

COI Report
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The local environment of Nantucket Sound is poised for potential changes with the construction and operation of 130 wind turbines as part of the Cape Wind project. Wind farms can generate substantial ocean noise. This human-produced noise can impact the behavior, communication and physiology of dolphins, whales and fishes, all of which make and hear sounds as part of essential biological activities. This funding is supporting access to the sea to initiate a new project. We are establishing key baseline information about the natural acoustic environment (soundscape) of Nantucket Sound before wind farm construction and operation. This early work is novel and critical to evaluate any potential wind farm effects. We have already made three deployments of WHOI's innovative acoustic recording device called the DMON (Digital acoustic Monitors). As part of this support, we are going out to Nantucket sound on a weekly basis to change out DMONs and download the data. We also developed a simple mooring to deploy the DMON. These tests are the first baseline environmental acoustic monitoring tests for any wind farm in the U.S., thus vital proof-of-concept data for (i) the DMON, (ii) U.S. wind farm monitoring, and (iii) our WHOI initiative to use the sounds that animals make as proxy to explore biodiversity and human-impacts to the marine environment. Through NOAA's Sea Grant program we plan to continue the baseline monitoring initiated under this support. Starting this project in a timely manner would not be possible without this funding. We also expect the support and results gained will be leveraged for future funding at this and additional proposed wind farm sites (from Office of Naval Research and the Bureau of Ocean Energy Management,) and will facilitate NSF proposals for applying WHOI's passive acoustic to examine marine acoustic ecology, biodiversity, species abundances and habitat changes (NSF's Biological Oceanography and Ocean Observation Initiatives)."

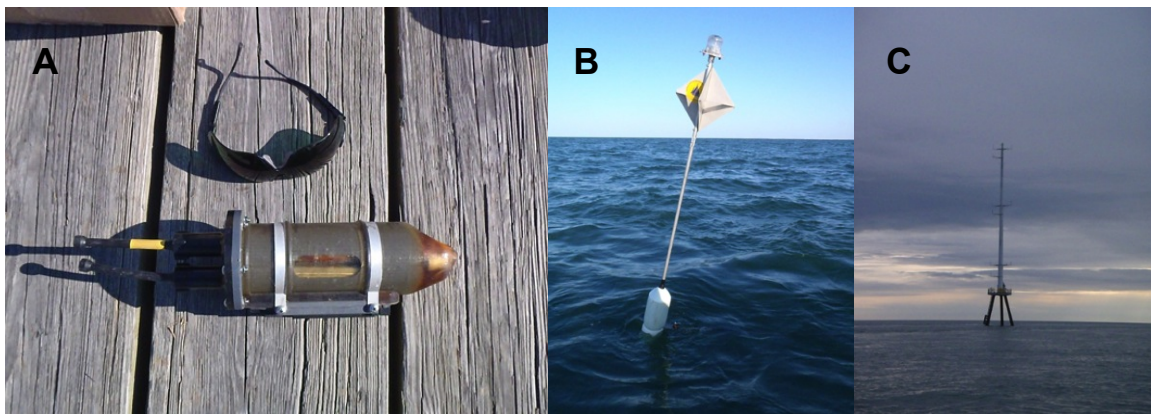


Figure 1. (A) The DMON on the dock after retrieval. This novel device records all sound types from low-frequency fish and construction sounds to ultrasonic dolphin signals. (B) Our mooring on Horseshoe Shoals, Nantucket Sound, site of the future Cape Wind windfarm. (C) The current CapeWind 'test' platform on Horseshoe Shoals. Our DMON is approximately 200 m from this platform.

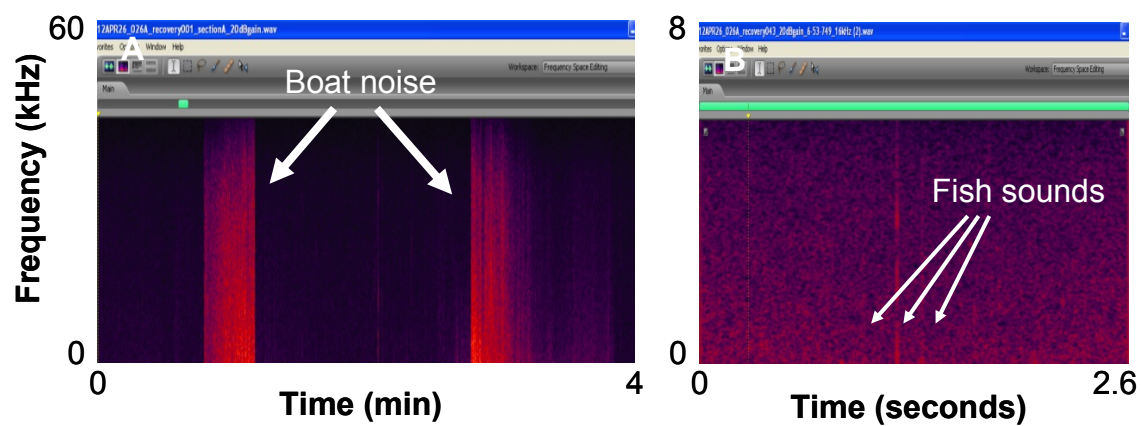


Figure 2. Sound recordings from the first DMON deployment on Horseshoe Shoals, Nantucket Sound. (A) Shows noise from nearby fishing vessels, but otherwise a relatively quiet environment. (B) Yet unidentified fish sounds.