Floating Offshore Wind Research Array
Summary of Wildlife Work Session #1
March 5, 2021

OVERVIEW

The Governor's Energy Office (GEO), in partnership with Maine Department of Inland Fisheries and Wildlife (MDIFW) and Department of Marine Resources (DMR), is holding a series of work sessions to inform the State's plans for an offshore wind research array and encourage engagement in the stakeholder process to inform the research lease application to the Bureau of Ocean Energy Management (BOEM). The first wildlife work session focused on understanding what data is currently available to determine which species are present in the research area of interest, focusing on those populations most vulnerable, and generating ideas for additional data sets that may be useful to consider to inform siting. The work session was open to all interested parties.

This summary focuses on the main points covered during the work session. The agenda, presentation slides and recording of the work session are available online:
https://www.maine.gov/energy/initiatives/offshorewind/researcharray/worksessions

ATTENDANCE

The work session was attended by approximately 85 people including many with expertise in wildlife data such as representatives from state and federal agencies, non-profit environmental organizations, academic researchers, the commercial and recreational fishing industry, and consultants, along with interested citizens. Please note that participating in these sessions does not constitute approval nor endorsement of OSW development in the GOM generally or the Research Array in particular.

DISCUSSION

Below is a summary of the key themes and topics discussed during the work session.

Common Themes

Quality/Quantity of Data

The lack of data within the Gulf of Maine at a fine scale makes it difficult to draw specific conclusions, especially for rare species. However, the absence of data does not mean the species are not present.

Use of Covariate Data

Given that we may not have the wildlife-specific data at the fine scale necessary to help with siting within the area of interest, it could be useful to have more of a focus on using available habitat and ecosystem data to try to assess where important habitat use areas may be located. Environmental covariate data such as bathymetry, bottom type, sea surface temperatures would be useful to explore. For example, locations with consistent sea surface temperature fronts may get higher use from many seabird species.

Birds and Bats

Potential Additional Data Sources

- Local surveys are site specific but may be useful to consider

- - Coastal waterfowl surveys (ended in 1998?)
  - Acoustic bat surveys (2009-2014)
- Tracking data
  - GPS and satellite tracking studies not available on MoveBank
  - USFWS has data they can contribute (Satellite tag tracking, Nanotagging)
- Behavioral vulnerability data
  - Mohegan Radar Study (2010); Specific marine radar unit placed far off shore
- Population vulnerability data
  - State conservation status
- Coastal concentration areas
  - USFWS data on colonial breeding sites, migratory staging, winter surveys
- A-Maps Survey (mid 2000s)
- Power et al. seabird (and marine mammal) atlas (Manomet) from the 1980s for the GOM and mid-Atlantic region has good annual and seasonal coverage for area of concern from the 1980s.
- NEXRAD data from the Gray weather station may be something to learn from

Siting Considerations

- MDAT models are the best data available, but they are models. Prelim results from MDAT, you see it is relatively consistent for the Gulf.
- Focus in on environmental co-variants to identify lower-conflict areas.
  - For highly mobile creatures, need clear oceanographic feature to drive them. Merging together bird observation data with environmental predication data (bathymetry, distance from shore) would be useful by relating the birds to these driving factors.
  - Sea surface temperature fronts can be important predictors for some seabird distributions, so looking at areas with consistent fronts over time (which requires some integration and additional analysis of remote sensing data) may be helpful. Though that may be larger scale than would be helpful for siting within the 'blob'.
- When the data sets are brought into MDAT, all the bird species are weighed the same. Analysis is needed weigh species differently for those species that are most vulnerable.
- Areas to the south of the Gulf of Maine have benefited from substantial large surveys (e.g. MA, NJ, NY, Mid-Atlantic, South Atlantic bight). This data is not yet available for the GOM. BOEM has identified this area as necessary for larger scale surveys.
- In general, the further off land is better, but "how far" is difficult to refine.

Potential Impacts/Future Monitoring

- Need to consider onshore bat studies as tree-clearing for transmission may have an impact on bat populations
- Local knowledge
  - Capturing data from people spending time in this area
  - Fishing community, whale watching and birding trips
  - For bats, mounting acoustic detectors on vessels or weather buoys could be important

Marine Mammals and Other Species

Potential Additional Data Sources

- Map of sighting from NARW database:
  file:///home/peter/Downloads/GOM_Whale_Sightings.html

- Robots4whales.whoi.edu and WHALEMAP (DFO/Dalhousie) shows real time acoustic data

- Seasonal leatherbacks this far north (July – maybe October). May be changing in climate change. Also loggerheads as well, but smaller, so harder to see. AMAPPS looking to do distribution modeling with sea turtles.
  https://seaturtlesightings.org/ has opportunistic sightings

Siting Considerations

- Lack of data density makes it hard to make certain conclusions especially for rare species

- It appears with existing data with all its limitations there are:
  - An abundance of all whales, but particularly NARW on and near Jeffrey's Ledge (stay away)
  - There are more common whales throughout the whole potential designated area
  - Data as it is suggests primarily staying away from the southwest corner of the area
  - "Blob" is a busy area for humpback whales

- Look at covariates with other species, like prey, but don't have a lot of this information; know they feed from the bottom up the water column

- We don't have a very dense data set for whale densities, is that because of low effort or just because they aren't there?

Potential Impacts

- Vessel strikes during construction and operations (thus transit routes as important as the array location)

- Displacement from feeding grounds, access to copepods in the area, etc.

- Direct and Indirect entanglement –
  (fishing or other gear entangled on whale gets entangled on cable)

  - Literature seems to support that a primary issue with entanglement is from ghost fishing lines being snagged on anchoring systems, thus they act as a secondary impact.
  - Ongoing BOEM study specific to floating technology, including cables, derelict gear, etc.:
    http://www.boem.gov/pr-19-ent
  - Animated simulation of humpback whales encountering floating wind mooring lines:
    https://www.boem.gov/about-boem/humpback-whales-and-floating-offshore-wind-farms

- Low frequency sound -

  - BOEM – Block Island Wind Farm noise studies -
    https://espis.boem.gov/final%20reports/BOEM_2019-029.pdf
    https://espis.boem.gov/final%20reports/BOEM_2019-028.pdf

- o Operational wind farm noise levels: Thomsen, F., Lüdemann, K., Kafemann, R. and Piper, W. (2006). Effects of offshore wind farm noise on marine mammals and fish, biola, Hamburg, Germany on behalf of COWRIE Ltd.
  - o Japan has done some monitoring regarding whales at their two different floating pilots 2013 – 2019

Potential Research Questions

- Direct/Indirect entanglement –
  - o Can whales identify and avoid anchor cables? Whales are adverse to the color red, could this be used?
  - o What are the impacts should they hit, scrape or otherwise physically encounter a cable?
  - o What other adverse interactions are possible?
  - o How will gear already entangled on whales interact with the cables?

  - o Is there a way to monitor when a marine mammal does get entangled?
  - o Will the farm impact feeding patterns of whales?
    - ▪ What will be the secondary impacts to the animals these whales feed on?

- Low frequency sound -
  - o What are the acoustic effects of operations on sound in the water and potential impacts to whales and to prey?

- Technology –
  - o Can the technology be deployed in different ways within the array (different anchoring systems or cabling technologies for instance) to learn more than only one approach?