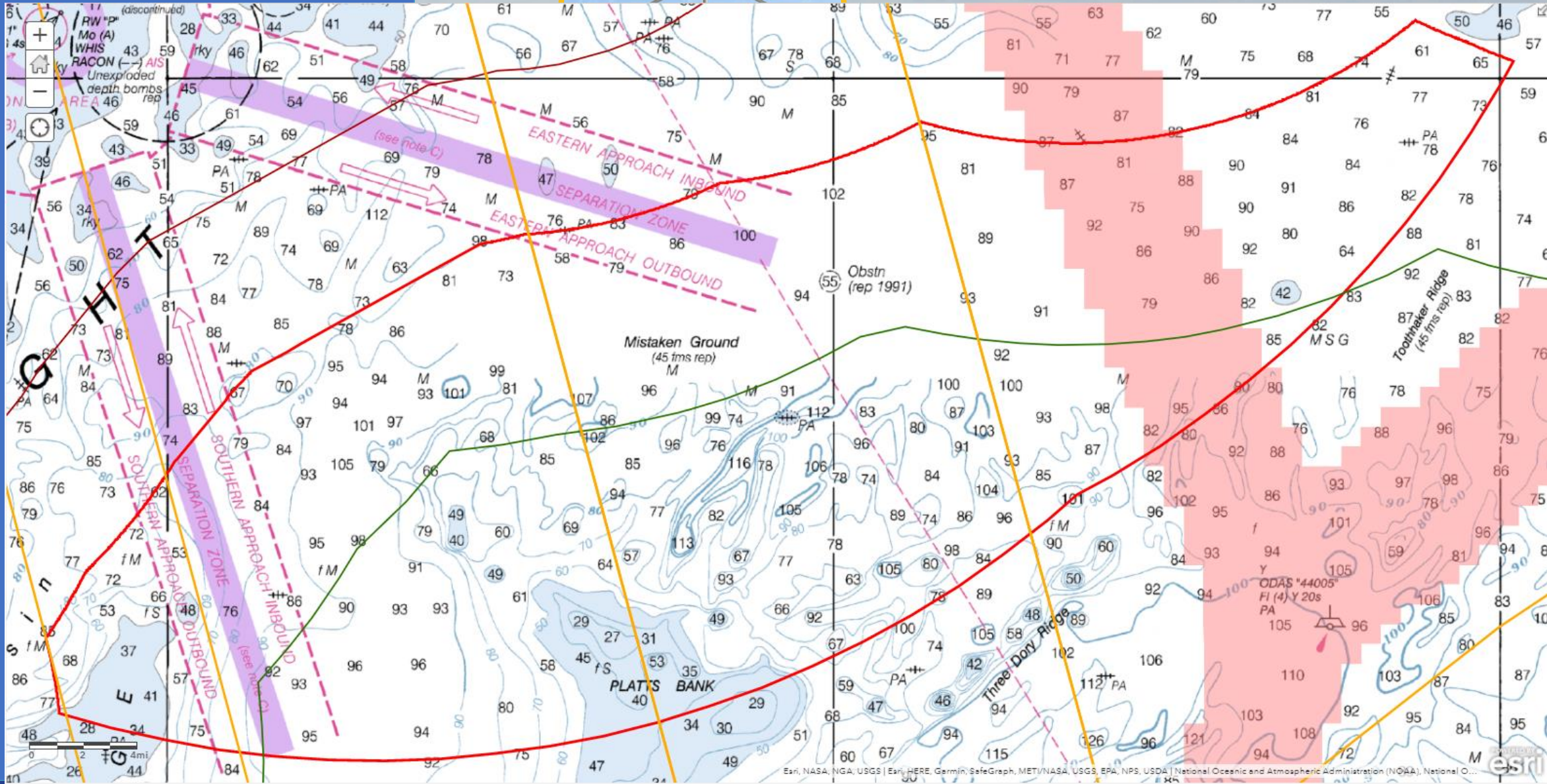


Multispecies 2011-2014



Overview Work to Date







Maine Research Array Process 2021

Fisheries Work Sessions Timeline

March 10: Work
Session #1 –
Diving into Data

Late March: Work
Session #2 – Further
siting & Exploring
Research Questions

Compiling
Additional
Input

TBD: Joint
Workshops
with
Wildlife

Research Approach

- Research is the key driver for the array.
- Research objectives will inform:
 - Siting process and decision
 - Project design, layout and operations

Overall research process:

- Key themes in initial application
- Further develop research approach through roadmap effort
- Stand up formal consortium, with diverse interests at the table
- Seek broad funding opportunities
- Open source data

Research Approach



- Environment and ecological interactions
- Interactions with fishing activity
- Navigation
- Technology research and demonstration, including mooring systems
- Workforce education and training
- Others?

Research Planning Questions

- What information do we want to have to inform future development?
- What concerns do we have that are relevant to OSW development generally, rather than just this site?
- What methodologies can we use to understand impacts?

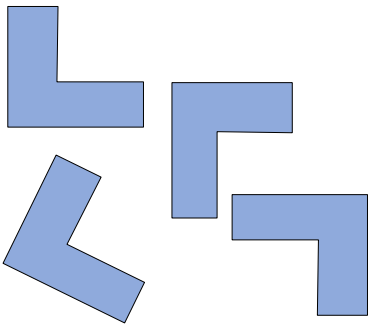
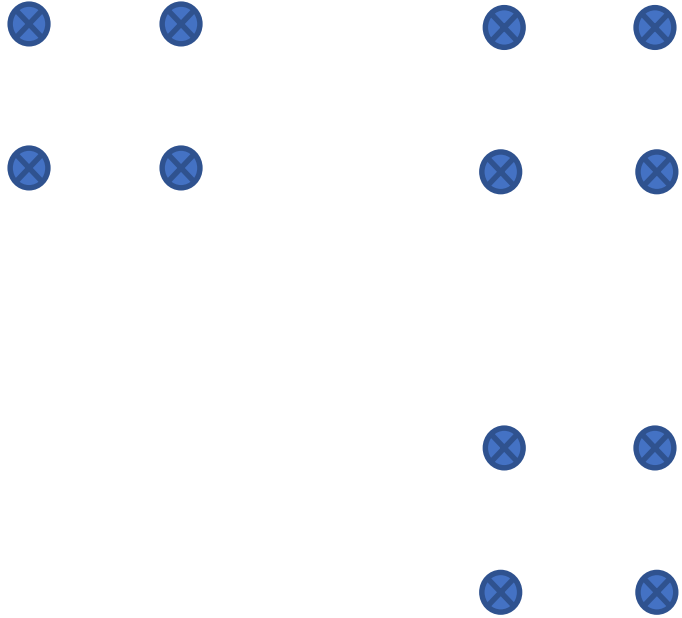
SITING

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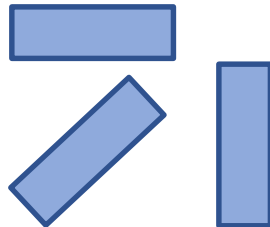
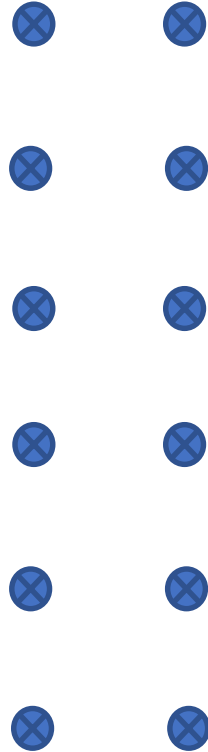
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Possible Array Layouts

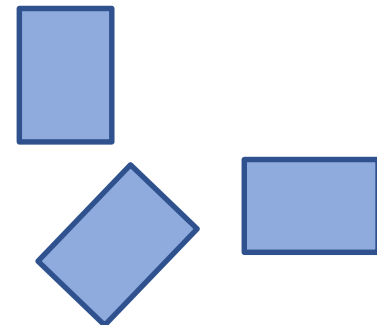
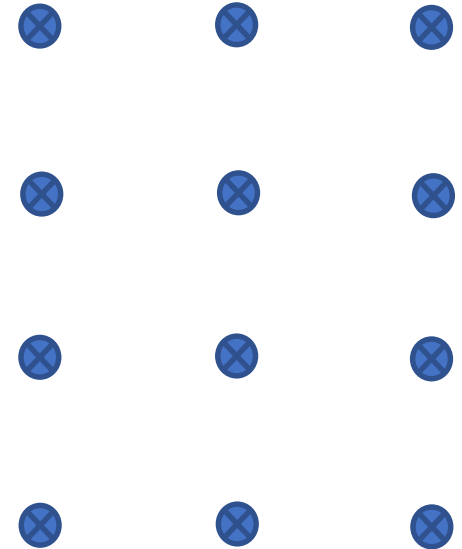
(1) Pods



(2) Lines



(3) Array



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