

Environment and Wildlife Working Group

Draft Initial Recommendations – January 2022

Overview

The following ideas have emerged from the discussions to date of the Environment and Wildlife Working Group. The recommendations below represent a set of immediate needs to address critical data gaps and mapping of critical areas to inform siting of offshore wind in the Gulf of Maine (GOM). We are also recommending the State take action to investigate regulatory options under the federal consistency provisions of the Maine Coastal Program (CZMA, Recommendation 5). The Working Group will be developing further recommendations that cover additional topics in the coming months, including pre- and post-construction monitoring, transmission cable and landing considerations, and mechanisms to avoid, minimize and mitigate potential impacts.

It is important to recognize the unique opportunity Maine has to lead in developing well-sited and operated floating offshore wind development with the least impact to wildlife and the environment. This is only possible if the State vehemently pursues gathering the critical data needs now to better inform the decision-making process. Data collection should begin as soon as possible to advise environmentally sound siting, and to create a baseline for evaluating effects of offshore wind through time, which will ultimately put Maine in the best position to lead the nation in low-impact floating offshore wind development.

Finally, we are aware of the ongoing concerns of Maine’s commercial fishing industry which are being addressed by the Fisheries Working Group. In some cases, the data and mapping needs for both Working Groups overlap which further emphasizes the critical gaps that need to be addressed immediately. Where they do not overlap, recommendations specific to each Working Group will need to be considered in the context of the environmental, economic, and social-cultural significance of the Gulf of Maine as a whole.

Acknowledging Climate Change

Based on the most recent models, climate change is predicted to cause ecological shifts in the Gulf of Maine. The historical and current data used to evaluate both appropriate locations for offshore wind development and potential impacts should be considered within this context and should consider potential regime shifts. Robust modeling within a range of possible futures can be used to guide the future of offshore wind development as long as these are done with clear definitions of uncertainty or confidence on which to base recommendations and decisions.

Initial Recommendations for Immediate Consideration

Recommendation #1 - Map existing data ³⁵: *We recommend the State of Maine conduct a mapping exercise in early 2022 that collates existing data available in the Gulf of Maine to identify where areas of greatest conflict between offshore wind energy development and wildlife may currently exist in Gulf of Maine federal waters and identify data gaps that need to be filled to inform offshore wind leasing.*

This exercise should include the following process:

1. Aggregate relevant data layers from the Northeast Ocean Data Portal for the Gulf of Maine into an interactive product to identify existing data gaps.
2. Identify and map areas of high use by the fishing industry through the process outlined by the Fisheries Working Group.
3. Hold a series of workshops comprised of Gulf of Maine science experts and commercial fishermen, including Environment and Wildlife and Fisheries Working Group members, to jointly inform the mapping process and identify any information that may have not been identified but is readily available and accessible.
4. Maintain an iterative mapping process to integrate new data and stakeholder information as it becomes available.

Rationale

The Bureau of Ocean Energy Management (BOEM) has announced its intention to plan for leasing of commercial scale offshore wind in the Gulf of Maine by mid-2025. This will require the identification of wind energy areas (WEAs) by BOEM in consultation with the Gulf of Maine Intergovernmental Task Force. Maine's representatives on the Task Force need to be prepared to fully engage in these conversations and represent the interests of Maine's citizens in the appropriate siting of wind energy lease areas. An immediate first step for Maine is to seek data and input from scientists, commercial fishermen, and other stakeholders with expertise in wildlife, fisheries, and the offshore environment to compile and map the areas of known concentration of priority species, habitats, and commercial fishing activity. This mapping exercise and subsequent engagement process with stakeholders would be of great benefit to the State of Maine and the BOEM process overall by identifying and prioritizing high conflict areas early on, as well as identifying gaps in the current data for future research opportunities.

Action Items

The working group envisions the mapping exercise could be supported through the following:

³⁵ It is important to note that while summarizing the existing data is very valuable, data for the Gulf of Maine is currently extremely limited. Projections of areas with fewer conflicts and assessments of impacts to a given species are less certain than those for elsewhere (e.g., south of Cape Cod). See Recommendations #2-#4.

- Collate and analyze existing data from publicly available datasets for seabirds, marine mammals, turtles, pelagic and benthic fish, and invertebrate species.
- Conduct an interdisciplinary desktop analysis with oceanographers, benthic habitat experts, marine mammal experts, marine fish experts, and marine bird and bat experts.
- Use fisheries data to identify areas of high marine productivity and potential marine bird and mammal foraging areas.
- Conduct a literature review to identify the key criteria that drive primary productivity which contribute to areas of high biodiversity of fishes, invertebrates, marine mammals, and seabirds in the GOM.

The following critical areas for wildlife and fishes should be mapped as part the GOM mapping exercise:

1. Important foraging habitat areas for marine birds, throughout the annual cycle, that have greater vulnerability to collision and displacement from offshore wind development, and for Species of Greatest Conservation Need (SGCN).

Data available to map these areas:

- Physical and biological oceanographic data, including but not limited to bathymetry, sea-surface temperature, primary productivity (chlorophyll) and secondary productivity (zooplankton), ocean currents, frontal features, and upwelling indices.
- Most of these data are already available and organized at various spatial scales and resolutions.
- Tracking data already available: tern nanotag data, Common Tern satellite tagging data, Arctic Tern and Common Tern GPS tagging data, Leach’s Storm-Petrel GPS data, Herring Gull GPS data, Great Shearwater sat tags, Atlantic Puffin GPS tagging, RAZO satellite tagging, Northern Saw-Whet owl nannotagging.

Uncertainty/data need:

- On a GOM scale, environmental data are available at larger spatial scales, which are not always at appropriate resolution for project scale analyses.
- Substantial uncertainty and variability between species and between years in foraging habitat. However, there are basic constraints on foraging depth for benthic feeding birds (e.g., sea ducks) that could be used to identify likely foraging areas, and surface and midwater features for pelagic birds that could be used to identify key habitat.
- Some species, such as terns, can forage close to colonies if food is available, but can also commute longer distances. Other species, such as storm petrels, can

conduct multi-day foraging flights that can take them to the continental shelf edge and beyond.

- Lacking tracking data on migratory seabirds and waterfowl.
2. Areas between coastal islands where migratory pathways for bird and bat species vulnerable to collision and displacement often occur.

Data available to map these areas:

- Motus tracking efforts, GPS and Argos tracking efforts, geographic features, radar data, and island banding data.
- Passerine banding data from islands available
- 10 years of Northern Saw-whet Owl old banding data on Petit Manan Point - research conducted by Dave Brinker

Uncertainty/data need:

- Migratory movement patterns for most species are uncertain.
- Must identify how migrants are using airspace farther offshore, especially in and around the array.

3. Areas used by species under both the Endangered Species Act (ESA) and Maine Endangered Species Act (MESA), including Roseate Tern, North Atlantic right whale, leatherback sea turtle migratory routes and foraging areas, and migratory paths of Red Knot, Piping Plover, Atlantic Salmon, and Atlantic and shortnose sturgeons.

Data available to map these areas:

- Colonial nesting data: tracking studies conducted in Massachusetts and New York (while these studies do not cover the GOM, they can support understanding of term movement in general) and some data from Maine
- MDIFW/USFWS mid-winter waterfowl aerial survey data
- Gull and cormorant data aerial surveys completed in 2019 and colony based info (1960-2021)
- Results from some limited tracking studies on North Atlantic right whales and leatherback sea turtles are available.
- Passive acoustic detections of North Atlantic right whales.
- Aerial survey data for North Atlantic right whales, humpback whales, and leatherback sea turtles, as well as some opportunistic sightings from ships.

Uncertainty/data need (not inclusive):

- High uncertainty on Roseate Tern movement and habitat in GOM.
- Little (some shorebird survey data from seabird restoration islands) to no data available on the Red Knot and Piping Plover movements during migration.

- While much data exists on shorebird migration along the immediate coast of Maine, little to no movement data is available in the GOM waters. Extrapolation of the little existing data (two Semipalmated nanotag efforts; one in Downeast and one in southern ME/MA) and what is generally known about shorebird migration in the GOM would need to be applied.
 - Changes in habitat use in the Gulf of Maine by right whales since 2010.
 - Limited data on leatherback sea turtles.
 - Limited data on GOM use by Atlantic and Shortnose Sturgeon. Some modeling data available for Atlantic Salmon migratory corridors in the GOM. Additional tagging and tracking would be needed to better characterize GOM use of all three endangered fish species.
 - Some limited data (e.g. Stantec) on migratory bats in the GOM (nanotag tracking of bat migration from a PhD project).
4. Areas with deep-sea corals.
- Data available to map these areas:*
- Identified in the New England Fisheries Management Council Coral Omnibus Amendment.
- Uncertainty/data need:*
- As not all deep-sea corals have been accurately mapped, additional benthic habitat mapping is necessary.
5. Areas of known spawning and feeding aggregations of high priority managed and other protected species (e.g., groundfish, lobster, herring, scallop, marine mammals, etc.) in coordination with the Fisheries Working Group. Several species of marine birds are dependent on these areas.
- Data available to map these areas:*
- Trawl and longline surveys
 - Tagging
 - Herring fleet sampling
 - Scallop surveys
 - Sea sampling and ventless trap surveys, lobster tagging
 - Halibut tagging work
- Uncertainty/data need:*
- Many datasets are limited spatially
 - Herring data is fishery dependent
 - Trawl and longline survey data are limited spatially in the federal survey
6. Areas of aggregation and/or diapausing late stage Calanus copepods as an indicator of highly productive areas of importance to other species of fish and marine mammals

Data available to map these areas:

- Zooplankton monitoring stations
- CPR and ECOMON data
- Physical and biological oceanographic as listed above in #1

Recommendation #2 – Collect Gulf of Maine habitat data: We recommend the State of Maine lead the effort to conduct benthic habitat surveys in areas of the Gulf of Maine with no or poor bathymetry data or benthic habitat information, specifically through the collection of high resolution multibeam mapping and ground truthing of the data through sediment sampling and benthic fauna characterization. This information should be used to create detailed sediment and habitat maps of the Gulf of Maine.

Rationale

The Gulf of Maine has limited bathymetric data of complex habitats which drives species habitat use and distribution. Complex habitats are important for a number of species in the Gulf of Maine and are critically important for vulnerable species such as Atlantic cod and American lobster. This information will provide the most comprehensive, multi-species information and is critical to informing offshore wind siting considerations at both the lease level and the project level.

The National Oceanic and Atmospheric Administration (NOAA) Office of Coast Survey has recently updated a bathymetry model that can be used to show areas with no/poor quality data. This could be used to prioritize areas that need collection. Up to now, the data has been collected by NOAA, the Maine Department of Marine resources (DMR) through commercial fishermen, or through the DMR-Maine Coastal Program (MCP). This effort should be expanded through coordination with all relevant state and federal partners. Finally, we recognize that to map the entire Gulf of Maine is a daunting effort; therefore, the State should collaborate with scientists, commercial fishermen, and other partners to identify critical areas in the GOM most at-risk Action Item #1).

Action Items

The working group envisions this could include the following:

- Establish a Gulf of Maine marine mapping initiative with NOAA, DMR-MCP, NH, MA and other academic and non-profit partners and commercial fishermen to prioritize mapping areas, explore potential funding needs and sources, and determine how best to coordinate mapping products for the GOM. Funding could include:
 - Pursue federal funding to support regional mapping efforts and sediment core sampling
 - Seek State funding to increase State of Maine mapping efforts

- Request NOAA mapping efforts in identified areas within the GOM

Recommendation #3 – Collect Gulf of Maine baseline information: Initiate a coordinated below and above water ecological baseline monitoring study in identified areas of the Gulf of Maine. In order to provide a baseline for meaningful assessment of the impacts of offshore wind development on the ecosystem, wildlife, and fishes of the Gulf of Maine, monitoring should be initiated at the earliest possible opportunity. These surveys should focus as best as possible on potential wind energy development areas (as/when they are made available) and surrounding waters to refine the mapping exercise described above.

Rationale

Baseline information is needed on the distribution and abundance of bird, bat, marine mammal, turtle, and fish species to assist in the siting and environmental review of areas in the Gulf of Maine for potential offshore wind development. Despite previous efforts in the Gulf of Maine (e.g., Atlantic Marine Assessment Program for Protected Species [AMAPPS]) baseline ecological data of wildlife species in the Gulf of Maine remains limited. Given the variability in marine wildlife distributions, a comprehensive regional baseline survey similar to those conducted in the South Atlantic ([South Atlantic Baseline](#)) and Gulf of Mexico Mid-Atlantic ([GoMMAPS](#)) that is focused on the Gulf of Maine area is a critical immediate need to inform BOEM’s planning process, National Environmental Policy Act (NEPA) analysis (including Gulf of Maine and regional cumulative effects), regional-specific environmental assessments, and future review of applications for permits and necessary ESA consultations.

Action Items

The working group envisions this could include the following:

- Continue to prioritize provision of General Fund support for at least the current amount of \$2 million for monitoring and research in the Gulf of Maine in anticipation of offshore wind development for the foreseeable future, and to seek additional State resources and funding opportunities.
- Research nocturnal use of offshore airspace by songbird and shorebird migrants potentially through the use of nanotag technology and expanded Motus network, ideally with birds trapped, tagged, and released from a coastal island site(s) in GoM.
- Pursue partnerships with New Hampshire and Massachusetts to increase the available pool of funding for monitoring and research needs.
- Aggressively pursue funding from federal agencies such as BOEM and NOAA
- Develop a below water/above water integrated survey design to determine the exposure risk of organisms to offshore wind development and ensure that the designation of wind energy areas and the subsequent EIS processes have sufficient data

to make sound siting decisions that avoid or minimize impacts. This may include the following potential methods:

- Broad scale digital aerial surveys with higher intensity in the Research Array and other areas where offshore wind development is most likely to occur.
- Boat-based wildlife surveys
- Broad scale plankton monitoring and surveys
- Broad scale trawl survey in coordination with NOAA/NMFS and designed cooperatively with the fishing industry. ESA-listed species should be the focus of the survey efforts, followed by SGCN and managed species.
- Passive acoustic monitoring of marine mammals
- Acoustic telemetry for endangered fish species
- Document the underwater soundscape in areas where offshore wind development is most likely to occur
- Collaborate with current regional surveys in the GOM focused on oceanography and nutrient availability, plankton diversity and abundance, benthic fish and invertebrate species at both adult and juvenile stages, marine mammals, and marine birds to increase sampling and potentially align the spatial and temporal scales.
- Active acoustic surveys for pelagic communities (to identify potential feeding hotspots and important trophic interactions; biological surveys using active acoustics can also provide information on bottom habitat).

Recommendation #4 - Conduct tracking studies on ESA-listed birds in the Gulf of Maine, as well as marine and non-marine birds, marine mammals, and fish species especially vulnerable to impacts from offshore wind energy development.

Rationale

Due to their inherently low or declining populations, ESA-listed birds and other species may be especially at risk from offshore wind development in the GOM from the possibility of collision, displacement, and changes in habitat conditions. While costly, tracking studies via GPS, radiotelemetry, or similar technique are a proven monitoring methodology to accurately and specifically determine movements, migration timing and specific flight paths, feeding and loafing habitat areas of priority, and other life history activities (e.g. reproduction) for Endangered, Threatened, and SGCN species. Very limited tracking data exists for certain species (e.g. peregrine falcons) and is completely absent for most species.

Action Items

Potential actions could include the following:

- Support coastal/offshore Motus network for radiotelemetry of birds and bats and significant tagging effort, with focus on ESA and SGCN species.
- Conduct GPS tracking of Red Knots.
- Conduct tracking studies on marine birds known to be vulnerable to offshore wind to identify important foraging and migration areas.
- Conduct tracking studies on non-marine birds likely to migrate offshore (e.g., songbirds, shorebirds, falcons).
- Use radar systems to support understanding of timing and intensity of bird and bat migrations.
- Conduct bat acoustics studies offshore and, if feasible, tracking studies using the Motus network. Stantec has bat acoustic data from offshore islands
- Explore and fund the expansion of the Motus network on remote coastal islands, and explore the feasibility of offshore Motus towers on buoys.
- Support tagging efforts for benthic and pelagic fishes, including those species that are ESA-listed and/or considered vulnerable to offshore wind, including EMF (e.g. sharks, salmon, eels).
- Increase marine mammal surveys to pair visual sightings from boat and aerial efforts with passive acoustic monitoring results.
- Use the whale catalog to understand areas of high use by known individuals.

Recommendation #5 – Explore use of federal consistency: We recommend the State of Maine investigate the potential benefits of and process by which the State of Maine may use its federal consistency review authority under the federal Coastal Zone Management Act to address issues of concern regarding offshore wind energy development in federal waters, including potential changes to state laws and rules.

Rationale

The federal consistency provisions of the CZMA may offer an opportunity for Maine to have influence over how offshore wind is developed if applicable regulations are incorporated as part of Maine’s enforceable policies. Rhode Island has been able to use its enforceable policies under the federal consistency review provisions to influence the process and request specific monitoring requirements for activities in federal waters affecting Rhode Island’s coastal zone. Although the Rhode Island example is unique due to their Special Area Management Plan (SAMP) process, Maine should explore the possibility of federal consistency as a tool. The process for updating Maine’s enforceable policies under CZMA is lengthy and complex, so an initial evaluation and plan should be initiated immediately to determine if and how this tool could be used to benefit Maine’s interests.

Action Items

The working group envisions this could include the following:

- Maintain dialogue with neighboring states along the Atlantic coast regarding their efforts to review and implement the use of federal consistency provisions to influence offshore wind development in federal waters.
- Support efforts of the interagency staff tasked with reviewing whether changes are needed to Maine's regulations to effectively review offshore wind development under LD 1619.
- Consider what implications Maine's current State authorities have for review of the cable route, and explore if regulatory changes are necessary.
- Provide updates to the Environment and Wildlife Working Group on progress and recommended actions the State could take.

Items for Future Working Group Discussions:

- Transmission cable route and landing considerations
- Development of best management practices:
 - Pre- and post-construction monitoring
 - Potential mitigation requirements
- Procurement requirements and other ways to influence development (e.g. policy and regulatory changes)
- Research consortium research ideas