Advisory Board

Maine Offshore Wind Research Consortium

Round 2 Research Projects Kickoff

October 15, 2025

A Few Guidelines for Today

Advisory Board Members

- Please put * in front of your name
- Practice common rules-of-the road: Please raise your hand, share the floor and respect differences of opinion.
- Please use video (if you can) and use hand-raise function (*9 on phone). We'll try to be sure we pause periodically to make sure you can participate fully but shout out if you need to or put ideas in the Chat.

Observers

- Thank you for joining, we are glad you are here. We'll answer Advisory Board questions first but try to make sure we leave time for additional questions as well.
- Please keep video off and so we can focus discussion on the Advisory Board members.
- *Mute unless speaking please (*6 on phone to unmute)*

Meeting Objectives

- Provide opportunity for AB members to meet project teams and become familiarized with Round 2 Research Projects

Meeting Agenda

1:00 **Welcome & Introductions**

12:05 **Project Overview: Baseline assessment of social, economic, and cultural impacts of FOW development on Maine's fishing industry**– *Gulf of Maine Research Institute*

12:15 **Project Overview: Baseline secondary entanglement risk assessment and technology feasibility study –** *University of Maine*

12:25 **Project Overview: Baseline offshore bat monitoring assessment –** *Biodiversity Research Institute*

12:35 **Q&A**

12:50 **Next Steps and Adjourn**

Assessing Social, Cultural, and Economic impacts of Floating Offshore Wind on Maine's Fishing Communities

Baseline Offshore Wind Livelihood Impact Needs Exploration (BOWLINE)

Maine Offshore Wind Research Consortium Advisory Board
October 15, 2025

Gulf of Maine Research Institute

Project Goals

Gulf of Maine Research Institute

Overall Goal:
Baseline assessment of potential social, economic, and cultural impacts of floating offshore wind development on Maine's fishing industry

Economic Assessment

- Scenario-based assessment
- On the water impacts
  - Fishing ground and landed values, incorporating potential changes in fishing behavior
- Shoreside impacts
  - Shoreside infrastructure
  - Employment & wages

Socio-cultural Assessment

- On the water impacts
  - Collection of "stories from the sea"
- Shoreside impacts
  - Comparative case study of select communities, utilizing existing and new interview data and other resources
- Map conversations of OSW impacts

Synthesis: Potential overall impacts and impacted communities

Engagement

- Inclusive and iterative participation from fishing communities
- Knowledge co-production
- Build stakeholder capacity to understand, critique, and apply the assessment results in their decision making

Project Team

Gulf of Maine Research Institute

Economic Assessment

Kanae Tokunaga
Sr. Research Scientist
Coastal and Marine Economics, GMRI

Todd Guilfoos
Associate Professor
Environmental & Natural Resource Economics, URI

Socio-cultural Assessment

Christine Beitl
Associate Professor
Anthropology, UMaine

Engagement

Hannah MacDonald
Sr. Program Manager
Fisheries Engagement, GMRI

Chas Van Damme
Project Manager
Energy Solutions, GMRI

Maine Coast Fishermen's Association
(Advisor)

External Review

PEER Associates (Project Evaluation)

Economic Assessment

Potential on the water impacts

- Spatio-temporal distribution of fishing effort and associated landings values
- Modeling approach developed by Livermore & Guilfoos (2024) - previously applied to estimate OSW impacts on SNE scallop

Potential shoreside impacts

- Local employment and wage multipliers
- Estimation approach previously applied to estimate the impacts of changes commercial fishery harvesting in Alaska and West Coast communities

Impacts that will take place in the future

⇒ Assumptions on what the future will look like

Scenarios to consider

- Fishing behavior
- OSW technology
- Shoreside infrastructure

Socio-cultural Assessment

To build broad community relationships and minimize the risk of survey fatigue, utilize existing archival and research data as much as possible, then interview to fill the gap

On the water impacts

- Stories from the sea to explore community values, history, and identity and to document historical changes
- Explore connections between offshore fishing grounds and onshore communities

Shoreside impacts

- Gather ethnographic data and conduct comparative case study of select communities
- Anticipated positive and negative impacts
- How potential impacts may be distributed within and across communities

Engagement

Gulf of Maine Research Institute

Project Advisory Committee

- Provide feedback to the project team
- Develop fluency with economic and socio-cultural assessment
- Support the team in translating research findings for public dissemination
- Invitation sent to all Industry-representing Research Consortium Advisory Members

Workshops to foster capacity to use study findings

- Workshop # 1 (with PAC, December, date will be announced soon)
  - Build stakeholder understanding of study approaches and assumptions
  - Begin scenario development
- Workshop 2 (late spring ~ summer)
  - Sharing of results
  - Feedback on the findings for final refinement
  - Discussions of assumptions, variables , etc.
  - Recommend next steps

Upcoming: Workshop #1

Gulf of Maine Research Institute

Workshop goals:

- Building stakeholder understanding of socioeconomic impact assessment methods and assumptions.
- Equipping PAC members with the knowledge to explain and critique the assessment throughout the project.
- Presenting initial methodological approaches and inviting feedback to refine and adapt the project's approach.
- Discussion of offshore wind (OSW) development scenarios and how fishery sectors may operate under different scenarios, with explicit explanations of assumptions.

Research-related Engagement Points

Online or Phone Survey

- Elicit fishing preferences and decisions with floating offshore wind
- Build on fishery co-existence study
- Results will help develop scenarios used in the economic assessment

Interviews

- Town managers, fishing industry, community members, labor unions, etc.
- Identify communities first, then reach out to interview participants
  - 5 - 6 communities
  - Communities selected to capture variability

Sharing Information and Updates

- GMRI Website, Offshore Wind Resource Hub, Social Media, and E-newsletter
  - Google Search “gmri offshore wind”
- Appreciate feedback on how we should share study findings

Contact information:

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Thank you!

Quantification of the Risk of Secondary Entanglement due to Derelict Fishing Gear for Floating Offshore Wind Turbines

Research Consortium Kickoff Meeting
10/15/2025

Dr. Spencer Hallowell, University of Maine
Dr. Damian Brady, University of Maine
Everett Rzeszowski, University of Maine

Spencer Hallowell, Ph.D., Senior Engineer
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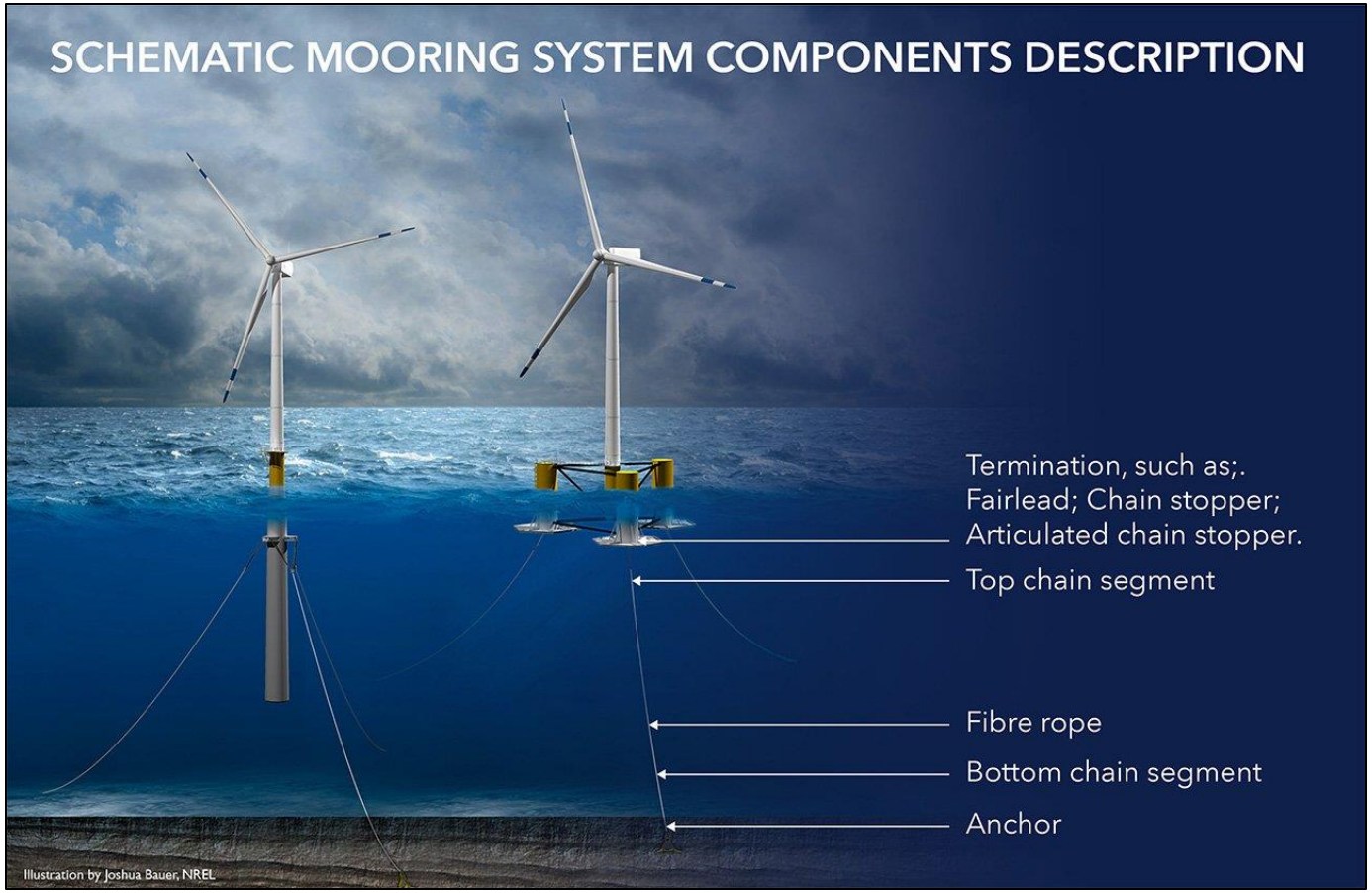
Motivation

- The presence of floating offshore wind technology (FOWT) in the Gulf of Maine introduces the risk of secondary entanglement of sensitive marine mammal populations
- Risk is highly dependent on the movement of Abandoned, Lost, or Discarded Fishing Gear (ALDFG) that is in the resource
- This research looks to quantify such risk, by focusing on the process in which ALDFG **ensnares** on FOWT infrastructure



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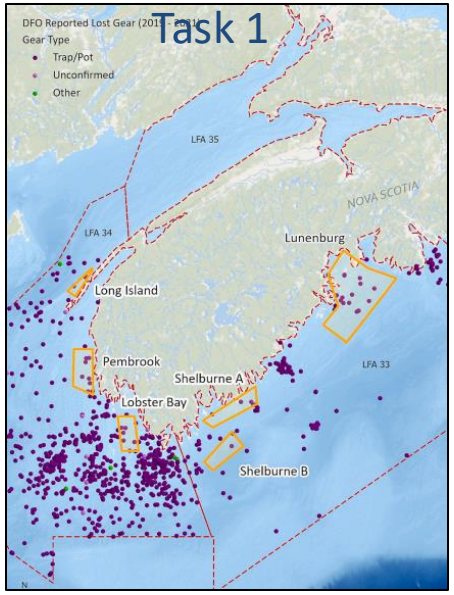
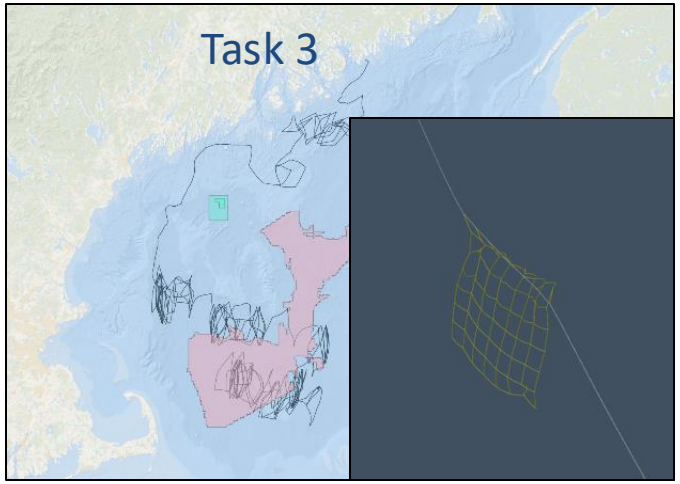
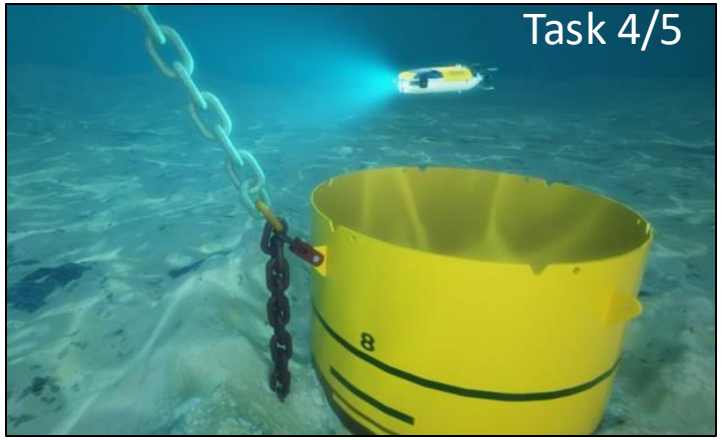
Scope

1. Literature Review, Data Collection, and Data Gaps
2. Stakeholder Engagement
3. Desktop Risk Assessment
4. Monitoring Approaches and Technology
5. Retrieval Approaches and Technology







[1]Gilman, E. (2015). Status of international monitoring and management of abandoned, lost and discarded fishing gear and ghost fishing. *Marine Policy*, *60*, 225-239.

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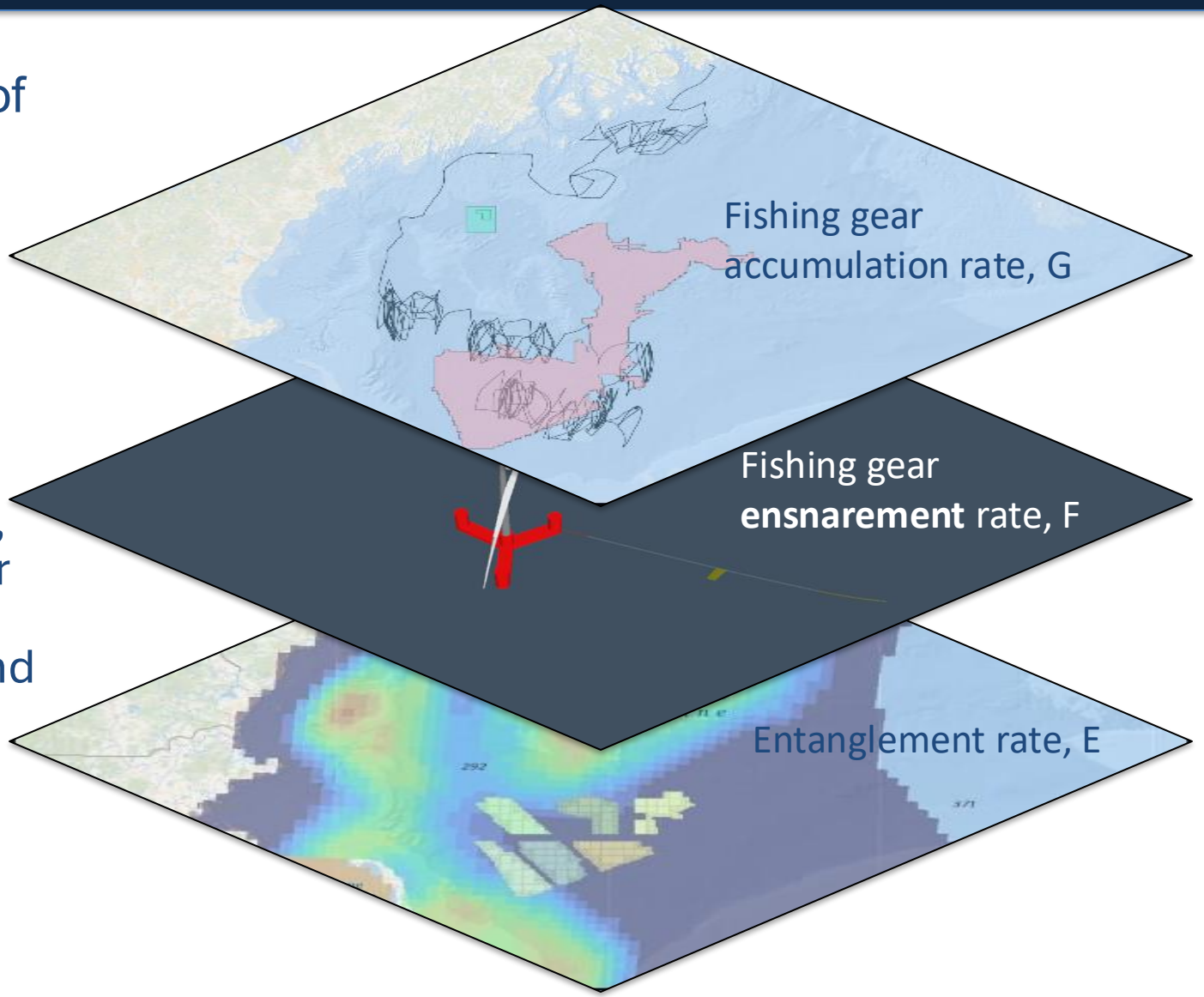
Risk Methodology

- The probability of entanglement follows:

$$P_E = \int EFG$$

- Decouples hazard, demand, and fragility (gear movement, ensnarement, and entanglement)
- Borrowed from seismic and hurricane risk



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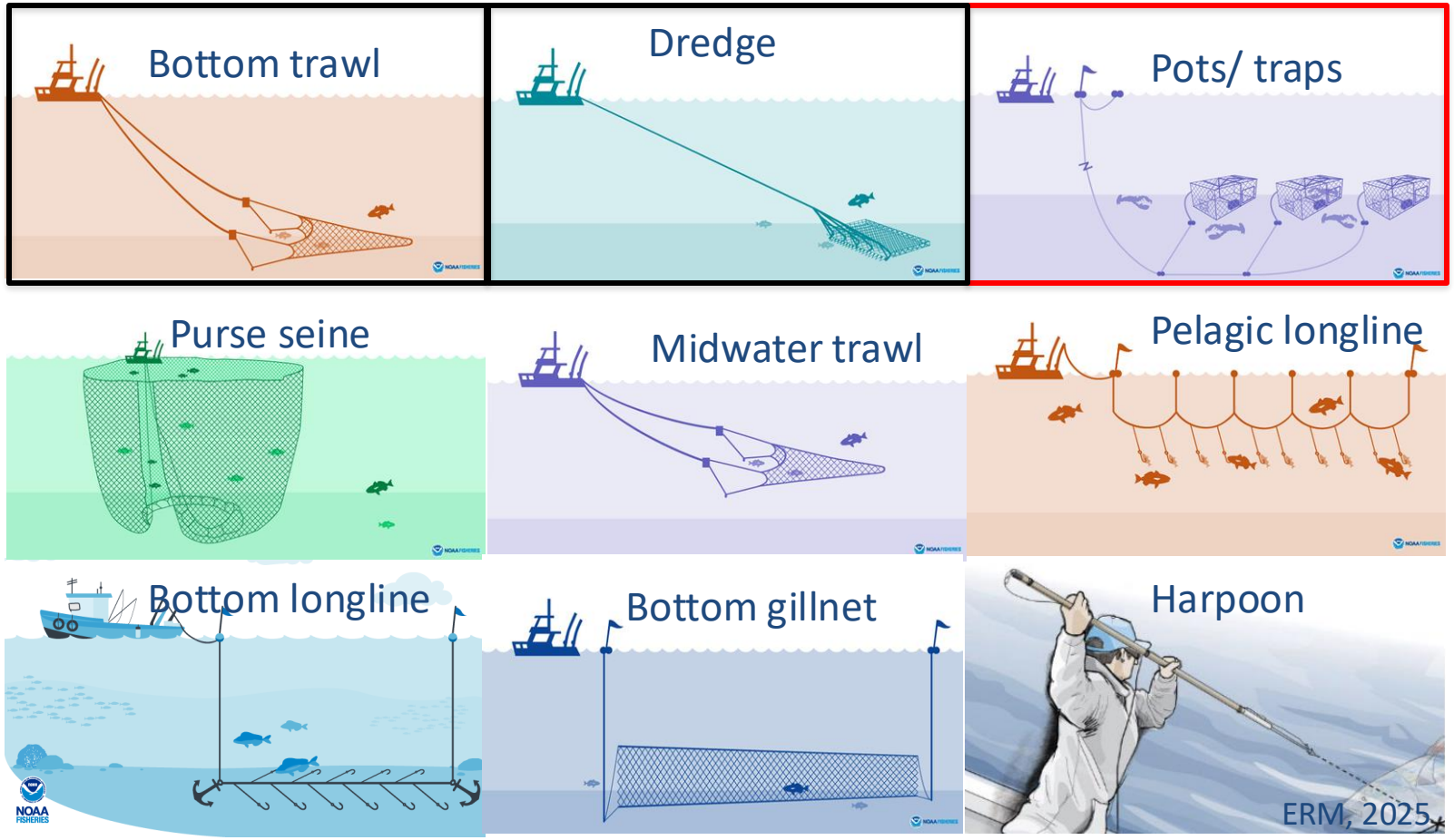
Gulf of Maine Fishing Gear

- Relevant fishing gear types for the Gulf of Maine were identified via Communities-at-sea data (2011-2015), NEFSC fishing footprints (2016-2020) and the ERM-GMRI Fisheries Coexistence Report (2025)
- Images from NOAA Fisheries, and used in marine mammal entanglement identification guides



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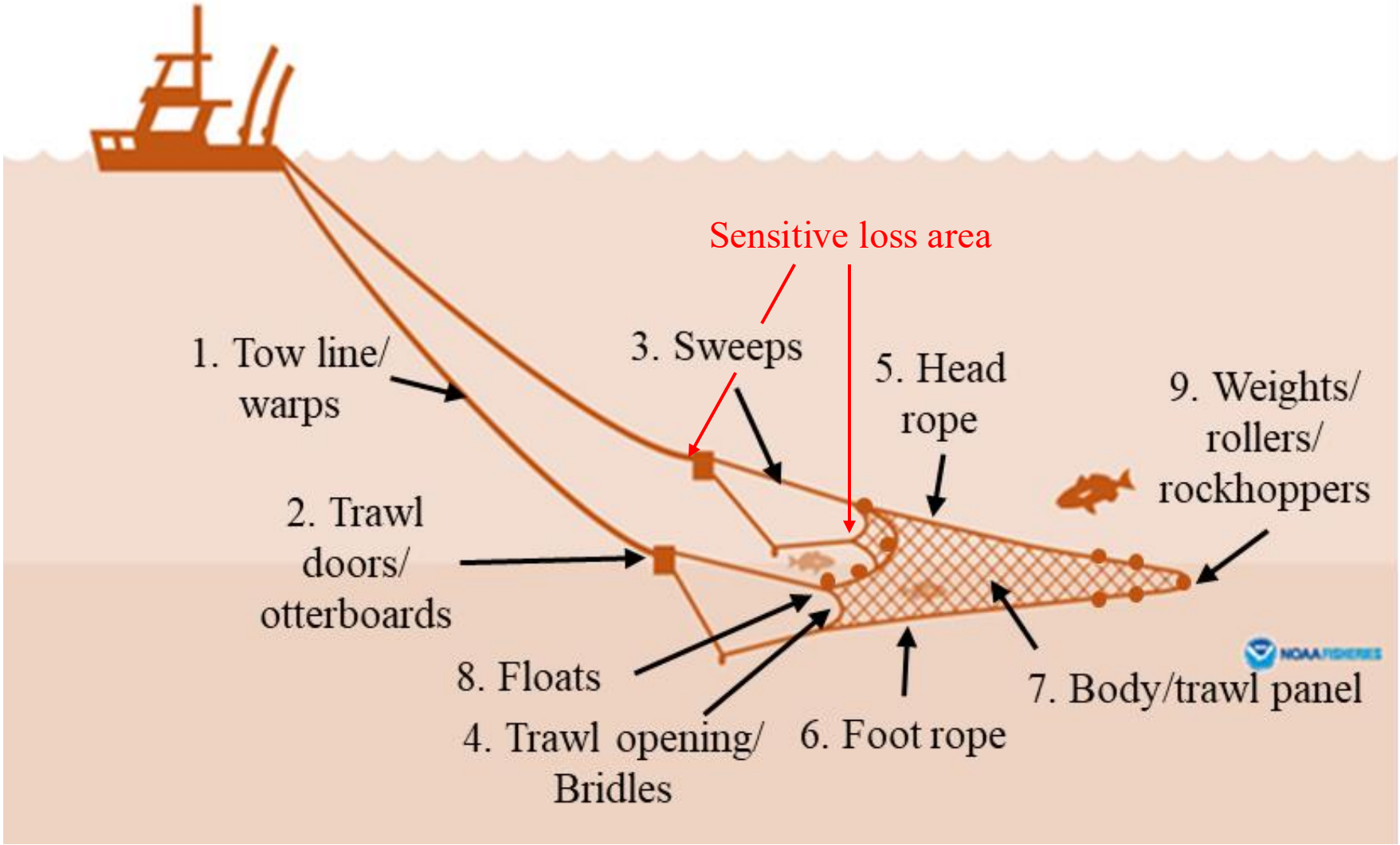
Research, Education, and Economic Development

Gear Breakdown: Bottom Trawl



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Research, Education, and Economic Development

Pot/Trap Gear Construction

Component	Name	Material Construction	Buoyancy	Diameters/ Sizes (in)	Lengths (ft)
1	Buoy	Wood/Foam/Plastic	Positive	5”x11” to 8”x15”	N/A
2	Buoy line/Sink line	Synthetic rope (nylon, poly) , sometimes with steel core	Negative	3/8”-1/2”	Varies by water depth 10’s-100’s of ft
3	Float Line	Synthetic rope	Positive	3/8”-1/2”	Varies 10’s100’s of ft
4	Groundline	Synthetic rope, sometimes with steel core	Negative	11/32”-1/2”	10’s-100’s of ft
5	Gangion	Synthetic rope	Varies	11/32”-1/2”	10’s of ft
6	Becket/Bridal	Synthetic rope	Varies	11/32”-1/2”	10’s of ft
7	Trap/Pot	Coated steel	Negative	48”x21”x13”	N/A

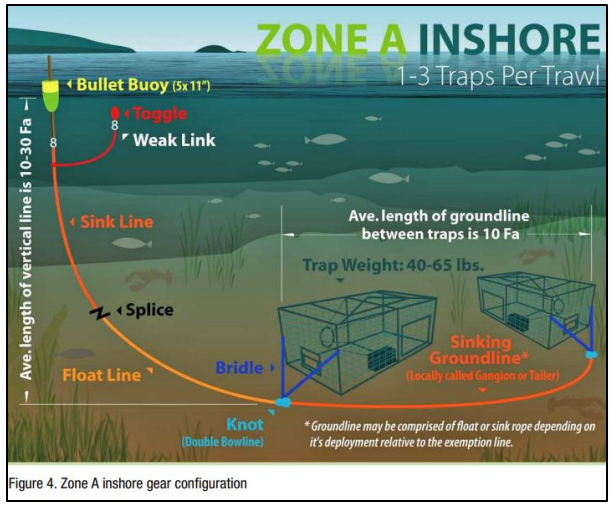

Figure 4. Zone A inshore gear configuration

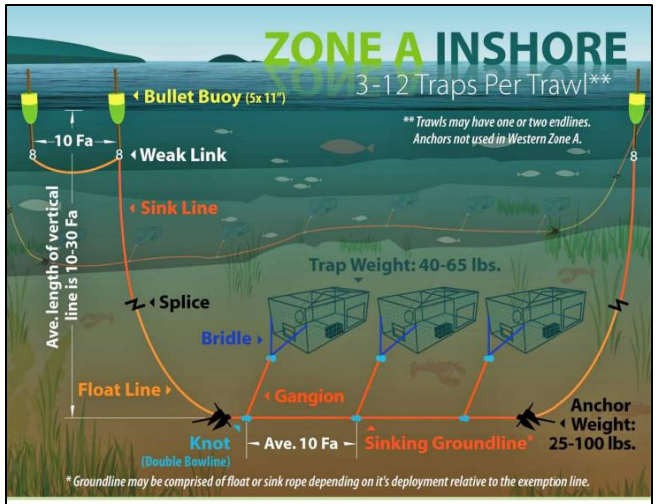

Figure 5. Zone A inshore trawl configuration

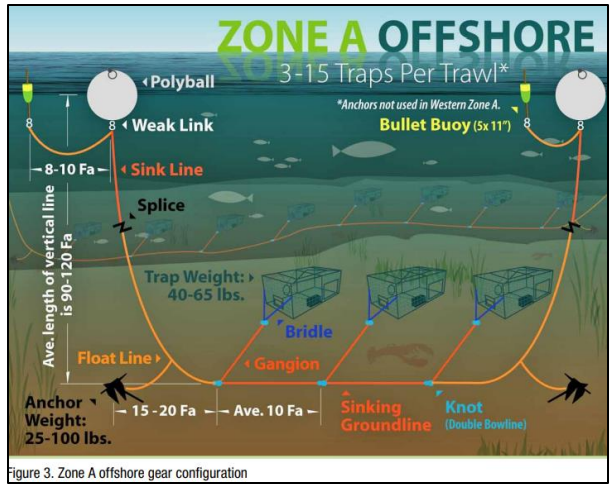

Figure 3. Zone A offshore gear configuration

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Schedule, and Next Steps

PHASE		DETAILS	Year 1 Period of Performance												
			Q3		Q4			Q1			Q2			Q3	
			M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
			8/25	9/25	10/25	11/25	12/25	1/26	2/26	3/26	4/26	5/26	6/26	7/26	8/26
1	**Task 1: Literature Review, Data Collection, and Data Gaps**	Subtask 1.1: Literature review													
		Subtask 1.2: Data compilation and dissemination													
		Milestone 1: Literature review complete				Nov-26									
		Deliverable 1.1: State of the art report				Nov-26									
		Deliverable 1.2: Creation of online data repository				Nov-26									
2	**Task 2: Stakeholder Engagement Plan**	Subtask 2.1: Stakeholder engagement plan													
		Subtask 2.2: Stakeholder engagement meetings for concept overview													
		Subtask 2.3: Stakeholder engagement meetings for gear loss estimation													
		Subtask 2.4: Stakeholder engagement meetings for risk results, monitoring, and gear retrieval													
		Deliverable 2.1: Stakeholder engagement plan				Nov-26									
		Deliverable 2.2: Stakeholder engagement summary report												Jul-31	
3	**Task 3: Desktop Risk Assessment**	Subtask 3.1: Global-scale model of current flow and gear movement													
		Subtask 3.2:Turbine-scale model of gear impacting FOWT moorings													
		Subtask 3.3: Seasonal likelihood of whale species entering WEAs													
		Milestone 3: Desktop risk assessment complete													
		Deliverable 2.1: Secondary entanglement risk quantification report											Jun-26		
		Deliverable 2.2: Secondary risk entanglement toolbox added to Online data repository												Jul-31	
		Deliverable 3.3: Secondary entanglement risk quantification publication.												Jul-31	
4	**Task 4: Monitoring Approaches and Technologies**	Subtask 4.1: Literature review and industry survey for monitoring and detecting derelict gear													
5	**Task 5: Retrieval Approaches and Technologies**	Subtask 5.1: Literature review and industry survey for retrieving derelict gear													
		Deliverable 4.1/5.1: Summary report for monitoring and retrieval approaches and technology.													
		Milestone 4: Monitoring and retrieval approaches complete										May-29			

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Edu *opment*

Questions and Acknowledgements

- Maine Department of Energy Resources
- Maine Offshore Wind Research Consortium
- California Energy Commission and Lawrence Berkeley Labs

- Questions?

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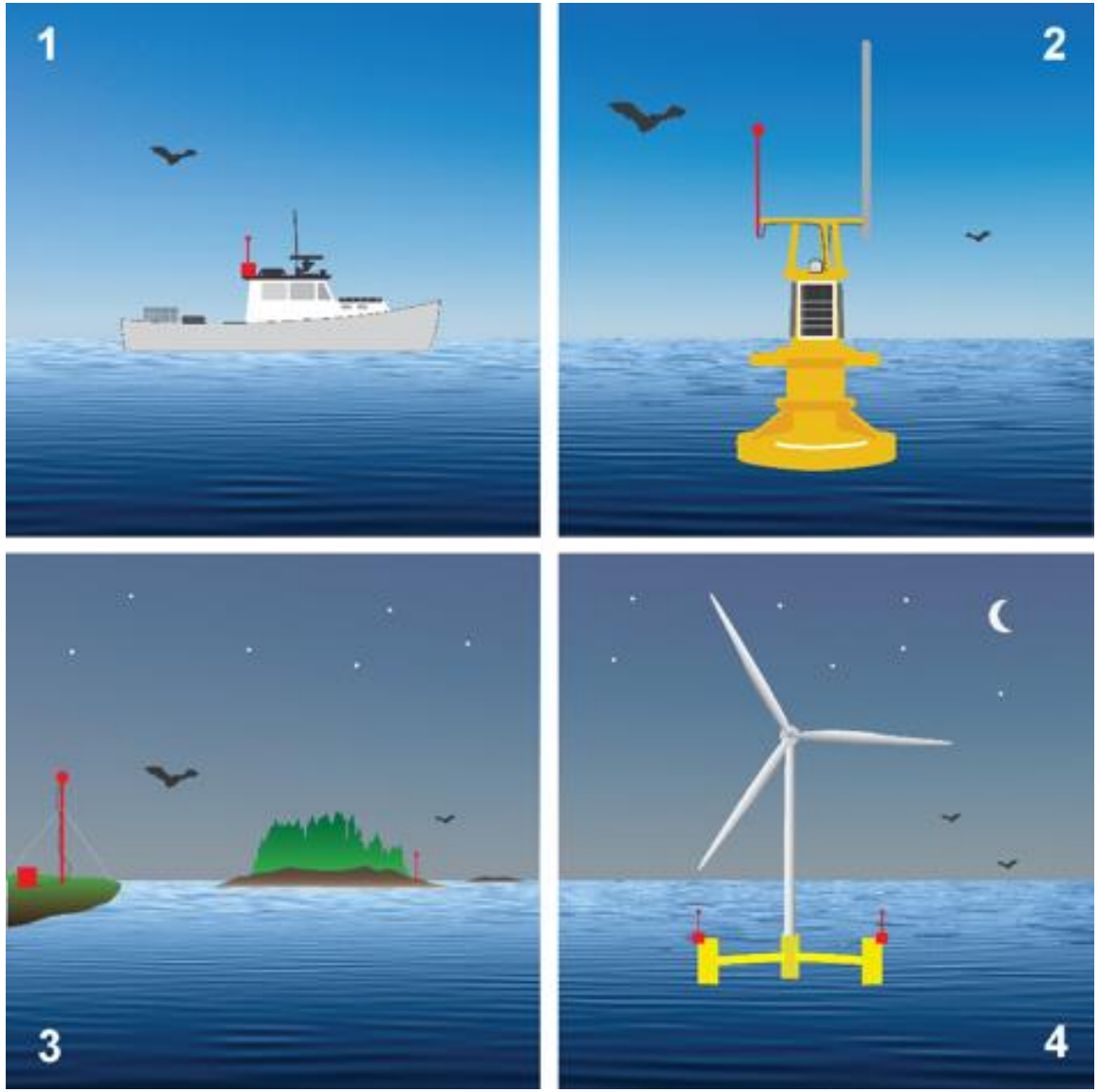
Baseline offshore bat monitoring assessment in the Gulf of Maine

October 15, 2025

WRAIL
Wildlife Remote Acoustics and Imagery Lab

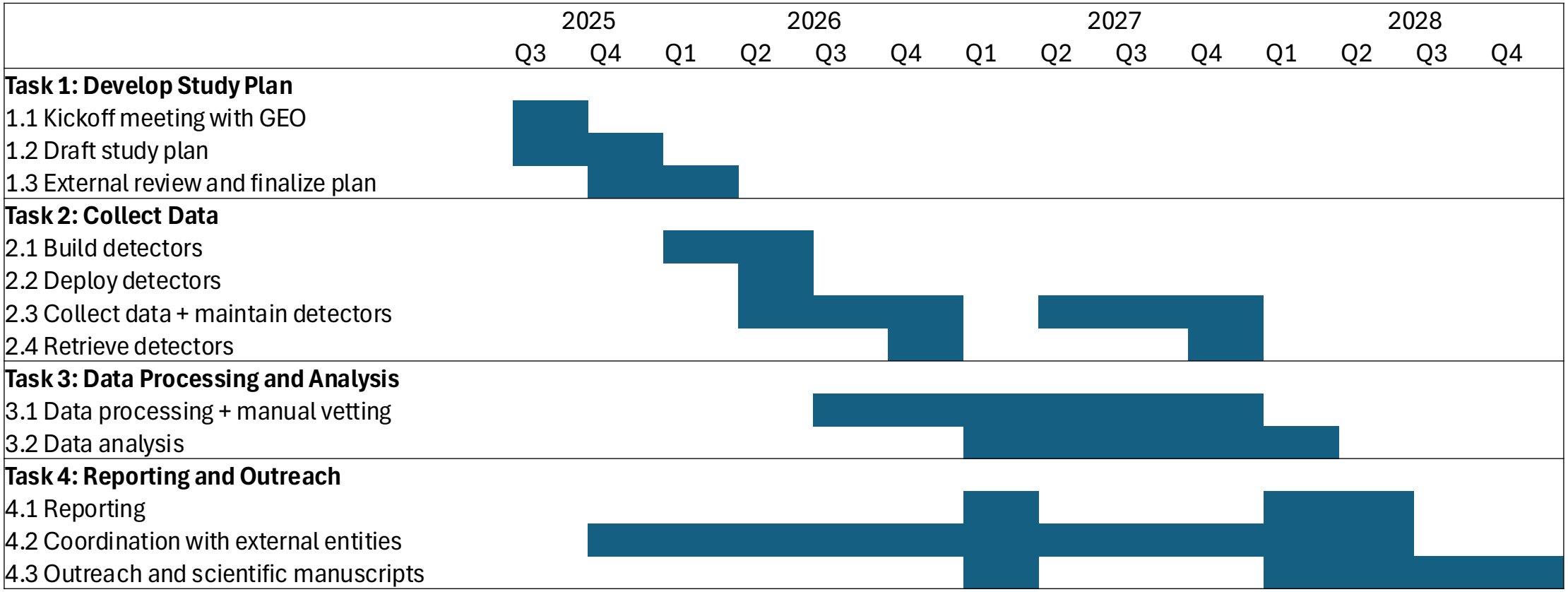
Questions + General Approach

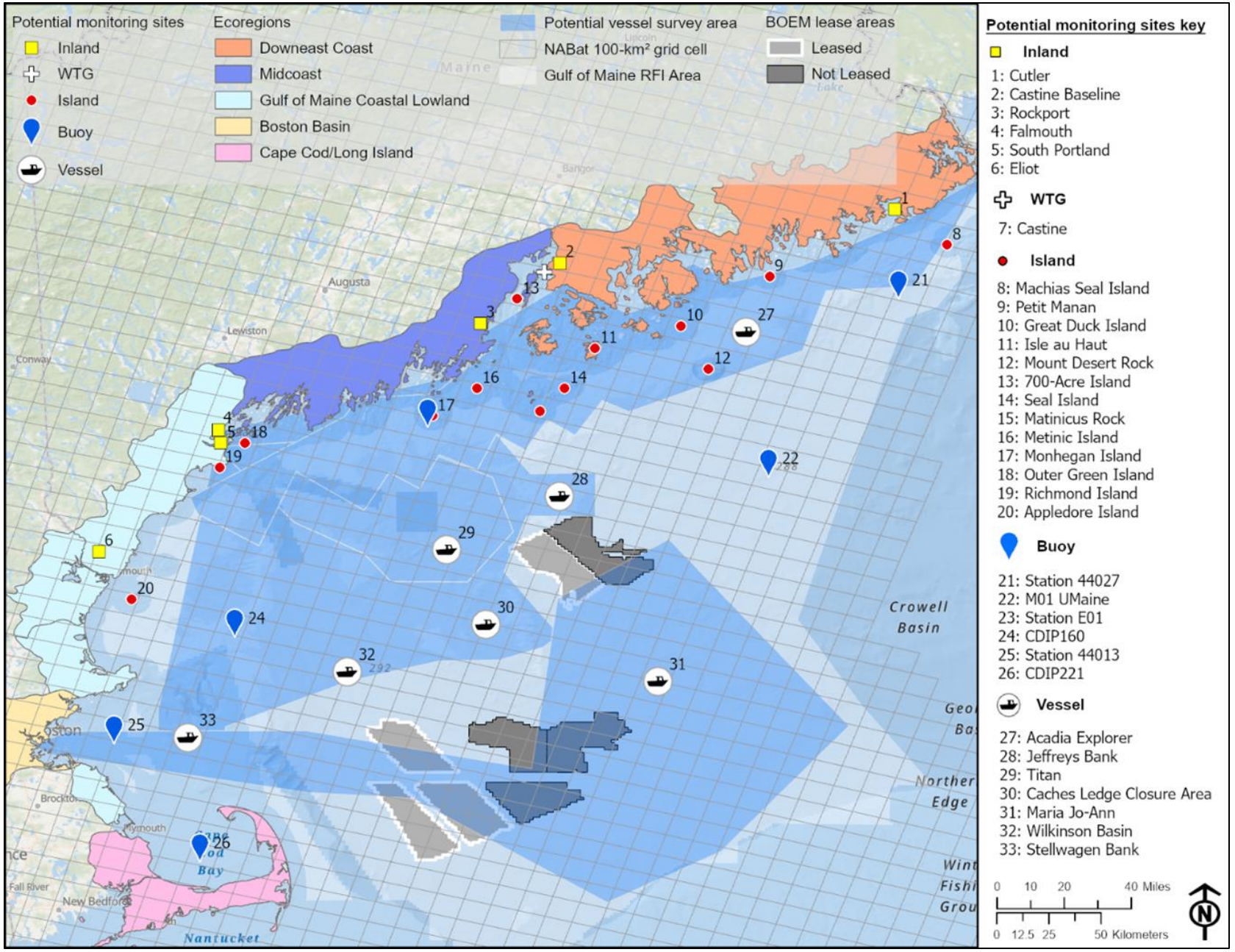
- How does bat occurrence compare between the offshore, island, and coastal sites?
- What is the composition of bat species offshore, and how are such species distributed spatially and temporally across the Gulf of Maine?
- How do weather conditions and other environmental factors influence offshore bat presence?
- How does bat occurrence vary temporally and spatially between a coastal wind turbine site and an inland site?



Project Schedule

- 2 continuous field seasons proposed in 2026 and 2027—mid April through end of October
- Most analyses to be conducted in late 2027 through 2028

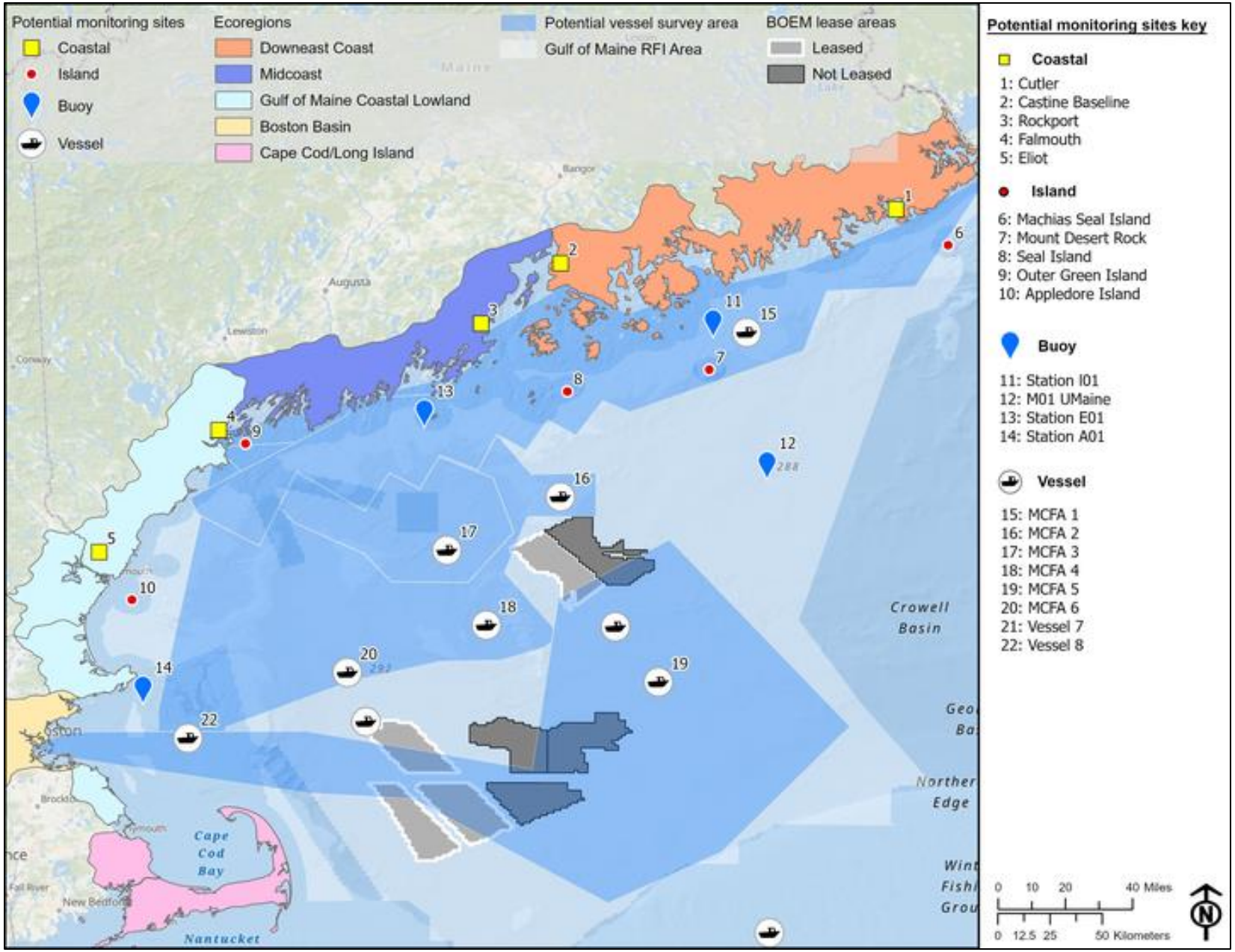




RFA proposed sites

- 33 sites/platforms with access
  - 6 vessels, 6 inland, 6 buoys, 7 islands, 1 WTG
- Paired detectors at coastal, island, buoy and vessel sites/platforms
- Monitoring effort divided between 5 latitudinal groups

Wildlife Acoustics
Song Meter
SM4Bat + U2
Microphone



Updated proposed sites

- 22 sites, 26 detectors
  - 4 buoys, 5 islands, 5 coastal, and 8 vessels loosely grouped latitudinally
- Continue to work with UMaine on collecting bat data at the test turbine
- Changes in federal funding and USFWS support
- Vessel transit costs to islands and buoys
- Greater emphasis on vessels given interest from the fishing community

Buoy Sites

Proposed Approach

- 4 UMaine/NERACOOS buoy detector sites in 2026
- Paired detectors at each buoy for redundancy
- Deploy in late April/early May
- Retrieve in late Oct/early Nov
- No servicing trips

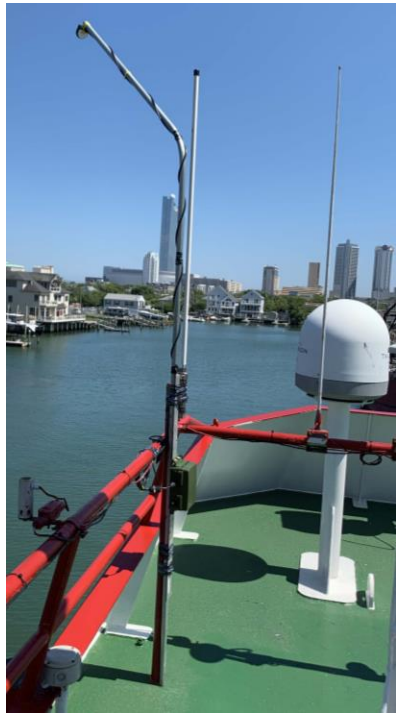
Benefits and Challenges

- Platform for collecting data in different offshore areas
- Not suitable bat habitat, so less bias in the data, but still lit at night
- Field efforts can piggyback on scheduled UMaine vessel trips
- Data not collected until end of field season

Next Steps

- Working with UMaine and BCI to integrate detector equipment with buoy, including solar panel
- Coordinating with NERACOOS on schedules

Vessel Platforms



Proposed Approach

- 8 vessels as detector platforms in 2026, including 6 MCFA vessels, 1 DMR vessel, and 1 opportunistic vessel
- Light/temp sensor
- Deploy in late April/early May, retrieve in late Oct/early Nov
- Data retrieval when boats back in port, ~monthly

Benefits and Challenges

- Engagement with the fishing community is fantastic
- Different offshore coverage areas
- Some noise interference
- Difficult to predict data collection periods at night

Next Steps

- Working with MCFA to confirm fishing vessels
- Connecting with NOAA trawler vessel
- Exploring other research / commercial vessels that transit through GoME

Island and Coastal Sites

Proposed Approach

- 5 island and 5 coastal sites in 2026
- Light/temp sensor
- Deploy in late April/early May, retrieve in late Oct/early Nov
- Data retrieval 1-3x per season

Benefits and Challenges

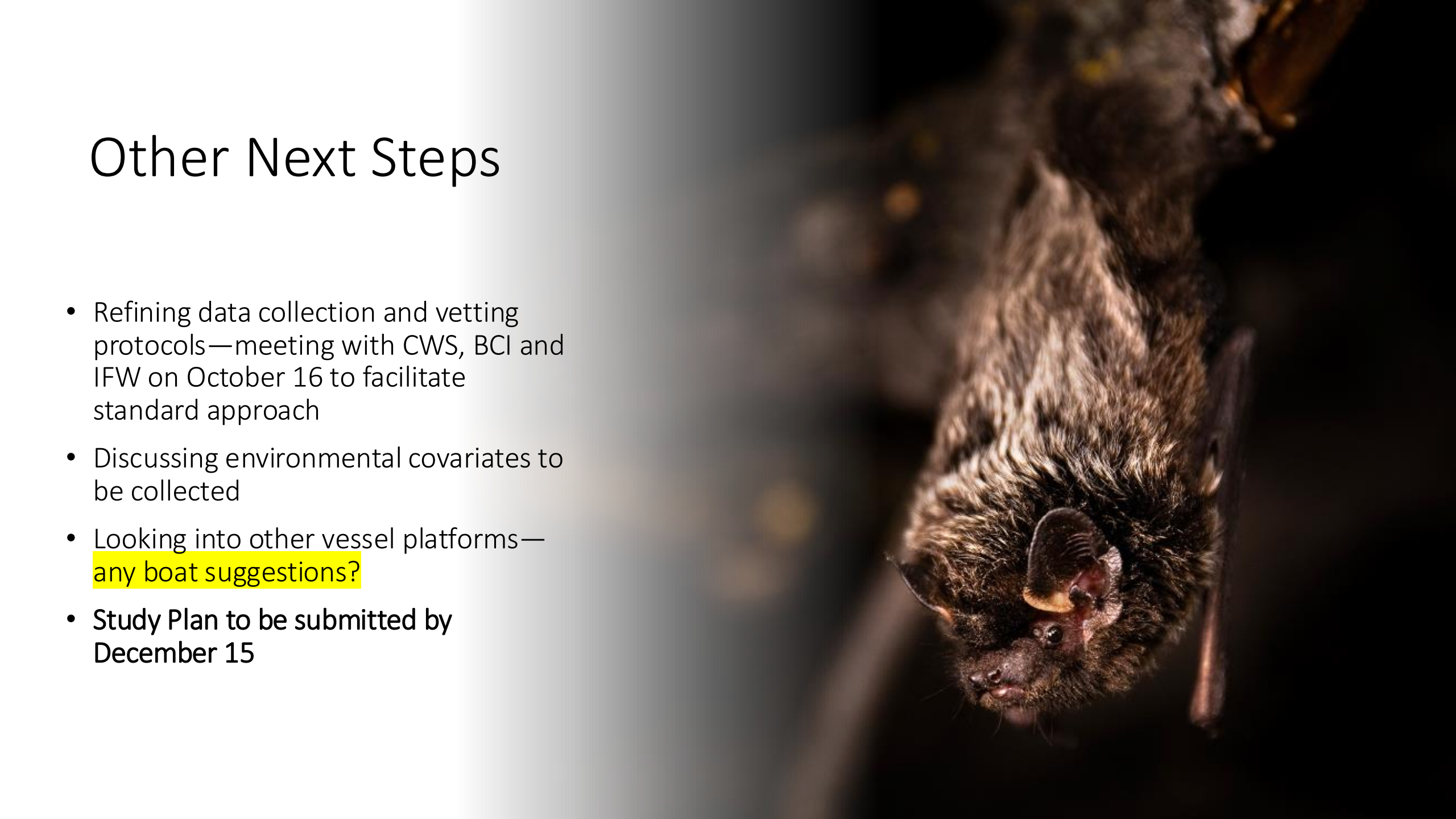
- Low noise environments
- Most hosts/partners can support detector maintenance
- Vessel transport is logistically challenging and costly for island detectors
- Complex, diverse habitats

Next Steps

- Working on Special Use Permit application for NWR sites
- Working on final approval to access Cutler
- Connecting with site hosts about 2026 field schedules

Other Next Steps

- Refining data collection and vetting protocols—meeting with CWS, BCI and IFW on October 16 to facilitate standard approach
- Discussing environmental covariates to be collected
- Looking into other vessel platforms—any boat suggestions?
- **Study Plan to be submitted by December 15**



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https://www.maine.gov/energy/initiatives/offshorewind/researchconsortium