

WEST COAST RENEWABLE ENERGY SCIENCE EXCHANGE

Q&A Summary for May 13, 2020 Webinar

Understanding Potential Effects of West Coast Offshore Renewable Energy Development on Marine Mammals

Dr. Desray Reeb, Marine Biologist, Bureau of Ocean Energy Management, Pacific Office

Q: Can someone post the website where the pdf will be posted for easy referral? Thank you!

A: The presentation slides will be posted to the Science Exchange webpage at:
www.boem.gov/west-coast-renewable-energy-science-exchange — *Cathie Dunkel (Environmental Studies Coordinator, Bureau of Ocean Energy Management, Pacific Office)*

A: You can access these spatial data on the CA Offshore Wind Gateway on Data Basin!
Link: <https://caoffshorewind.databasin.org/> — *Webinar Participant*

Q: Have you thought about whether the floating turbines will act as FADs for fish and therefore affect whale distribution?

A: Yes, my colleague, Donna Schroeder is a marine ecologist who is looking into the potential impacts that could be caused by wind turbine bases acting as fish aggregating devices. Data from existing fixed foundation offshore wind turbines in Europe have shown to create habitat for fish and invertebrates, but there is currently no data that suggests any effects on cetacean (whale, dolphin and porpoise) distribution or feeding.

Q: You mentioned a study was to be undertaken from Eureka to San Francisco. Given that the area to the north of Eureka to the Oregon border is a premier site for potential wind power generation could the study be extended to the Oregon border?

A: Due to restricted funding, the study area is designed around the BOEM Humboldt Call Area and surrounding Northern California (CA) waters. That said, the first year of the study will establish contacts with fishermen and other platforms of opportunity to assist with deploying the acoustic recorders; and if there is potential to expand the study area to the Oregon border, we will consider that. Our longer-term goal is to expand this study along the entire CA coast and, if we can find funding partners in other states along the U.S. West Coast, potentially expand the duration and geographical reach of this study. — *Desray Reeb*

Q: What is the link for that video? It is great!

A: <https://tethys.pnnl.gov/publications/humpback-whales-floating-offshore-wind-farm-animation>
— *Webinar Participant*

A: The whale animation can be found at:
<https://www.boem.gov/about-boem/humpback-whales-and-floating-offshore-wind-farms>
— *Cathie Dunkel*

Q: For the humpback example, if they rarely dive deeper than 120 m, why not propose that the electrical cables sit at 150 m? That would seem like an easy mitigation that would reduce interaction between humpbacks and electrical cables. Presumably there are other types of low-cost mitigation like this?

A: Thank you for this great question. We used the humpback whale in the video animation since it is the most likely species to overlap with offshore floating wind on the U.S. West Coast. With that said, there are other species, for example blue and fin whales, that possibly dive deeper than humpback whales. Also, we need to consider that this is a technical issue where we would need to work with developers to understand their technical needs and balance them with potential mitigations. The entanglement simulation study I mentioned during this presentation will attempt to identify potential mitigations to reduce entanglement risk and we will hopefully be able to use these to inform our discussions with developers. — *Desray Reeb*

Q: Have you considered the potential for fishing gear becoming tangled in the cables? This could exacerbate whale entanglements.

A: Yes, this element is included in our study partnering with NOAA'S National Centers for Coastal Ocean Science, entitled: *Development of Computer Simulations to Assess Entanglement Risk to Whales and Leatherback Sea Turtles in Offshore Floating Wind Turbine Moorings, Cables, and Associated Derelict Fishing Gear Offshore California*. (For details, see the study profile at: <https://www.boem.gov/pr-19-ent-profile/>). This is specifically mentioned in the webinar on slide #37. — *Desray Reeb*

Q: Are there studies from existing facilities to evaluate the electromagnetic field impact on mammals, albeit different species than those on the west coast?

A: The study that was mentioned includes EMF as an impact causing factor: https://espis.boem.gov/final%20reports/BOEM_2018-031.pdf — *Webinar Participant*

A: The HYWIND offshore floating wind farm is the only commercial farm currently in existence, with the WindFloat project offshore Portugal currently under construction. To the best of my knowledge there is currently no data on EMF impacts on mammals from these projects. That said, as mentioned by the webinar participant above, as well as on slide #38 of the webinar, the BOEM-funded study entitled *Effects of EMF from Undersea Power Cables on Elasmobranchs and Other Marine Species* was a review of available evidence of electric and/or magnetic fields in various species, including marine mammals. The study determined that dolphins and porpoises are likely to detect/react to direct current (DC) cables compared to alternating current (AC) cables, since AC EMFs are too low for these species to detect. That said, this theory needs empirical validation. The study determined there was insufficient information available about whales to determine effects from EMF – and as such, recommended further research. Please find this study report here: <https://espis.boem.gov/final%20reports/5115.pdf> — *Desray Reeb*

Q: What is the process and contact info for submitting proposals for funding to BOEM to address some of these topics?

A: As part of BOEM's Environmental Studies Program (ESP) studies planning process, BOEM invites stakeholders to suggest study ideas (but does not solicit proposals). The invitation is issued in the first quarter of a fiscal year and invites ideas for studies to be funded in the following fiscal year. For more information about the ESP planning process, see or contact:

<https://www.boem.gov/environmental-studies>

<https://www.boem.gov/environment/environmental-studies/environmental-studies-planning>

Jonathan Lilley (jonathan.lilley@boem.gov)

As a complement to BOEM's agency-wide process for planning ESP studies, BOEM's Pacific office also invites ideas (but does not solicit proposals) for studies that will specifically inform energy and mineral programs offshore California, Oregon, Washington, and Hawaii. Please see our *Invitation for Stakeholder Input & Study Ideas for BOEM-Funded Research in Pacific OCS* at:

<https://www.boem.gov/invitation-pacific-study-ideas-fy2021pdf>

For more information about Pacific studies, see or contact:

<https://www.boem.gov/Pacific-Studies/>

Jeremy Potter (jeremy.potter@boem.gov) or Cathie Dunkel (catherine.dunkel@boem.gov)

— Cathie Dunkel

Q: If we know of an offshore study from NorCal that might be useful, where might we submit it?

A: Yes please! We'd be most grateful to receive information on additional studies or sources of information. Please e-mail desray.reeb@boem.gov with the study information. — Desray Reeb

Q: Also interested if BOEM is considering cumulative impacts already given issues on east coast. Maybe a PEIS [Programmatic Environmental Impact Statement] for west coast wind?

A: On the East Coast BOEM is writing a cumulative impact supplement right now. On the West Coast we could do cumulative evaluations and consider wind as a programmatic activity under NEPA to address that. — Webinar Participant

A: Even though offshore floating wind development on the U.S. West Coast is still very much in the planning phase, we certainly do keep cumulative impacts in mind, and we are learning whatever we can from BOEM's experiences on the U.S. East Coast. As far as a PEIS is concerned, since floating wind is such a nascent industry worldwide, with no large-scale floating wind farms currently in existence and very little, if any, environmental impact data currently available, in my opinion, it's too early to think about a PEIS. If/when this situation changes and more data become available, we could again consider the appropriateness of a PEIS at that time. — Desray Reeb

Q: I really liked the image comparing the size of the 8MW turbines to the statue of liberty; is there a link to that pic?

A: That illustration was created by Josh Bauer at the National Renewable Energy Laboratory (NREL) and it appears in many articles, for example: <https://www.energy.gov/eere/wind/articles/top-10-things-you-didn-t-know-about-offshore-wind-energy> — Desray Reeb

Q: Thanks for this interesting presentation. It appears that the response metric most often used in these studies to describe impacts is changes in distribution or movement patterns. Is BOEM interested in assessments of other response metrics, such as physiological responses?

A: Physiological response metrics seem to be of high interest in the Atlantic due to concerns about pile-driven turbines, which presumably have a more substantial, and possibly more detectable, impact on marine mammals than the installation of floating wind turbines. That said, BOEM's Pacific office is always interested in exploring new ways to properly assess impacts to marine mammals as a result of offshore renewable energy development. — *Desray Reeb*

Q: Would be interesting to see model include potential for animals entangled in gear already. Not just ghost gear.

A: Thanks for that interesting idea. I will take that back to our study partners and discuss this idea further. — *Desray Reeb*

Q: Have you looked at existing data on environmental impacts including whales from offshore floating wind platforms off Portugal?

A: WindFloat 1 was a pilot project that deployed a 2 MW turbine 5 km off the coast of Portugal. WindFloat Atlantic is an offshore floating wind farm located 20 km off the coast of Viana do Castelo, Portugal. Commissioned in January 2020, the project is considered to be the world's first semi-submersible floating wind farm and the first floating wind farm in continental Europe. WindFloat Atlantic project includes three turbines installed on floating foundations that are anchored at a water depth of 100 m. The installation of the first turbine on the floating platform of the WindFloat project was completed in October 2019. The first platform began supplying clean energy through a 20 km cable to the substation of Viana do Castelo in January 2020. The second platform was transported to the wind farm site from the Port of Ferrol in Spain in December 2019 for installation next to the first foundation. Though not directly comparable to the U.S. West Coast scenario, we look forward to reaching out to these developers as this project progresses and gleaning any applicable knowledge. — *Desray Reeb*

Q: Will the platforms act as heat sink?

A: I do not know about any literature on this topic and will be happy to receive any that you know of: desray.reeb@boem.gov — *Desray Reeb*

Q: Is there synergy in researching cable depth with respect to fisheries and marine mammals to find optimum?

A: Yes, but this is mainly a technical issue. The turbines require their mooring systems to be designed in a way that ensures technical feasibility. That said, we are interested in working with industry and stakeholders to find the middle ground whenever possible. Our siting process attempts to reduce overlapping stakeholder/resource use right at the beginning, but as things develop, and in line with our regulatory obligations, BOEM continues to investigate avenues of mitigation to reduce impacts to the human and natural environments. — *Desray Reeb*

Q: How are models taking into account changing in climate on oceans on factors such as sound transmission. Example of the blobs effect on distribution of species.

A: We do consider existing conditions, which include climate change and the potential implications thereof, when assessing the additive (cumulative) effect of a proposed action; for example, the construction of an offshore wind farm. In a recent Endangered Species Consultation that I undertook with the National Marine Fisheries Service (regarding a Pacific project not related to offshore renewable energy), they requested that we consider the effects of The Blob, and the more recent Northeast Pacific Marine Heatwave, in our environmental analyses. Whenever practicable, models are including this type of current oceanographic and observation data to determine how they affect factors like sound transmission and species distribution, as you mentioned. — *Desray Reeb*

Q: FYI, An Introduction to Floating Offshore Wind webinar hosted by the National Renewable Energy Laboratory (NREL) on February 26, 2020 is available at:
<https://www.youtube.com/watch?v=58EYcYbRKqk&feature=youtu.be>

A: Thank you! An excellent webinar, highly recommended! — *Desray Reeb*

Q: Will there be impact studies done for migratory birds that may be using the same windstreams that the turbines will be using?

A: BOEM is undertaking many studies to assess the potential impacts to marine birds from offshore renewable energy, on both the Atlantic and Pacific. Some studies relate specifically to flight height. For the Pacific, please take a look under “Current” and “Recently Completed” studies here for further information: <https://www.boem.gov/regions/pacific-ocs-region>. For the Atlantic, please take a look under “Ongoing Studies” and “Completed Studies” here: <https://www.boem.gov/environment/environmental-studies/renewable-energy-research>
— *Desray Reeb*
