Supplement to the Draft Environmental Impact Statement | June 12, 2020

The Impact of Underwater Sound on Protected Species

What sounds will be made?

Pile driving is the loudest sound of concern from the project. Not all project-related sounds are expected to be harmful. Some sounds will only be present during certain stages over the life of an offshore wind facility.

Studies in European waters show that harbor porpoises may leave an area and feed less when pile driving begins but generally return within weeks after pile driving activities end.

What natural and man-made sounds are in the project area?

- Commercial and recreational boats
- Scientific surveys
- Fishing and navigational sonars
- Animal vocalizations
- Wave action, storms

The population of North Atlantic right whales has hown to be declining, and they may be a species of particular interest in the waters off Massachusetts and Rhode Island. *Photo taken under NMFS permit number 19674.*

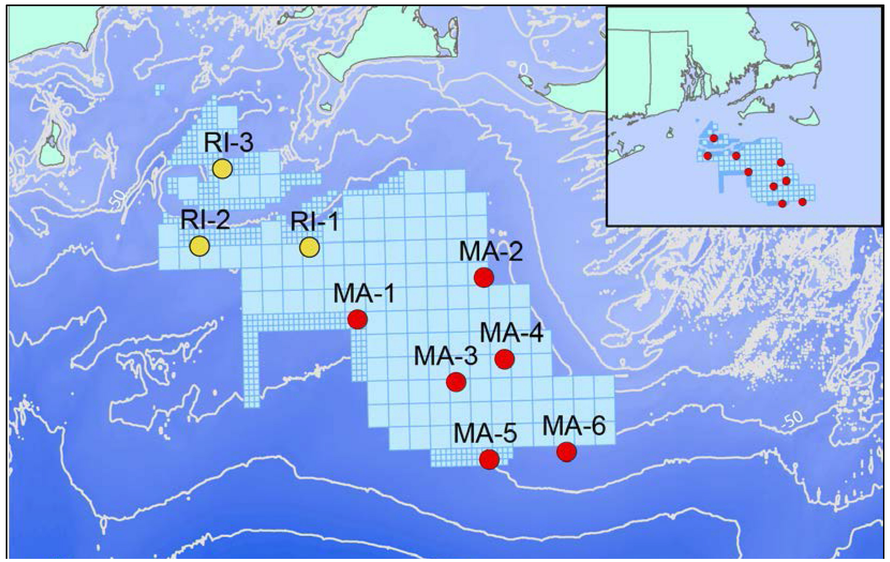
What are the possible impacts to marine mammals and sea turtles from pile driving?

Hearing Impacts
- Temporary hearing loss
- Permanent hearing loss

Behavioral Impacts
- Avoidance of the area
- Impacts to hearing ability (temporary or permanent)
- Changes to feeding success, resting, migratory behavior
- Disrupted communication
- Stress

What information informed the analysis?

- Technical information on sound sources
- Underwater sound models
- Animal movement models to assess realistic exposure
- The seasonal occurrence of protected species in the lease area
- Information on animal responses to sound
- National Oceanic and Atmospheric Administration guidance on assessing the effects of sound on marine mammals



Recording sites (red and yellow dots) in the MA and RI wind energy areas, from November 2011 to March 2015. Ambient sound levels across all sites varied between 96 dB and 103 dB re 1 µPa in the hearing range of baleen whales during 50% of the recording time. These measurements were part of a cooperatively funded study by BOEM and MassCEC. *(www.boem.gov/RI-MA-Whales-Turtles)*