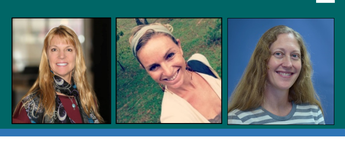
PROTECTED SPECIES MONITORING & MITIGATION: LESSONS FROM WINDFLOAT PACIFIC DEMONSTRATION PROJECT



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ABSTRACT

Early mitigation planning and agency consultations are critical to streamline, economize, and balance environmental permitting and operations during offshore wind development. It is imperative to make use of previous data as well as data collected during planning/mitigation/monitoring to ground-truth and understand actual impacts and adapt mitigation and best practices. The U.S. offshore wind industry, still in its infancy, has the valuable opportunity to apply such adaptive management through collaboration and shared learning. Evaluation of mitigation could reduce economic and time-delay burdens on industry while maximizing conservation benefit. An example is the mitigation/monitoring for marine mammals and seabirds during a site characterization survey for the WindFloat Pacific Demonstration Project, Coos Bay, Oregon. Geophysical surveys occurred along a proposed underwater cable corridor. Use of underwater noise-producing equipment lead to agency consultation to determine potential impacts to marine mammals per the Endangered Species Act and Marine Mammal Protection Act. Instead of an Incidental Harassment Authorization (IHA) permit for harassment of marine mammals, it was decided that a Letter of Concurrence (LOC) was the most efficacious approach. Although LOC issuance was faster than an IHA, the LOC required more conservative mitigation involving full avoidance of marine mammal harassment through strict and ultimately, costly mitigation, including shut-down of operations when any marine mammal was within 500m of the vessel. However, further consultation with the agencies resulted in some relief associated with speed restrictions near pinnipeds and dolphins. Mitigation also entailed (1) obtaining real-time sighting data to implement field mitigation, (2) documenting marine mammal numbers/reactions to underwater noise, and (3) collecting baseline marine mammal and seabird data. 653 groups (~2,254 individuals) from 14 marine mammals species were documented.

Marine mammal observations resulted in 84 mitigation events, including 57 equipment shut downs lasting ~15-30 min each. Due to the high numbers of MMs in this area, and lack of an IHA, many mitigation events (e.g., shut down, vessel slow-downs/turns) were required, resulting in costly lost operational time. Agency cooperation was good, but we are all learning our way in a new industry

EVALUATING MITIGATION

Sub-bottom profiling was the action of the WindFloat Pacific Demonstration Project. The National Marine Fisheries and Marine Mammal Commission have acknowledged that IHAs are not necessarily warranted for such projects, depending on whether the *sound frequencies* overlap those of the marine mammals that may occur in the area and whether these animals may be exposed to *sound levels* above NMFS-regulated criteria. However, consultations under ESA resulted in proposed mitigations from BOEM and NMFS that included shut-down of operations when "any marine mammal" was within 500m of the vessel. On the Oregon coast, seals and sea lions are common and not listed under ESA. Further, information from other studies and IHAs indicate that the distance to the NMFS-regulated sound exposure criteria for the project equipment being used (a received level of 180 dB rms for cetaceans and 190 dB rms for pinnipeds) was considerably smaller than the 500m shutdown distance. Thus, in retrospect, this mitigation approach was not practical and was more stringent than necessary to be effective.

1. Research standard mitigations for your activity
2. Research local marine mammal and ESA species occurrence
3. Research current sound exposure thresholds and triggers
4. Determine sound source level and sound frequencies *relative to NMFS thresholds and marine mammal hearing*
5. Evaluate standard mitigations in the context of 2, 3, and 4.
6. **Evaluate** practicality & efficacy of mitigations
7. Choose practical & effective mitigations for your project
8. Consult with agencies—provide your rationale
9. If agencies disagree, negotiate and loop back to #6

KEY: Plan for time needed to consult and discuss mitigation options with the agencies

ACKNOWLEDGEMENTS

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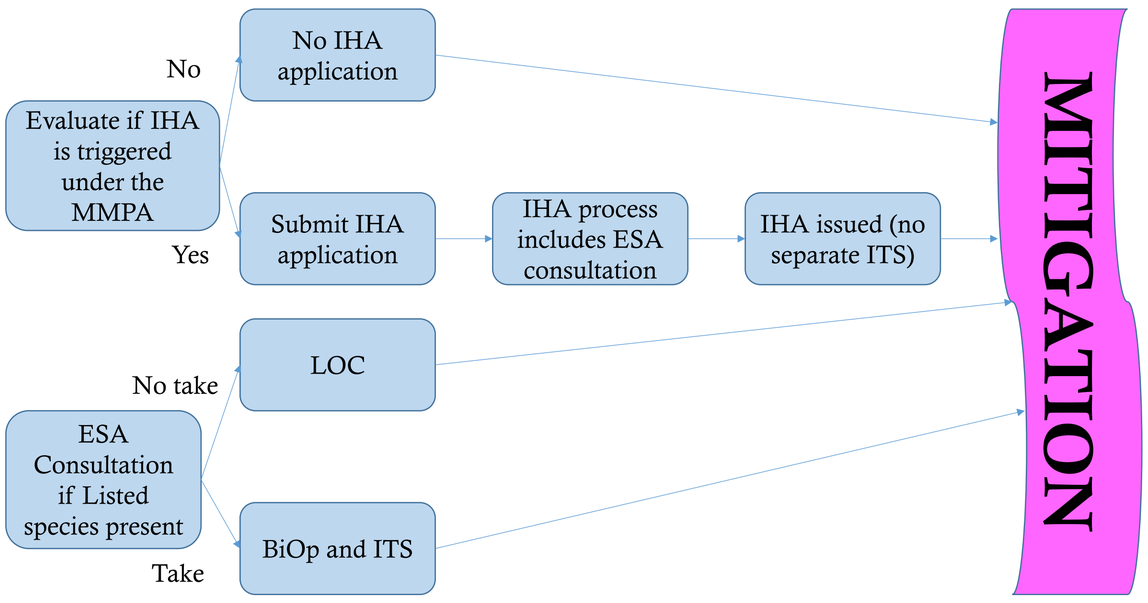
INITIAL PLANNING DECISIONS



IHA = Incidental Harassment Authorization under the Marine Mammal Protection Act (MMPA), ESA = Endangered Species Act; LOC = Letter of Concurrence; ITS = Incidental Take Statement; BiOp = Biological Opinion

- An IHA is not necessarily triggered for every project. If mitigations are sufficient to avoid "take" of marine mammals, and/or marine mammals will not be exposed to sound levels above regulated criteria, *an IHA is not needed*. However, an IHA does provide allowance for take, so it can be a good option when mitigations to avoid take are impractical.
- During the IHA process, if a listed species may be affected, ESA consultation occurs and any incidental take allowed under ESA is rolled into the IHA permit, along with any ESA-specific mitigation requirements.
- If there is no IHA application, ESA consultation is still necessary if ESA species may be impacted. If take is expected, an ITP can be issued. If this ESA take involves marine mammals, it triggers an IHA.
- If ESA consultation results in no expected take, an LOC can be issued. It will include mitigations that avoid take.
- NMFS will not issue LOCs under the MMPA with respect to an IHA for acoustic impacts. *It is wise to carefully document your decision-making process if you opt out of an IHA.*

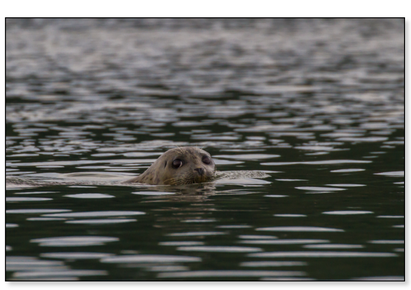
ALL ROADS LEAD TO MITIGATION

Mitigation may offset the need for a permit or be required under a permit

Protected Species Observers scanning for marine mammals and seabirds and recording sighting data

LESSONS LEARNED

- Begin permit planning early
- Improve use of pre-existing data in review/agency consultation
- Apply for permits appropriate to site conditions
- Thoroughly evaluate mitigation/monitoring options
- Recognize importance of situational learning



Harbor seals were a common sight within the Coos Bay marina. 12 July 2015, photo credit: Vanessa James.

Black-footed albatross photographed during WindFloat monitoring. 23 July 2015, photo credit Vanessa James

Pacific white-sided dolphins were a common sight further (>20 km) offshore. 3 November 2014, photo credit : Vanessa James.

ESA-endangered blue whale observed in summer 2015. 14 August 2015, photo credit: Vanessa James.