



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

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
- Engagement via Zonal meetings
- Direct engagement with interested others

Joint workshop

- Coordinating and refining advice from wildlife, fisheries and other

Work Sessions Objectives

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

Fisheries Work Session #2 Agenda

- 5:30 Welcome and Overview**
- 5:40 Follow up Q&A from Fisheries Working Session #1**
- 5:50 Siting Discussion**
- 6:40 Break**
- 6:45 Configuration Discussion**
- 7:05 Research Themes & Idea**
- 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

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



**Follow up on questions from
last meeting**

What kinds of permits does the array need to get? For instance, will it need to get an incidental take permit or incidental harassment assessment?

- Prior to Lease Issuance:
 - BOEM will issue public notice of application
 - BOEM conducts National Environmental Policy Act (NEPA) review, including public comment.
- After Lease issuance:
 - Approval from BOEM to commence studies of the site (fish, whales, birds, geology, wind, etc.)
 - Site specific information will be used to develop and construction and operations plan.
 - State/developer must submit research activities plan (construction and operations plan) to BOEM for approval.
 - NEPA review, including public comment, and conduct extensive consultations with other agencies, including incidental take authorization (MMPA) and ESA consultation prior to approving the construction and operations plan.
- Permitting expected to take a few years and will include interaction with researchers and the general public through official public comment opportunities and additional stakeholder outreach.

How long will the moorings be, at what angle, and what distance from turbines will be inaccessible due to moorings or electrical cables in the water column? What will be the “off-limits” mooring zone around each turbine? And, how will these obstructions be marked?

- Do not have specific measurements available at this time.
- Details will be developed over the next few years as engineering progresses.
- Obstructions will be marked, further discussion needed on how.
- Fishermen suggest that marking buoys are another obstacle; GIS marking may be preferable.

What will the anchoring lines be made of and do different materials matter for entanglement, scraping or scarring and other impact risks?

- The specific mooring line materials have yet been identified.
- Options that consider technical feasibility and potential impact on other ocean uses will be developed as part of the engineering and permitting phase of the project.

Will there be research into the anchoring cables in order to minimize fishing exclusions zones around each turbine? Can one try different anchoring arrangements as part of research?

- YES.
- This is one of the most important research priorities of the research array
- Goal is to figure out how floating offshore wind projects can allow as much leeway for fishing as possible

What is the anticipated voltage of the cables in the array, and from the array to shore?

The cables are anticipated to be 66KV, which is industry standard. These will be for AC (Alternating Current) technology.

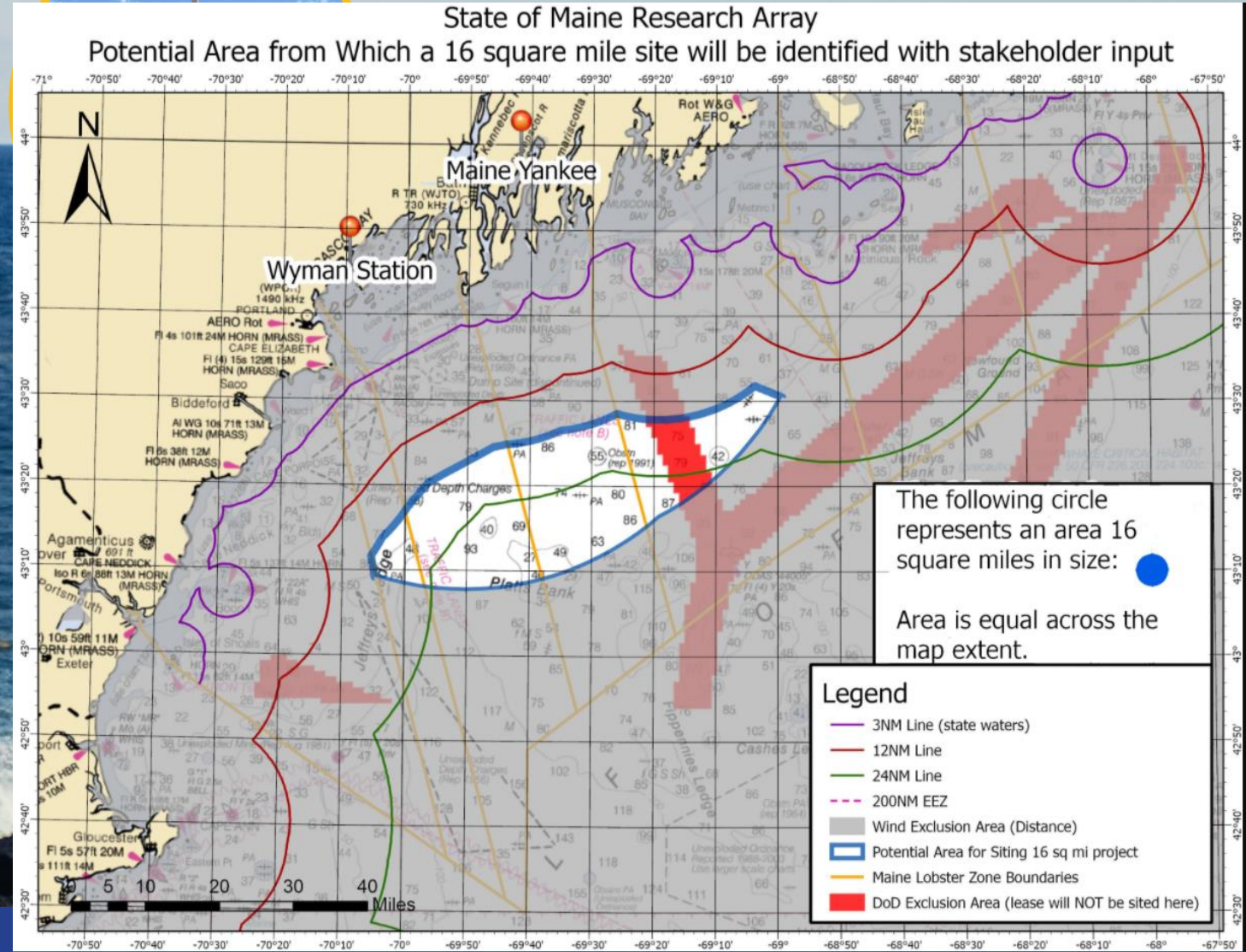
Can these offshore platforms be used for additional co-beneficial activities like aquaculture or hydrogen production?

- Not planned for this project.
- Co-locating other uses would require separate federal permitting.
- Would also require compatibility with the project's research objectives, including assessment of how floating offshore wind impacts wildlife and marine resources as well as fishing activity.
- Researching floating offshore wind is the priority for this project, there are concerns that additional variables could raise challenges.
- If, at some future time, co-location of other uses was to be considered, the state would develop a process to hear from stakeholders about the concept and explore the potential impacts on the site, research, and permitting.

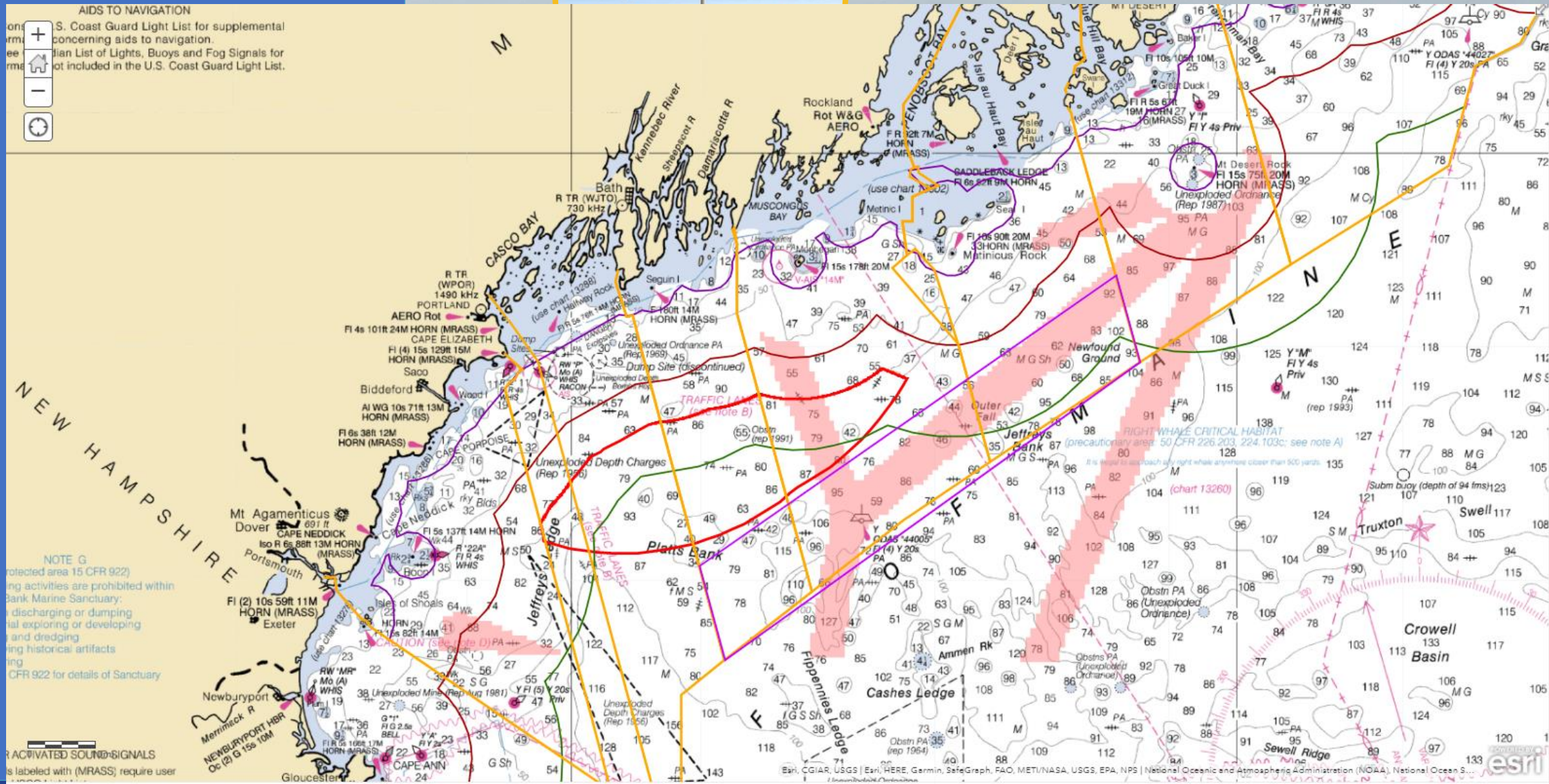


Siting Discussion

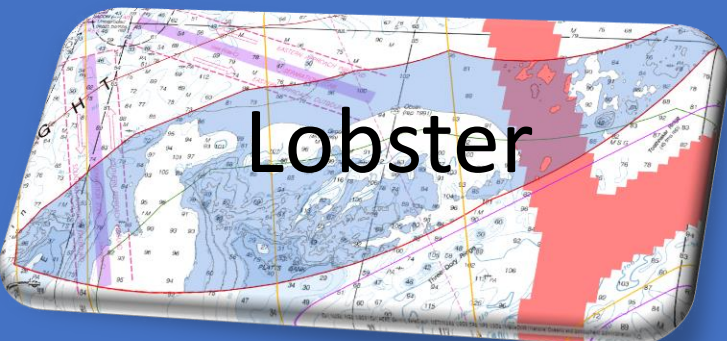
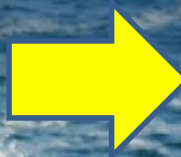
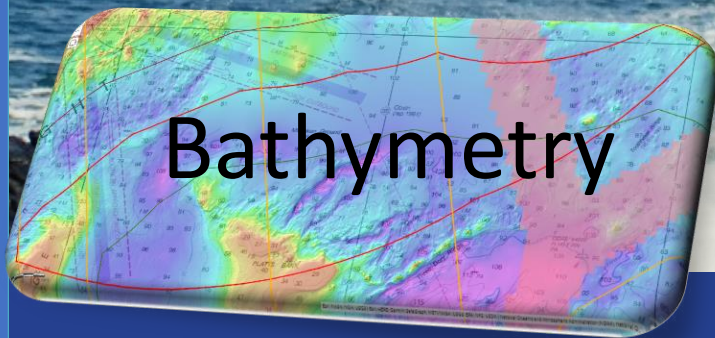
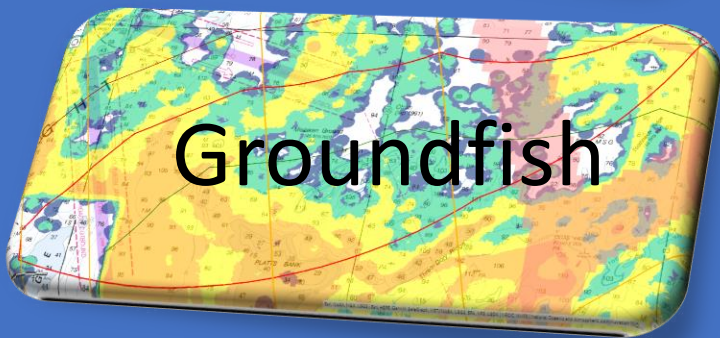
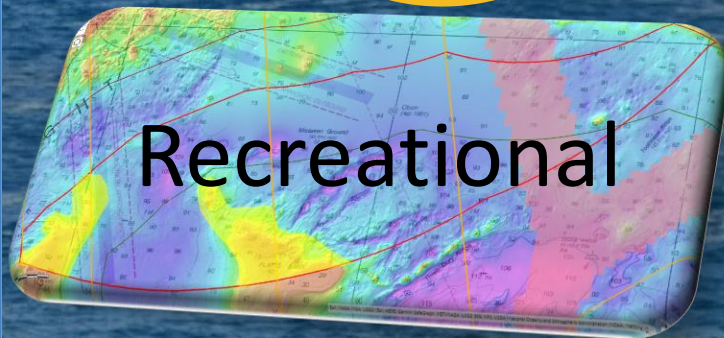
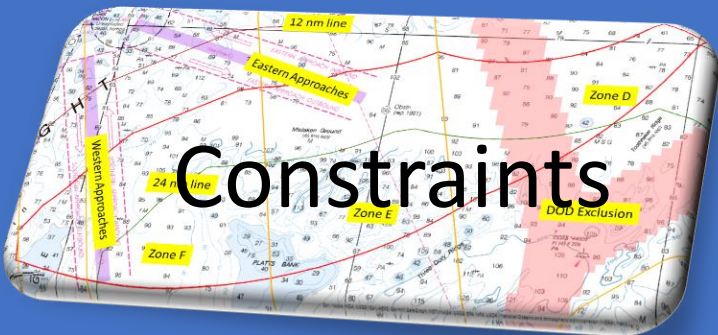
Research Array General Area of Interest



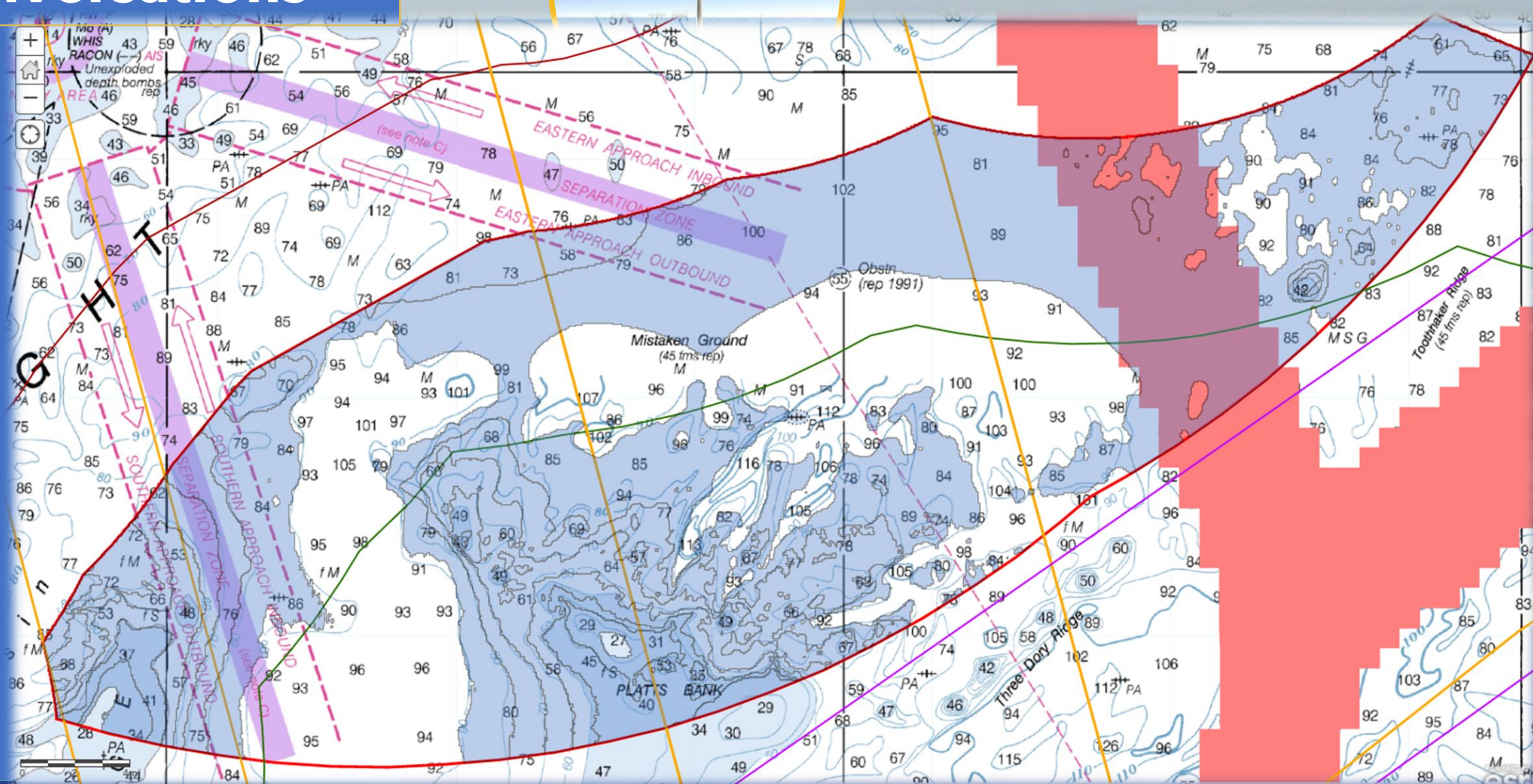
General Orientation



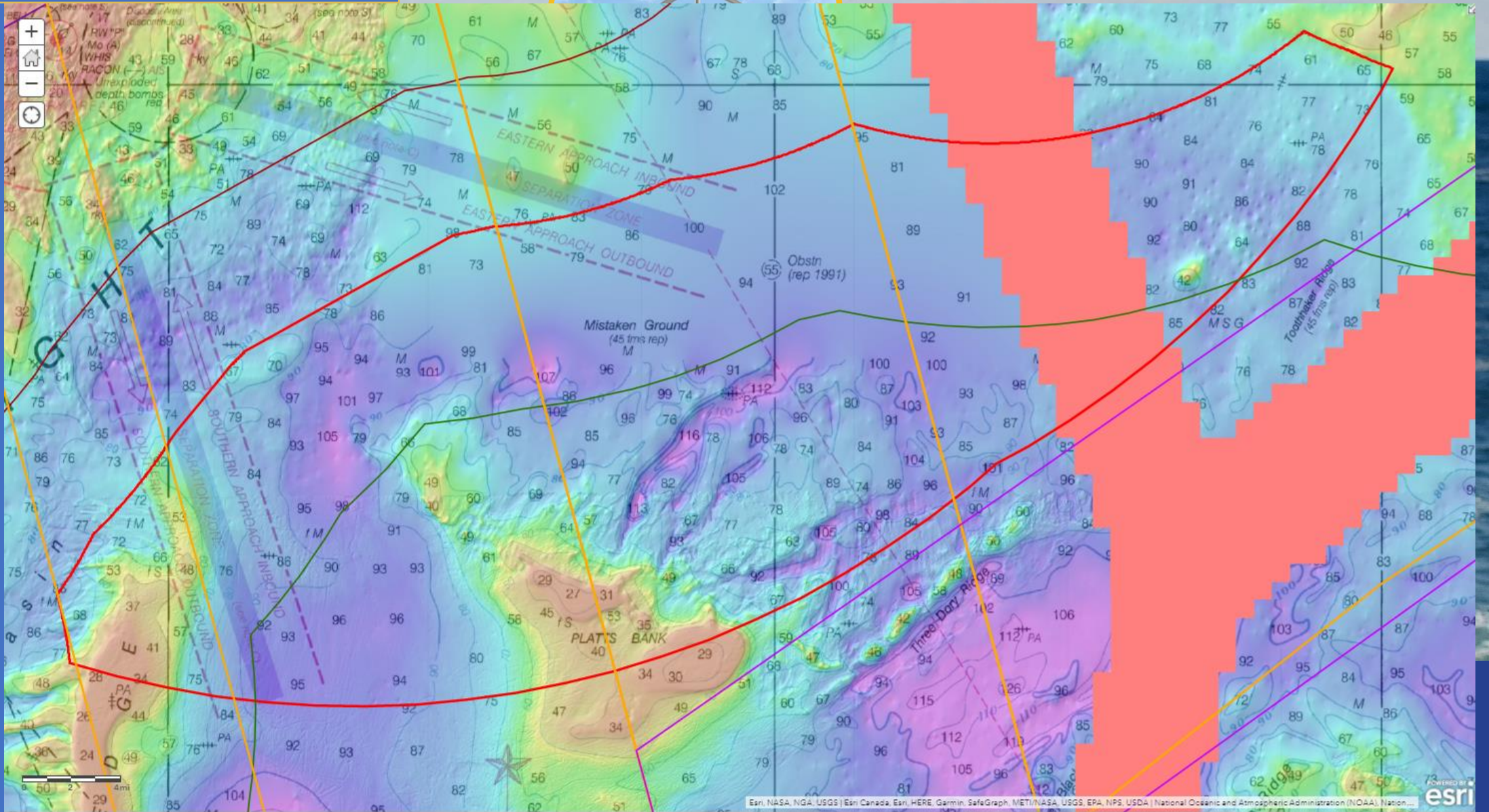
Overview Work to Date



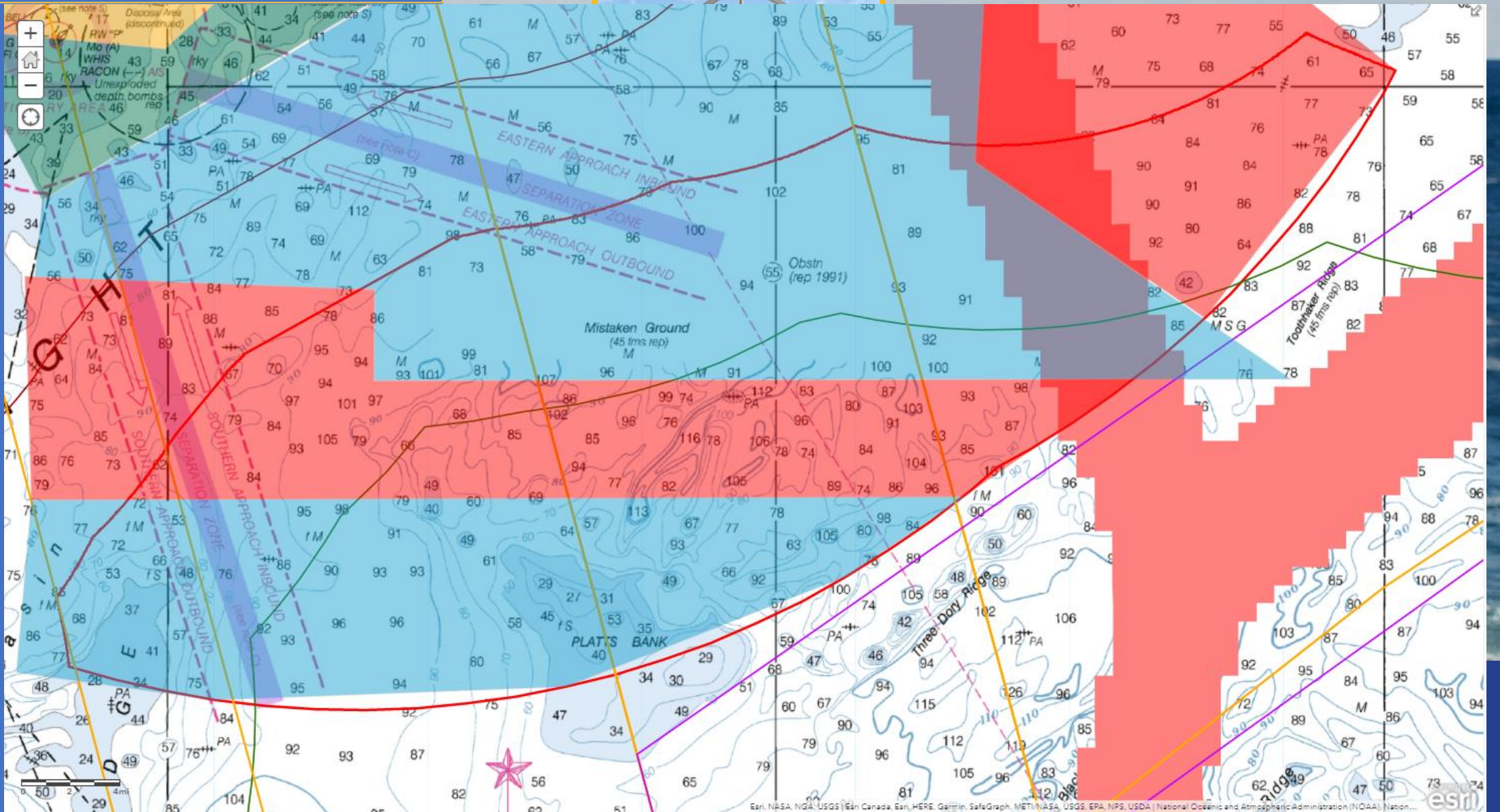
Where we left sighting conversations

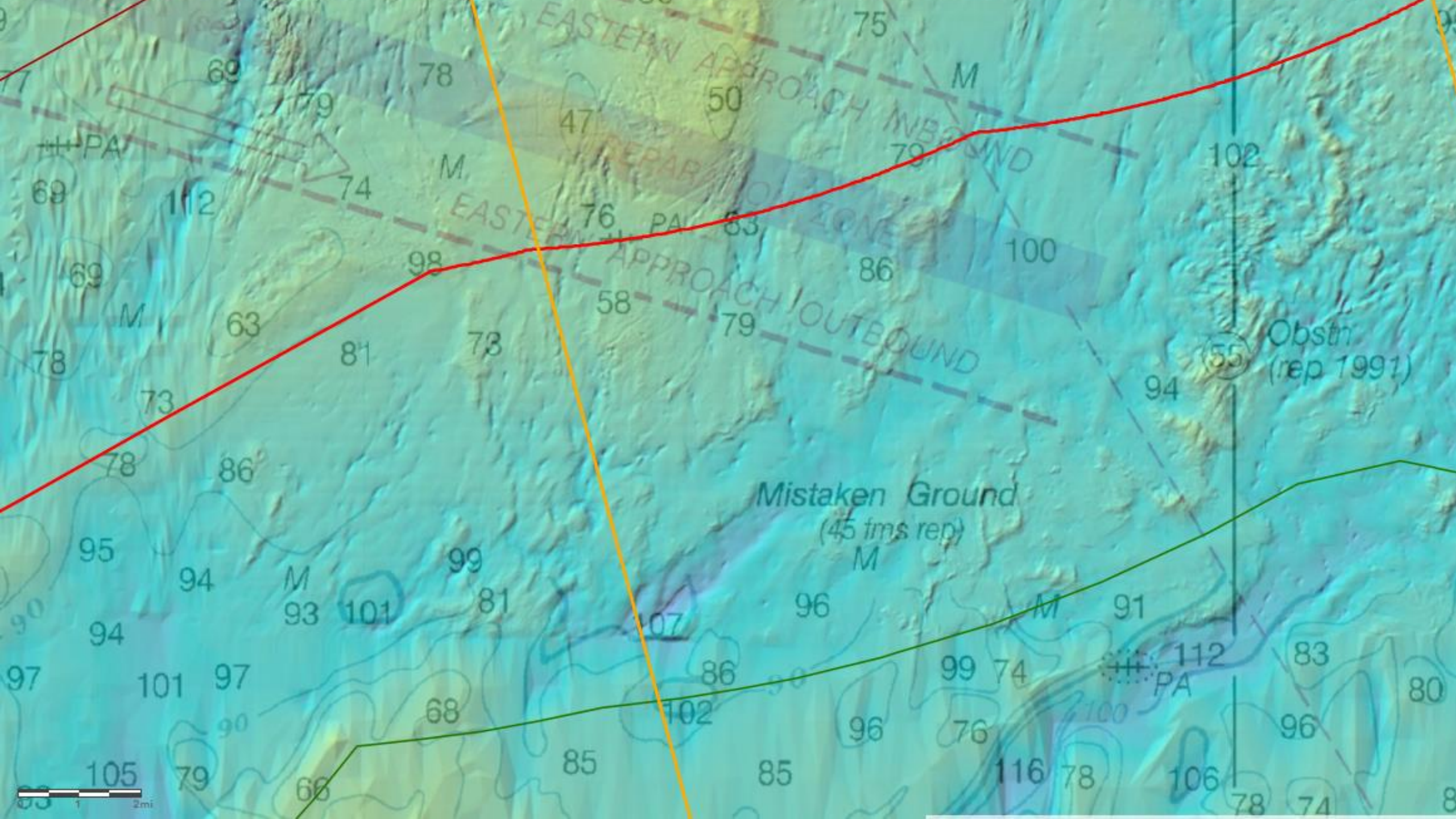


New Bathymetry Data

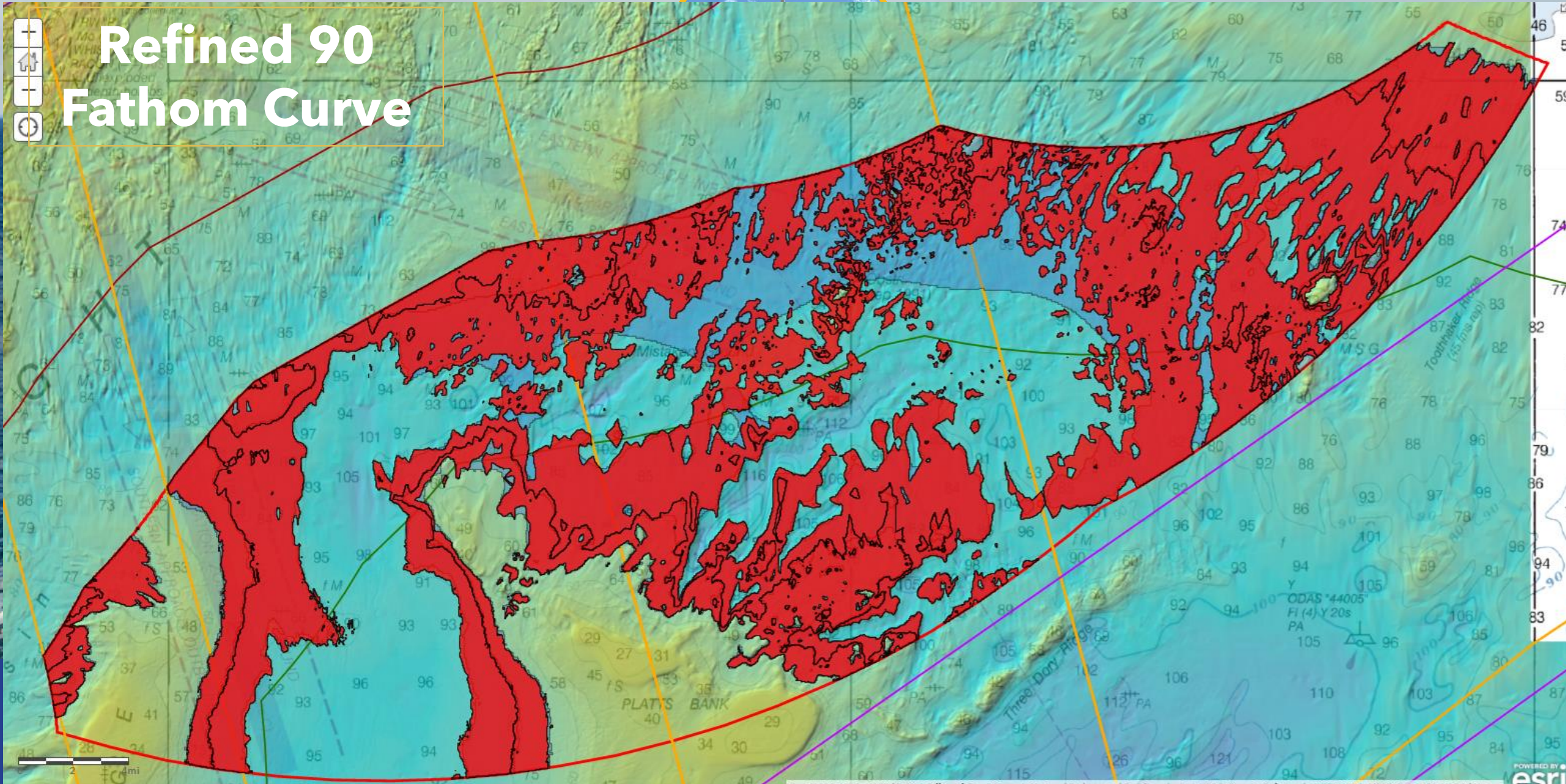


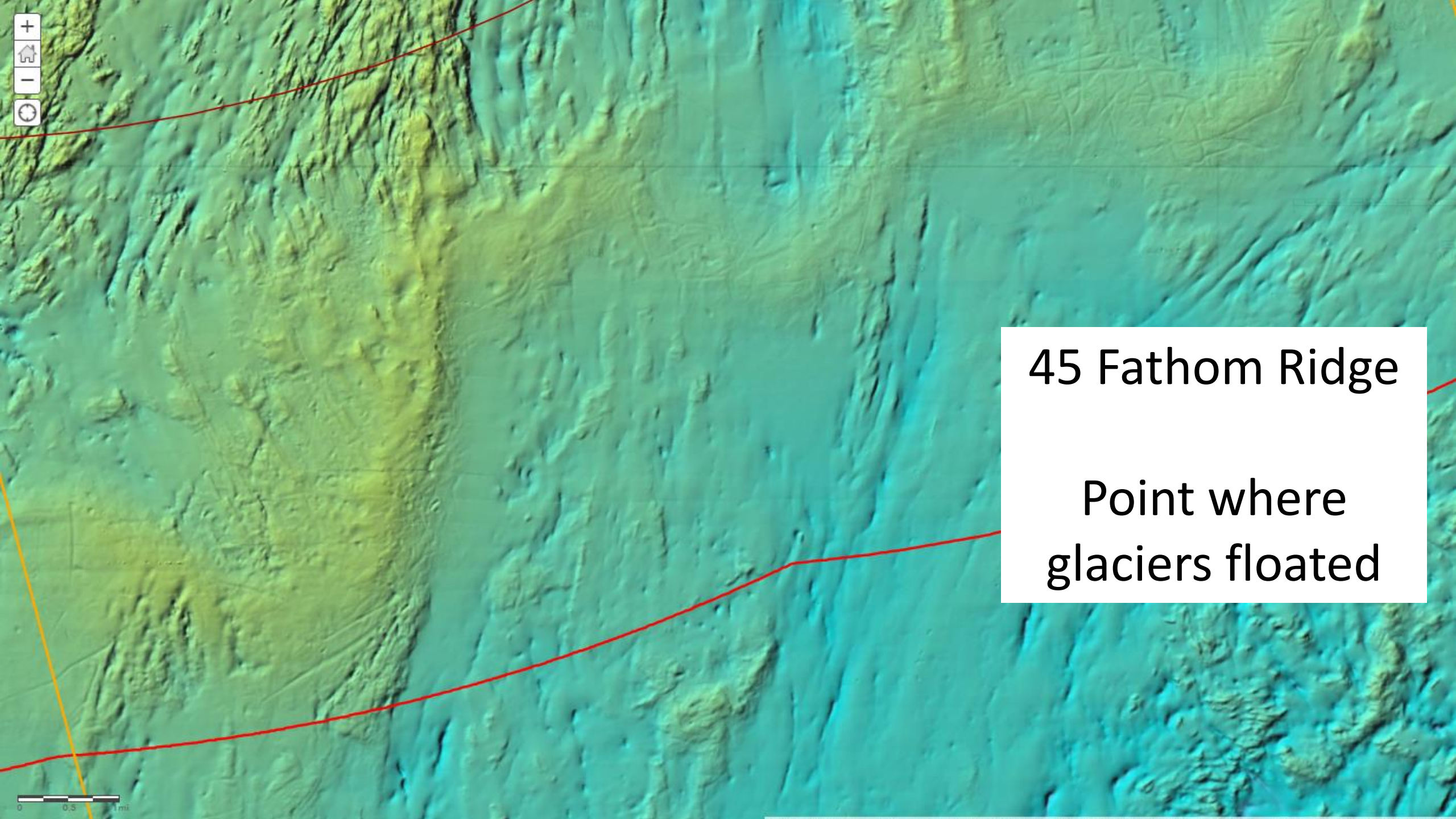
New Bathymetry Data





Refined 90 Fathom Curve



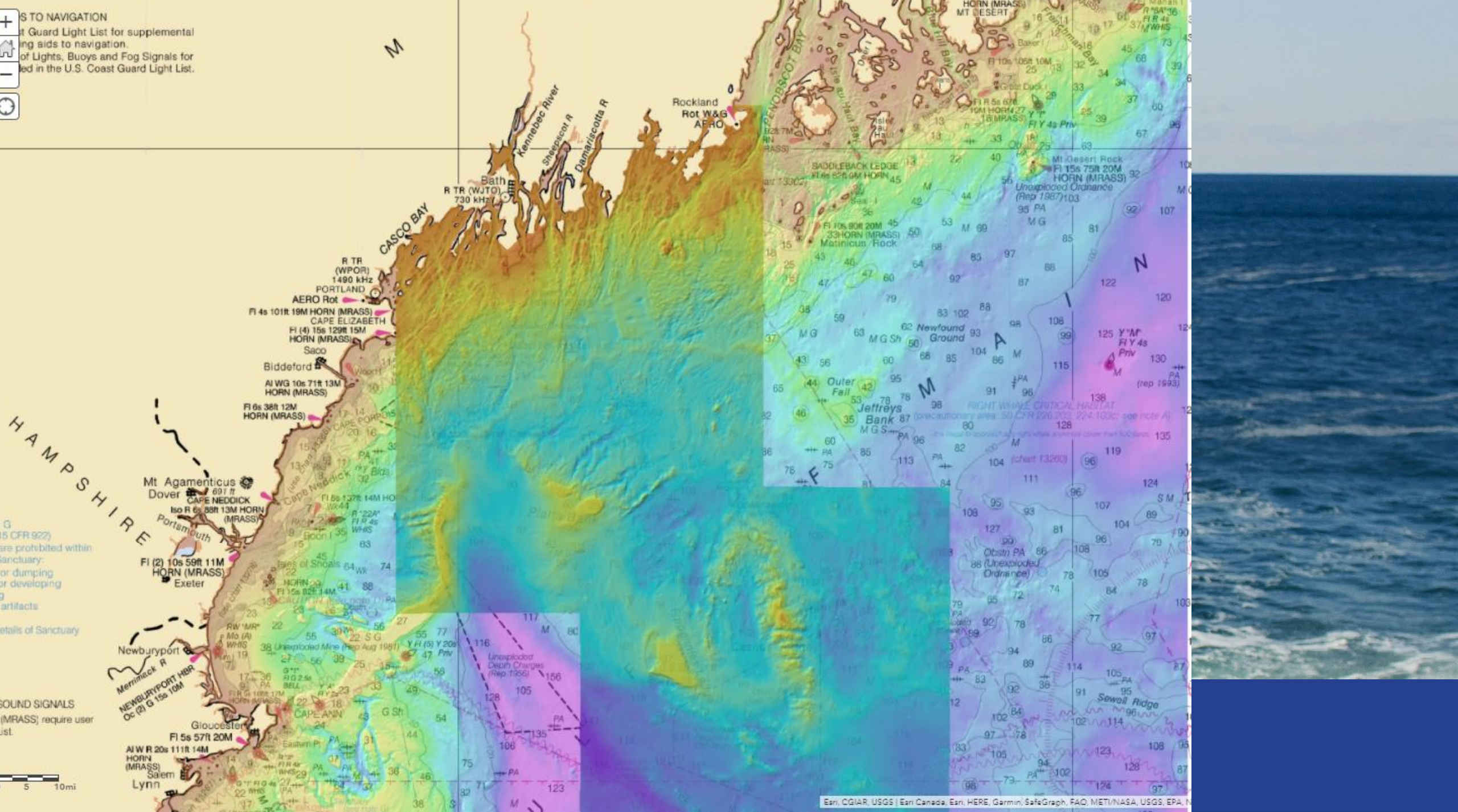


45 Fathom Ridge

Point where
glaciers floated

0 0.5 1 mi

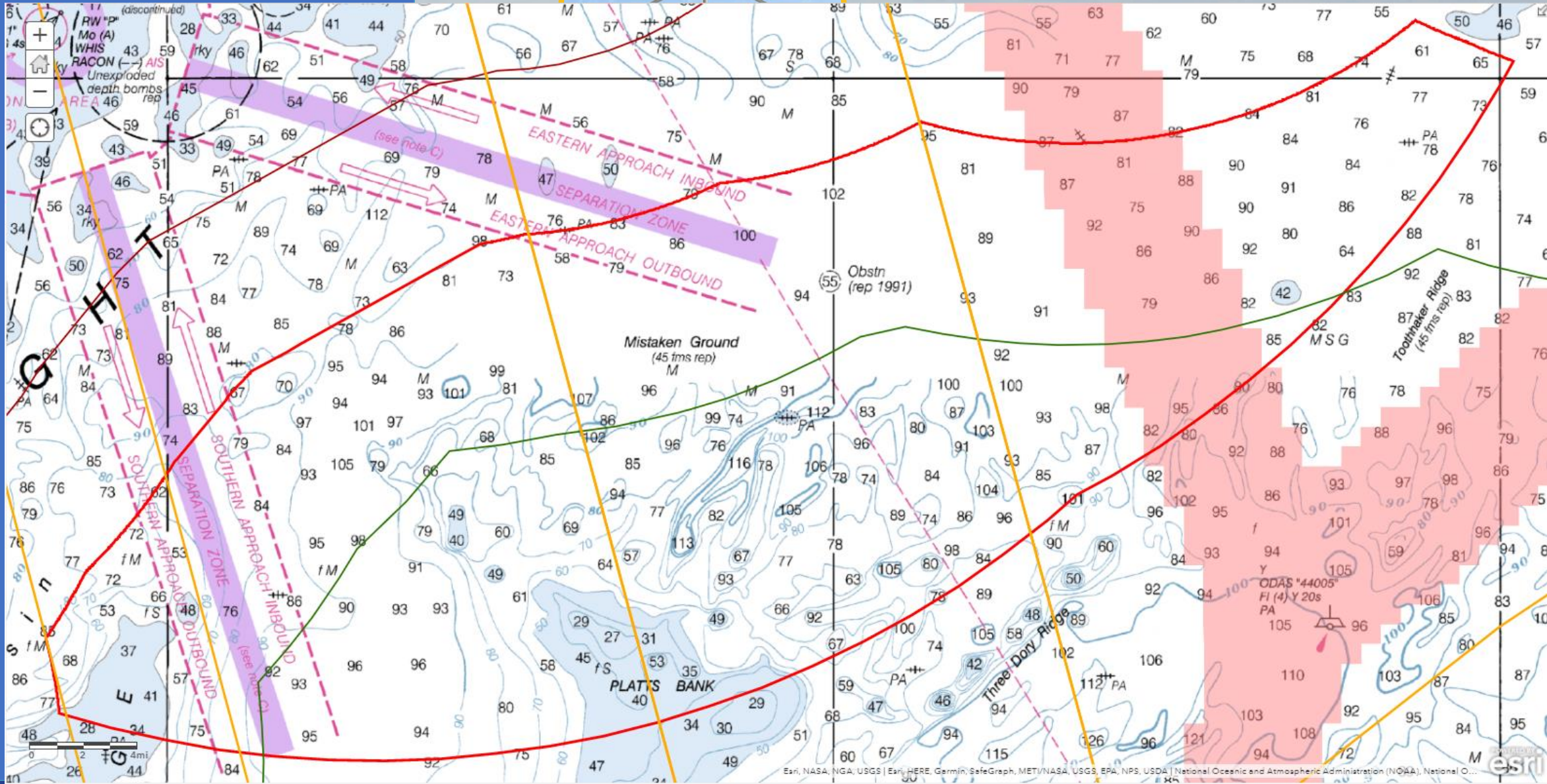
Aids to Navigation
 Coast Guard Light List for supplemental
 aids to navigation.
 of Lights, Buoys and Fog Signals for
 listed in the U.S. Coast Guard Light List.



G
 15 CFR 922)
 are prohibited within
 Sanctuary:
 or dumping
 or developing
 artifacts
 details of Sanctuary

SOUND SIGNALS
 (MRASS) require user
 list.







Configuration Discussion

SITING

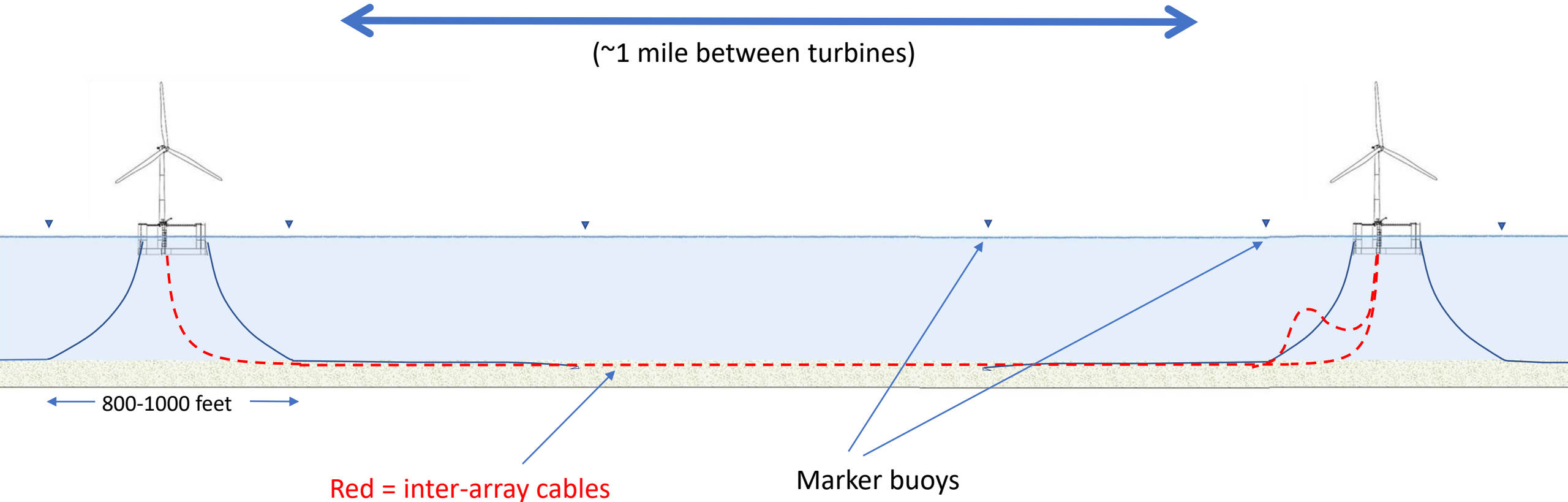
**We are seeking
your input on:**

- **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 area**
 - e.g. northeast/southwest
- **Navigational space**
 - preference for turbines closer or further apart

Indicative Wind Farm Geometry in 600' depth

10 MW class turbines using chain catenary mooring systems

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



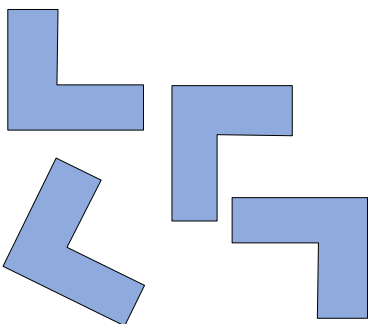
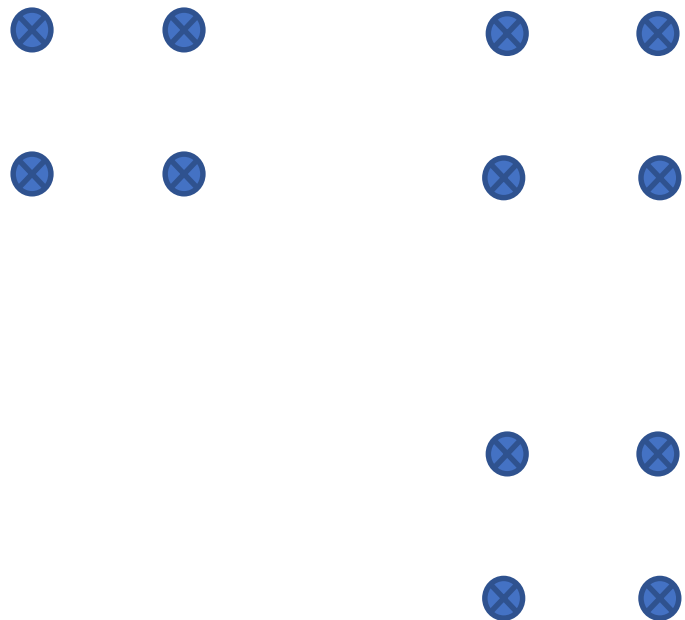


Visualizing The General Arrangement

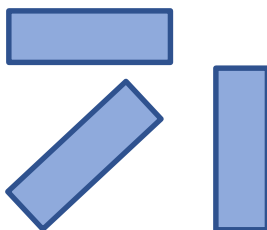
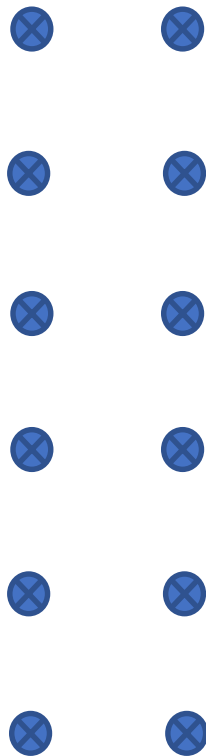


Possible Array Layouts for Illustration

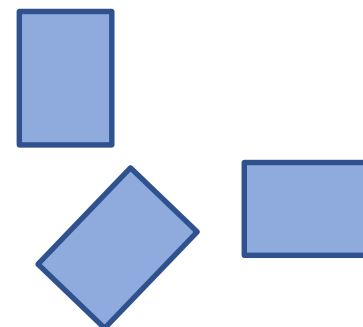
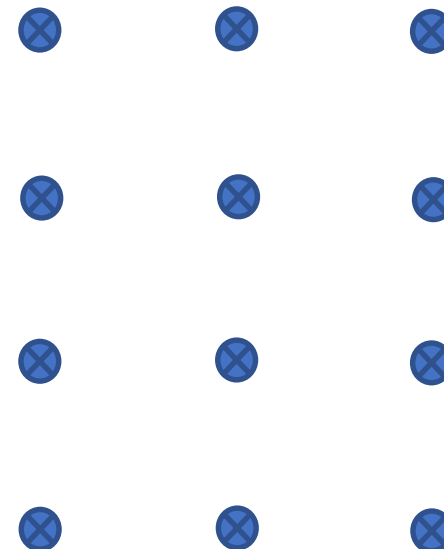
(1) Pods



(2) Lines



(3) Array



**We are seeking
your input on:**

- Configuration
 - to the extent it affects lease shape/siting
- Orientation of lease
 - e.g. northeast/southwest
- Spatial distribution
 - preference for turbines closer or further apart



Research Themes Discussion

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 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?

Research Approach



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

DMR Initial Questions

- **Environment and ecological interactions**
 - Are there detectable changes in the physical and biological system within the array?
 - Change in the community assemblage, abundance, and distribution?
 - Impact on ambient noise level of the environment and associated species
 - What is the presence and impact of EMF associated with the array?
 - What new survey methodologies are needed to account for OSW?

DMR Initial Questions

- **Interactions with fishing activity**
 - Can commercial/recreational fishing occur around these platforms?
 - Does sighting cause behavioral changes in fishing patterns, opportunities?
 - Do current fishery management schemes conflict with OSW?
- **Socio Economic and Community Impacts**
 - How do you measure the impact to fishing communities?
 - Displacement, equitability



Additions/Input?

Next Steps in Research Array Process

- Dockside meetings with individuals and small groups
- Continue to groundtruth activity in focus area
- DMR compiling information obtained throughout process for Governor's Energy Office
- Joint Fisheries/Wildlife Working Session (late April/early May)

Survey Work Process Improvements

- Meeting to review, evaluate, and revise best practices for survey work
 - Review existing survey notice process
 - Identify shortfalls
 - Discuss how to improve
- Compile information into a new process to inform guidance for survey work
 - Vet with various parties

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