Passive acoustic and oceanographic moorings to support baseline data collection and modelling efforts in proposed wind energy areas off Nova Scotia

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Abstract ID: 76
Call:: MRC 2025 Technical Track – Call for Abstracts
What Theme Are You Submitting for?: Environmental and Ecosystem Considerations
Keywords: acoustics, baseline data collection, cetaceans, ecosystem impacts, oceanographic conditions, offshore wind

Understanding the impacts of offshore wind development on aquatic species requires information on occurrence and behavior in the area of interest, environmental and oceanographic conditions that may influence their habitat use, as well as natural variability in these over various spatial and temporal scales, prior to construction and operation. Such data is needed to establish baseline conditions, support impact analyses, and assess the effectiveness of mitigation measures over time. Passive acoustic monitoring (PAM) using bottom-moored acoustic recorders offers a means of collecting data on the occurrence of cetaceans (whales, dolphins, porpoises) throughout the year, which can potentially be used to examine behavior, habitat use, and movement patterns. PAM data collection also provides information on ambient and anthropogenic noise levels. Further, collecting oceanographic data concurrently with PAM data assists with interpretation of received sound measurements and may provide insights into how oceanographic processes influence species occurrence. Moorings may also provide a platform for deployment of other equipment, such as acoustic tag receivers, which could be used to support fish and seal tracking studies. This presentation will describe planned studies being conducted by Fisheries and Oceans Canada using joint PAM-oceanographic moorings to be deployed beginning in Fall 2025 in potential wind energy areas (WEAs) identified off Nova Scotia: French, Middle, and Sable Island banks, and Sydney Bight. This mutli-pronged approach to data collection and use increases efficacy of mooring deployments in support of baseline environmental monitoring in proposed WEAs.

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