

Establishing a Passive Acoustic Monitoring Network Along the U.S. Atlantic Outer Continental Shelf

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The U.S. Atlantic coastline is poised to undergo rapid change in the coming years, as the construction of offshore wind farms is already underway. By 2026, several hundred wind turbine foundations will be in the water. There are many questions regarding the potential impacts of offshore wind development on marine species. For example, will the presence of this new infrastructure result in measurable changes to the distributions of marine species? Will some species be attracted to the structures, while others avoid them? The Bureau of Ocean Energy Management is required to assess and monitor the impacts of its permitted activities on marine life to better inform future leasing decisions, and to ensure compliance under the National Environmental Policy Act. Given the critically endangered status of the North Atlantic right whale, whose migratory corridor overlaps with some of the most reliable wind resources on the Atlantic Outer Continental Shelf, one driving question has garnered significant attention among stakeholders: will there be a measurable change in baleen whale distributions as a result of offshore wind development? To answer this question, BOEM, along with regional partners, is establishing a Passive Acoustic Monitoring network along the Atlantic coastline to listen for whale vocalizations and monitor for potential changes in marine soundscapes. We have established a model to work with industry and other partners to ensure adequate sampling across key geographic areas. BOEM and its partners have created best practices for instrument calibration, data QA/QC, and da

The UK Marine Noise Registry and Its Role in Impulsive Noise Monitoring and Management

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The UK Marine Noise Registry (MNR) was established in 2015 following a commitment in the UK Marine Strategy (UKMS) to monitor and manage underwater noise to the extent that it does not have adverse effects on marine ecosystems and species at the population level. The MNR collates data on human activities in UK seas that produce loud, low to medium frequency impulsive noise, i.e., seismic surveys, sub-bottom profiling, impact pile driving, explosive use, military sonar (declassified), acoustic deterrent devices, and multibeam echo-sounders.

Submitting data to the MNR is a licence requirement for most such activities. Data include where and when the noisy activity occurred, and where available, sound source properties such as the frequency, maximum airgun volume, maximum hammer energy, TNT equivalent, sound pressure level. The data in the MNR is used for a variety of purposes. For example, every six years, the UKMS's Assessment of Good Environmental Status of the UK seas tracks the spatio-temporal distribution of impulsive sound sources.

The upgraded MNR (2023) introduced two new functions, following feedback from users: the disturbance and cooperation tools, enabling assessments of the potential noise disturbance footprint of activities within MPAs for harbour porpoise, and user interaction to resolve instances when advised noise limits could be exceeded. Users now also have the option to directly obtain custom data in the form of maps and tables, which can be useful for planning purposes and cumulative impact assessments as well as retrospective assessments.