Maine Offshore Wind Research Consortium
Advisory Board
Meeting Summary
Monday, May 6, 2024
9:00AM – 12:00PM EST

Hybrid meeting
In-person: University of Maine, Orono, D.P. Corbett, Room 205

Meeting materials are available here.

Meeting Objectives
On May 6, 2024, the Maine Offshore Wind Research Consortium (the Consortium) Advisory Board (AB) held its seventh meeting in-person at the University of Maine in Orono and online via Zoom. The objectives of this meeting were to:

- Discuss 2024 Research Consortium timeline
- Receive brief updates on Research Consortium activities
- Discuss and initially prioritize research questions (8)

Welcome & Introductions
Opening remarks given by Alison Bates, co-chair of the Research Consortium. Katy Bland, Program Manager (Sea Grant) reviewed the meeting agenda and objectives and gave a brief overview of the meeting guidelines.

A list of AB members participating in the meeting and meeting observers is in Appendix A.

Research Consortium & General Timelines Review
To provide context around other ongoing offshore wind-related projects, Katy shared a slide depicting the multiple timelines guiding initiatives by BOEM, the State of Maine, developers, and the Consortium's previously funded RFPs.

Programmatic & Research Updates
Stephanie Watson, GEO, provided brief BOEM and State-level updates. Stephanie reminded the AB of BOEM's Proposed Sale Notice announcement and their related stakeholder engagement meetings planned for late-May. Comments and feedback regarding the Proposed Sale Notice should be submitted to BOEM by July 1. Stephanie also highlighted a number of updates from the Governor's Energy Office. She reminded the AB of the State's Request for Information (RFI) regarding future offshore wind energy procurement. Comments and feedback should be submitted to GEO by June 21. Stephanie also noted that GEO's *Maine Energy Plan: Pathway to 2040* is in the process of being finalized, and this plan requires a significant increase in renewable energy production. Highlighting other funding opportunities, Stephanie shared that the Clean Energy Partnership program has announced a funding opportunity for workforce development that is due on May 24. Additionally, the DOE has released a Notice of Intent (NOI) to offer a funding opportunity in late spring/early summer on offshore wind research topics of shared interest with the Consortium. She encourages the AB to consider synergies within these proposed projects and our upcoming RFP. Finally, Stephanie announced that the Maine Offshore Wind website has been updated.

Meghan Suslovic, GEO, provided brief updates on the Consortium-funded projects from the

previous RFP. She shared that ERM & GMRI's project on fisheries' coexistence with floating offshore wind is expected to wrap up by December '24 or January '25. The socioeconomic data inventory project performed by Karp Strategies and Colby College will be completed by June '24. Megan also discussed the DMR's benthic mapping project, and Carl Wilson, DMR, provided additional updates, noting that while still in the prepping stage, they are on-target for the original summer start date.

Research Question Discussion and Initial Prioritization

Olivia Burke, Carbon Trust, presented an overview of the research prioritization process envisioned for the Consortium that will lead to a request for proposals (RFP) this summer. Olivia began by reminding the AB of the goals of the Consortium, which are to "create a common understanding of the local and regional impacts (positive and negative) of floating offshore wind in the Gulf of Maine." The Consortium may prioritize, scope, commission, and/or find collaborative partners to implement scientific studies on the **ecological**, **technological, economic,** and **social** impacts to achieve this goal." Specifically, the four research areas discussed during the meeting included co-use and co-existence; impacts on wildlife; socio-economic aspects; and technological considerations. All eight projects were categorized within these research areas, although AB members were encouraged to consider how separate projects may find synergies with other projects.

Olivia provided an overview of the research prioritization process that has taken place this year. The process began in February, when small, informal group working sessions developed project ideas that align with the priority research topics. Olivia and Jan Matthiesen then arranged follow-up discussions with AB members and Collaborators. Discussions from the calls guided the development of more detailed one-pager summaries for potential projects in the areas of highest priority. These one-pagers will be used to prioritize work for the next GEO RFP and/or as a starting point to receive external funding. This provides flexibility to apply for funding or develop projects with external partners throughout the year.

For each of the Research Areas identified, Olivia and Jan shared slides that summarized the preliminary project details and suggested possible research questions. Discussion took place among the AB members about research questions and what types of projects could help answer those questions. AB members also offered background knowledge, related work happening elsewhere, concerns they had about certain potential projects, and suggestions for best practice.

Before reviewing the one-pagers, there was a brief discussion amongst the AB surrounding funding, other RFPs, and synergies amongst projects. There was agreement that coordination around this would be useful. A question was posed about organizing the many ongoing projects relevant to the Consortium and offshore wind development in Maine. Several comments were made about databases that have collected, organized, and hosted this data (see Appendix B for links to databases).

Research Area #1: Evaluating variable access levels of offshore wind energy areas in the Gulf of Maine

Summary of draft project details (see slide #5 or more detail):

- Budget: $300-$400k
- Research Area: Co-use/ co-existence
- Objectives:
    - Employ a closed area model approach to evaluate changes in habitat availability, locally increased biodiversity, displacement, productivity and redistribution of fish

species within chosen sites in the WEAs.
    - Model fishing impacts that can be used when making fisheries management decisions in areas outside of the closures.

Summary of AB discussion:

- Concerns related to the language used in the title and content of the one-pager:
    - Avoid using the term "closed area," as there were no regulatory decisions to impose a legal closure of the area.
    - Suggestion to change the title to "Evaluating variable access levels *to" or "in"*
- Discussion around assumptions about access to fish within or around Wind Energy Areas (WEAs)
    - Despite WEAs being finalized, we are still uncertain about the level of fishing access that will be permitted or possible.
    - Depending on the level of fishing access, it would be useful to attempt to understand the ways in which this would affect fishing. This project could begin by tracking fishermen's movement patterns in effort to learn how those patterns my be disrupted based on the location of the windfarms.
    - Previous groundfish "closed area models" and similar "site-choice models" help try to predict where fishing effort may shift in response to presumed limited access of mobile gears. What's challenging is predicting how the fish will react and if historic catch rates throughout the Gulf of Maine are realistic predictors of future distribution. All of this helps assess impacts to fishery resources and supporting communities.
    - Because fisheries quotas are so dynamic and fisheries management is so slow, however, it may be difficult to predict exactly how these changes would affect fisheries.
- This project could begin to answer questions related to the ecology of species, i.e. 'What species are within lease area?' and 'How will they respond to closures?' There is value in understanding how different species will respond to limited access areas, as there is already some information related to changes in fisheries ecologies based on closures for fisheries management.
- Suggestions to integrate annual and seasonality timing components into the project as fish stocks fluctuate yearly. This would be helpful to think about what would occur, but management decisions are based on what is actually occurring. Management objective is a lower-level priority than tracking ecological changes.
- Overall, the wider group sees the value in this study, although with modifications. Such modifications include changed language around the title and an evaluation for fisheries access to support analysis efforts.

Research Area #2: Assessing and minimizing risks to bat species in the Gulf of Maine in collaboration with the fishing industry

Summary of draft project details (see slide #6 for more detail) :

- Budget: ~$500k
- Research Area: Impact on wildlife
- Objectives:
    - Conduct acoustic data collection and analysis on bat species to further support an ecological/ environmental baseline understanding in the Gulf of Maine.
    - This study focuses on yielding information on baseline bat activity rather than specifically collecting data within a location such as the proposed Wind Energy Area

(WEAs).
    - It is anticipated that the primary data collection activity will be bat acoustic detectors attached to fishing vessels, and other vessels of opportunity. However, there could be an opportunity to utilize the existing buoy networks, island weather stations, and coastal sites.

Summary of AB discussion:

- Discussion around the feasibility of the study and its approach:
    - Suggestion to refine the approach, as it may be difficult to collect robust data without fishing vessels regularly traversing the WEAs.
    - Question about possibly utilizing NOAA's weather buoys and exploring synchronicities with NOAA's drone mapping project.
    - Agreement that the work should be completed in two distinct phases: 1) using acoustics to identify what species are where and when, and 2) Motus and tagging effort.
    - Encouragement for AB to develop a recommendation list for additional monitoring on non-RC-funded research (e.g., recommend that the planned MeRA FLIDAR Buoy consider adding bat acoustic monitoring capability).
- Tricolor bat is known to go offshore in the GoM, increasing urgency for this type of research. Northern long-eared bat is also in the area and, while not expected to go offshore, it is still a possibility.
- Wind power has been identified as one of the greatest threats to migratory bats, pointing to urgency around the study.
- General consensus around the urgency and priority of the project. Continue to consider synergies with other projects to ensure efficient use of Consortium funds.

Research Area #3: Bird tracking study in the Gulf of Maine

Summary of draft project details (see slide #7 for more detail):

- Budget: ~$500k
- Research Area: Impact on wildlife
- Objectives:
    - Conduct data collection and analysis on key bird species to further support an ecological/ environmental baseline in the Gulf of Maine and to support understanding the risk offshore wind poses to bird.
    - Ideally, over a minimum of a two-year period to account for variations in bird movement, data will be collected on prioritized (and identified by the RFP responder) bird species where there are data gaps.
    - Proposals may leverage existing assets or deployment of new technology within the total maximum budget. Projects should coordinate surveys that cover multiple lease areas.

Summary of AB discussion:

- Discussion on the technological capabilities to track different bird species:
    - Motus works well for small songbirds. Other birds would require individual GPS phase work.
    - Question about the feasibility of deploying bird and bat sensors at the same time. Response that bird acoustics and sounds interference issues can be tricky to address.
    - Separate projects can be tied together only if the technology fits.

    - Tracking offers different kinds of data that would be useful.
    - NREL has a buoy under development to do offshore radar work. It could be an effective way to get a clear view of nocturnal migrating birds. Possible future opportunity.
- Having a survey effort in the lease area will be a developer responsibility.
- There is value to tagging birds independently of OSW developers because once developers start their work, their layouts are already planned. Having migration height and vector data earlier could perhaps inform array layouts etc.
- There is a lot of existing work already taking place, so we want the research communities to tell us where the data gaps are. In the proposal, they should address why this is the data gap that needs to be addressed.
- The design layout and location has not been set, so there is an urgency to collect more data that could potentially influence the planning phase.

Research Area #4: Modelling assessment of potential spatial and temporal changes to groundfish with the WEAs in the Gulf of Maine

Summary of draft project details (see slide #8 for more detail):

- Budget: $200k
- Research Area: Impact on wildlife
- Objectives:
    - This study will model the impact on groundfish in the WEAs exploring temporal and spatial trends. If necessary, it will provide a gap analysis and synthesis of what data is available to help prioritize where future primary data collection is needed on groundfish within the WEAs.

Summary of AB discussion:

- Discussion was minimal due to time limitations.
- There are potential synchronicities with the first draft project related to closed areas, and we will pick up the discussion separately as there may be opportunities to combine.

Research Area #5: Socioeconomic Impact Assessment of Floating Offshore Wind Development

Summary of draft project details (see slide #9 for more detail):

- Budget: ~$200k (Phase 1 only)
- Research Area: Socio-economic
- Objectives:
    - Phase 1
        - Define and identify the communities that will be most likely to be significantly affected (positively or negatively) by offshore wind development (based on the WEAs). This could include impact in Fishing, from electrical infrastructure and construction activities.
        - Assess how impacted communities may change over time (e.g. by the phase of development
    - Phase 2
        - Develop a common framework to assess the socio-economic impact of offshore wind on affected communities.

Summary of AB Discussion:

- Discussion around uncertainty of scale:
    - Although we know the potential lease areas, we don't know where the construction activity will actually come from. We need more information to move forward as a full-sized project.
- Phase 2 methodology may provide the opportunity to assess transmission impacts.
- NOAA has guidance on how to do a socioeconomic impact assessment for fisheries. We are lacking data resources that help us understand what shoreside communities look like. That is potentially a small piece that could get funded that would then feed into a more robust socioeconomic impact assessment.
    - This could present an opportunity to learn from the work that others are performing, including NOAA and BOEM. Such work could contribute to filling gaps in our understanding, but will require further discussion around timing and which agency is most suited to performing the work.

Research Area #6: Understanding the risk and remote detection of secondary entanglement

Summary of draft project details (see slide #10 for more detail):

- Budget: $400k (+ in-kind contribution of the use of the UMaine test tank)
- Research Area: Technology
- Objectives:
    - Investigate the potential impact and likelihood of secondary entanglement in floating offshore wind moorings and cable systems.
    - Understand the extent of fishing gear accumulation on the floating wind structures and leverage existing data, such as from the Gulf of Mexico
    - Identify technologies that can minimize the risk of secondary entanglement and determine the most effective methods for automated detection.
    - Test and validate relevant technologies.

Summary of AB discussion:

- Discussion around other entities performing similar work:
    - MassCEC is contemplating funding a company that is seeking to install helical anchors for floating offshore wind. Our hope is that these anchors may allow for straight, vertical anchor lines beneath a floating turbine--as opposed to longer, reverse-j-shaped catenary anchor lines--thereby perhaps allowing more subsurface access of fishing gear adjacent to floating turbines. NMFS and BOEM are also considering "tertiary entanglement" where gear already entangling a whale becomes snagged on the OSW infrastructure. It would be helpful to include this as a consideration.
    - NOWRDC funded a project carried out by UMaine that evaluated this same anchor technology for taut moorings, in comparison to traditional drag embedment anchors + chain in a catenary configuration. The design envelope is still open, but it would be good to understand how these design choices may or may not affect the secondary entanglement risk.
- Suggestions to build best practices into this study (i.e. what to do if gear is entangled in turbine).
    - Important to highlight removal and retrieval from the ocean.
- Part of this is frequency of monitoring of mooring and anchoring systems. Recognizing the level of risk from other examples around the globe (i.e., how frequently we see secondary

entanglement) would be helpful for understanding risk towards right whales, debris entanglement, and gear entanglement.
- Question about how to monitor these in the water. Response that there's a significant amount of technology available for monitoring underwater activities and gear.
- Information gathered for and from this study could inform lease stipulations.
- This study should not only focus on whales, but other commercially valuable species such as gillnet species. Marine mammals, sea turtles, endangered species are of most concern, specifically because of regulations.
- Looking at the different mooring types would be beneficial to quantify and understand better which design is best to avoid secondary entanglement.
- General consensus is that this is a very important topic that could use collaboration with the many entities engaged in this work.

Research Area #7: Industrialization of the floating supply chain in Maine

Summary of draft project details (see slide #11 for more detail) :

- Budget: ~$250k?
- Research Area: Technology
- Objectives: Explore innovative technology solutions for infrastructure development, industrialization, and cost reduction. Provide a comprehensive understanding of how to advance the floating supply chain industry in Maine through technology development, while maximizing economic benefits and minimizing costs. The study will analyze market potential, regulatory factors, and technological readiness. This research is crucial for identifying opportunities for growth and efficiency within the floating supply chain industry in Maine, and for developing strategies to leverage technological advancements to drive sustainable economic development.

Summary of AB discussion:

- Discussion about the benefits and challenges of economic growth in the State
    - Comment that this is an opportunity to create significant jobs and infrastructures in Maine. Maine is a unique ecosystem and economic system. This research topic is specifically named in legislation.
    - Comment about other aspects that will require investment if we want to bring more people into the state (e.g., housing shortages)
        - Suggestion to build some kind of partnership with the region to share learnings. State of Maine might be able to gain insight from Nova Scotia's quickly advancing OSW development.
        - Assessing these risks now can help inform the RFP, the State developers, and early-action developers to develop partnerships and investments that feed their bids and long-term plans.
    - This study could be inclusive of vessel design and development (i.e., crew transfer vessels or concrete structure and engineering)
    - MA, ME, CT, RI are all part of supply chain partnership. Objective is to work together to advance the supply chain for the region. Want to reduce costs, emissions from the industry, avoid importing and towing things from far away. All of these pieces are important, and this is a good mechanism to coordinate this kind of work.
    - Suggestion to frame how this project could inform Maine's future offshore wind energy RFP.

Research Area #8: Feasibility study on mussels farming in an offshore wind farm

Summary of draft project details (see slide # for more detail):

- Budget: $200k
- Research Area: Technology / co-use
- Objectives:
    - Explore the synergies between mussel farming and floating offshore wind development through a comprehensive feasibility study.
    - Analyse the operational and infrastructure requirements of each industry to develop conceptual designs that optimize spatial efficiency and operational synergy while mitigating potential conflicts.
    - Define the operational protocols and maintenance procedures necessary for the co-existence of mussel farming and offshore wind infrastructure to ensure long-term sustainability and success.

Summary of AB discussion:

- Discussion around coordination and collaboration efforts:
    - Other firms are looking for onshore support for offshore aquaculture. Why are other forms of aquaculture not considered? Can we broaden outside of mussels?
    - Question about talking to NOAA, BOEM, or other regulatory entities about this. How would this be received if it is funded?
        - NOAA has a policy on offshore aquaculture. Consider this in terms of secondary entanglement for whales. Comment that NOAA would likely be opposed to this study, with a response that NOAA is also an advocate for the advancement of offshore aquaculture.
        - NCCOS has developed aquaculture opportunity areas in the Gulf of Mexico and California, but deliberately avoided GoM because of the sensitivity of the topic in Maine. The Army Corps and DEP have regulatory power over aquaculture. We need to iron out regulations before moving forward.
    - There's currently an open funding opportunity to do this work. The funding opportunity has called out the GoM to look at all possibilities: biological, infrastructure, shore side. Before this opportunity, there was an RFI that established serious hurdles.
    - Northeast Sea Grant Consortium funded a project on this topic a few years ago. Could be useful to refer to that study.
    - Question about the biological feasibility of this study.
- Overall suggestions to broaden the scope of the project, consider other funding opportunities, determine feasibility, and identify regulatory aspects. This project will likely take lower priority.

ADVISORY BOARD & COLLABORATOR UPDATES

The Advisory Board did not have time to go through the "Updates" slides. Katy referred participants to see the slides after the meeting for Advisory Board and Collaborator updates (slide numbers 24-32).

NEXT STEPS

- Based on feedback and comments, Olivia and Jan will revise 1-pagers to be shared with the AB.
- AB meeting to be scheduled in the near future to further discuss prioritization of projects.

Steering committee to meet after.

- If requested by the Advisory Board, the Steering Committee and Program Management team can explore mechanisms for putting aside discretionary funds for leveraging opportunities that match the AB priorities. The Program Management team can then identify key leveraging opportunities to support these important projects.

APPENDIX A – ATTENDANCE

Advisory Board Members

Terry Alexander, F/V Jocka, Co-Chair
Alison Bates, Colby College, Co-Chair
David Cowan, Diamond Offshore Wind*
Jack Cunningham, Maine Lobstering Union Local 207
Wing Goodale, Biodiversity Research Institute
Sarah Haggerty, Maine Audubon
Bob Humphrey, Sport-Ventures*
Ben Martens, Maine Coast Fishermen's Association*
Laura Morse, Invenergy*
Walt Musial, NREL*
John Perry, Department of Inland Fisheries and Wildlife
Jocelyn Runnebaum, The Nature Conservancy Maine
Daniel Salerno, Fisheries Scientist, Limington, Maine
Graham Sherwood, GMRI
Mary Beth Tooley, O'Hara Corp.
Anthony Viselli, University of Maine
Stephanie Watson, Governor's Energy Office
Carl Wilson, Department of Marine Resources
Gayle Zydlewski, Maine Sea Grant

Collaborators

Morgan Brunbauer, NYSERDA*
Todd Callaghan, MA Coastal Program*
Sindey Chaky, BOEM*
Doug Christel, NOAA*
Lisa Engler, MA Coastal Program*
Fiona Hogan, RODA*
Zach Jylkka, BOEM*
Julian Fraize, NOWRDC
Jake Kritzer, NERACOOS*
Hannah MacDonald, GMRI*
Cheri Patterson, New Hampshire Fish and Game Department*
Tricia Perez, ROSA*

Program Management, Advisors, and State Agency Staff

Beth Bisson, Maine Sea Grant
Katy Bland, Maine Sea Grant
Olivia Burke, Carbon Trust
Julia Hiltonsmith, Maine Sea Grant
Jessica Jansujwicz, Maine Sea Grant
Jan Matthiesen, Carbon Trust
Caitlin Shanahan, NERACOOS*
Laura Taylor Singer, SAMBAS Consulting LLC
Meghan Suslovic, ME GEO
Casey Yanos, ME DMR

Maine's Congressional Delegation, State Representatives

Christina Breen, U.S. Senator King*

Adam Lachman, U.S. Senator King*

*Denotes online attendance
No Tribal Representatives were present.
Additional observers attended in person and online.

APPENDIX B – ZOOM CHAT SUMMARY

Comments from AB members and collaborators are included in the project discussion summaries.

Links shared:

Zach Jylkka, BOEM
Re: Proposed Sale Notice Meetings
https://www.boem.gov/renewable-energy/state-activities/gulf-maine-proposed-sale-notice-psn-public-meetings

Laura Morse, Invenergy
"BOEM has also released the modernization rule for offshore wind regulations. Fact sheet here:"
https://www.boem.gov/sites/default/files/documents/renewable-energy/Renewable%20Energy%20Modernization%20Rule.pdf

Laura Singer, SAMBAS Consulting
"ME RFI:"
https://www.maine.gov/energy/initiatives/offshorewind/solicitation

Laura Singer, SAMBAS Consulting
"ME Energy Pathway 2040:"
https://www.maine.gov/energy/studies-reports-working-groups/current-studies-working-groups/energyplan2040

Christian Laspada, RWSC
"The RWSC Bird and Bat Subcommittee is working on draft guidance for bat acoustics deployment. The subcommittee meets monthly. The current draft guidance can be found here and is under review:"
https://rwscorg.sharepoint.com/:w:/s/BirdandBatSubcommittee/EXuQrEpCkoxLs8SGVKu0VKMBjlw0dSCTG2SpKfZNvyMUeA?e=Ttd0v7

Doug Christel, NOAA GARFO
"NMFS just posted updated offshore wind socioeconomic impact reports on our website. They include more detailed analysis of port impacts."
https://www.fisheries.noaa.gov/resource/data/socioeconomic-impacts-atlantic-offshore-wind-development?utm_medium=email&utm_source=govdelivery