



# Offshore Construction Sounds and Marine Life

## What sounds will be made?

There are many different sounds related to offshore construction activity, including the intentional transmission of sounds for characterizing the environment such as geophysical sonars, and the inadvertent transmission of sounds such as from vessel engines and pile-driving activity. Some sounds will only be present during certain stages over the life of an offshore wind facility.



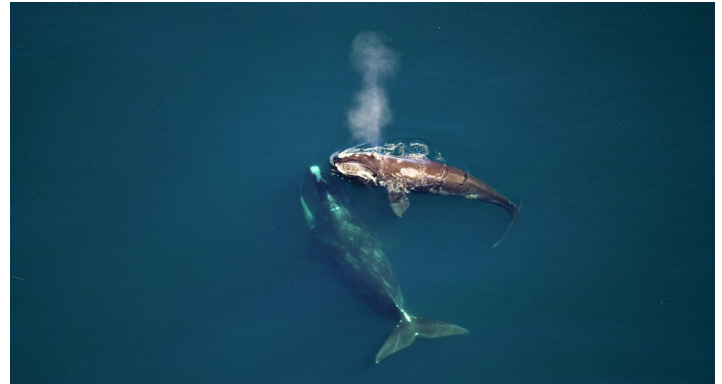
Studies in European waters show that harbor porpoises may leave an area and feed less when pile driving begins but generally return within weeks after pile driving activities end.

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

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

## What are potential impacts of pile-driving sound on marine life?

- Temporary hearing loss
- Permanent hearing loss
- Avoidance of the area
- Changes to feeding, resting, or migratory behavior
- Disrupted communication
- Stress



The population of North Atlantic right whales is declining, and are therefore a species of particular interest along the east coast with any offshore development. Photo taken under NMFS permit number 19674.

Environmental impact analyses are conducted to understand the effect that offshore development will have on marine resources, including protected species. These analyses will include:

- Technical information on sound sources
- Underwater sound propagation 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 Marine Fisheries Service guidance on assessing the effects of sound on marine mammals

## What is BOEM doing to mitigate potential effects of sound on marine life?

Project-specific mitigation is required, such as:

- Using sound mitigation around loud activities, e.g., bubble curtains
- Using time of year restrictions on certain activities when large numbers of marine mammals are likely to be present in the project area
- Using human observers to monitor for marine mammals in the project area during construction
- Deploying real-time passive acoustic monitoring devices to detect vocalizations of marine mammals