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### **Baseline Data Collection and Environmental Monitoring of Offshore Wind Projects**

Our organizations strongly support development of environmentally responsible offshore wind energy as a key to the critical transition away from harmful fossil fuels to a clean energy economy. Offshore wind power provides a tremendous opportunity to fight climate change, reduce local and regional air and water pollution, and grow a new industry that supports thousands of well-paying jobs. While the need for this transition is only becoming more urgent, we can and must ensure that all U.S. offshore wind development is guided by science-based measures to avoid, reduce, and mitigate impacts on valuable and vulnerable wildlife.

Baseline data collection and long-term environmental monitoring of offshore wind project sites is a critical component of responsible offshore wind development. It allows us to build our understanding of the impacts of offshore wind development on marine and coastal resources, and the effectiveness of mitigation technologies (e.g., noise attenuation and thermal detection), so that industry can address relevant environmental concerns most productively.

To forge a strong start to U.S. offshore wind's success, our organizations call for each approved offshore wind Construction and Operations Plan (COP) to incorporate a robust scientific research and monitoring plan to monitor the interactions of wildlife – marine mammals, sea turtles, birds, bats, finfish, elasmobranchs, and invertebrates – with project development and operation. Improved knowledge of an area's wildlife populations and oceanographic conditions (e.g., seafloor habitat and airspace) before, during, and after project construction will help explain whether and how an offshore wind project impacts its surrounding environment and the degree to which efforts taken to avoid, minimize, and mitigate harm have been successful, while also enabling the adaptive management of environmental impacts that may occur. To instill trust in U.S. offshore wind, science should be conducted in a collaborative and transparent manner, involving recognized marine and wildlife experts, engaging relevant stakeholders, and making results publicly available. Lessons learned from the pilot U.S. offshore wind facility – [Block Island Wind Farm](#) – can help refine fish and wildlife monitoring protocols for this next stage of commercial developments.

The offshore wind studies proposed in [BOEM's Studies Development Plan 2021-2022](#) (SDP) address many of the key questions posed by the scientific community (e.g., the impact of pile driving activities on marine mammal and sea turtle habitat use and behavior), and must advance in time to address the first U.S. commercial-scale offshore wind projects – regardless of funding source. These proposed studies reinforce BOEM's [marine mammal and sea turtle survey guidelines](#), and are advised by a

milestone workshop held with marine scientists, NGO representatives, regulators, public stakeholders, and offshore wind leaseholders which resulted in [A Framework for Studying the Effects of Offshore Wind Development on Marine Mammals and Turtles](#).

Beyond the studies called for in the SDP, all parties must recognize the dearth of information on offshore presence of bats, marine birds, shorebirds, and migratory songbirds, including nocturnal migrants—particularly species already experiencing population declines. Information is needed as to when birds and bats fly offshore, including at what heights, along the entire U.S. Atlantic coastline and how species may interact with turbines (*e.g.*, shearwaters and petrels are suspected to have a high collision risk, bats may seek out turbines for roosting). Monitoring efforts should employ the best available scientific methods (*e.g.*, autodetection, acoustic monitoring at nacelle height, vertical radar, digital aerial surveys, targeted tagging of bats and birds). Aerial survey designs should account for detection bias and should cover a minimum 20 km buffer, in addition to the project footprint, to properly capture potential displacement effects.

Across all species, we recommend *at least* two years of baseline data studies and collection of long-term data during operation to accurately assess the impact of project operations on various species (*e.g.*, more than ten years of monitoring in Europe has provided insights into the initial effects of offshore wind development on benthic communities). Traditional survey techniques (*e.g.*, vessel-based monitoring efforts) must be incorporated until digital aerial surveys are confirmed capable of distinguishing between marine species (*e.g.*, Common Terns, Arctic Terns, and Roseate Terns). Project research should also help address questions related to the impact of cables' emitted electromagnetic fields on sea turtles, fishes, and other marine life that use the earth's magnetism as a directional cue and electrical cues for foraging, and also on how the structures may affect prey species.

Developers should coordinate with state and regional scientific efforts, including by contributions to the regional ocean data portals, to ensure results from their individual lease areas can be interpreted within a regional context and contribute to the generation of regional-scale data, which is required to address questions related to population-level change and cumulative impacts across species' geographic range. As the Regional Wildlife Science Entity (RWSE) gains traction, best practices developed through these endeavors should be incorporated into existing project monitoring work. RWSE prioritization of research objectives and data standardization protocols will prove immensely helpful; however, RWSE's future effort should not preclude the first round of commercially viable offshore wind projects from undertaking strong monitoring plans. Federal and state permitting agencies should similarly continue to fund and encourage collaborative research while best practices for monitoring and data collection are hammered out, and, once drafted, should standardize the methodology going forth.

Our organizations urge that all developers conduct comprehensive environmental monitoring of their project sites in order for the work to proceed in a manner that is protective of our valuable marine resources, enables adaptive management, and provides a strong, trusted, foundation for offshore wind energy's future.