

Why Now?

Seismic surveys are currently conducted in the Atlantic Outer Continental Shelf (OCS) for federally funded academic research. These surveys utilize the same technology as used for oil and natural gas surveys, and occur without harm to marine life or coastal communities.

However, the last oil and natural gas seismic surveys of the Atlantic OCS were conducted over 30 years ago, also without harm to marine life or coastal communities. Due to technological advances, these existing estimates of the oil and natural gas resource potential are out-of-date.

- 30 year old estimates using outdated technology for the Atlantic OCS are:
 - 4.72 billion barrels of oil
 - 37.51 trillion cubic feet of natural gas
- Today, seismic surveys using modern technology produce sub-surface images which are much clearer than those from decades ago.
- These advances coupled with Exploration and Production (E&P) activities, generally lead to increased resource estimates. For example, in 1987 the Minerals Management Service estimated only 9.57 billion barrels of recoverable oil in the Gulf of Mexico. With more recent seismic data acquisition and additional exploratory drilling, that estimate rose in 2011 to 48.4 billion barrels of recoverable oil – a fivefold increase.

Modern offshore oil and natural gas exploration requires the use of seismic surveys.

1

Modern seismic surveys make offshore energy production safer and more efficient by greatly reducing the drilling of “dry holes” (where no oil or natural gas is found).

2

Seismic surveys are the only feasible technology available to accurately prospect for oil and natural gas reserves offshore.

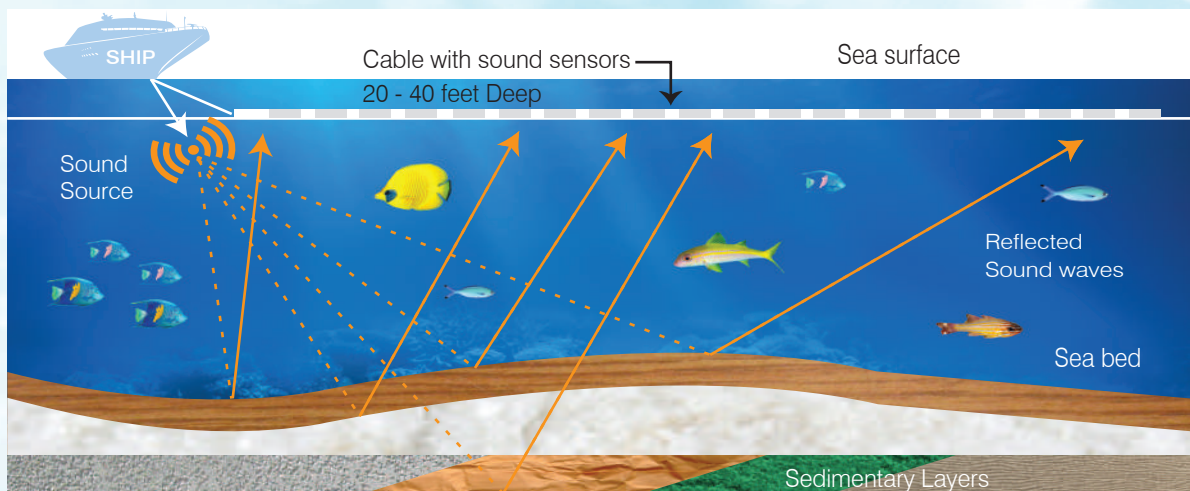
3

Seismic surveys have been safely used for decades around the world to assess the location and size of potential oil and natural gas deposits, which often lay several miles beneath the ocean floor.

HOW ARE SEISMIC SURVEYS PERFORMED?

Seismic surveys use compressed air to send sound waves into the ocean floor and reflect back to the surface.

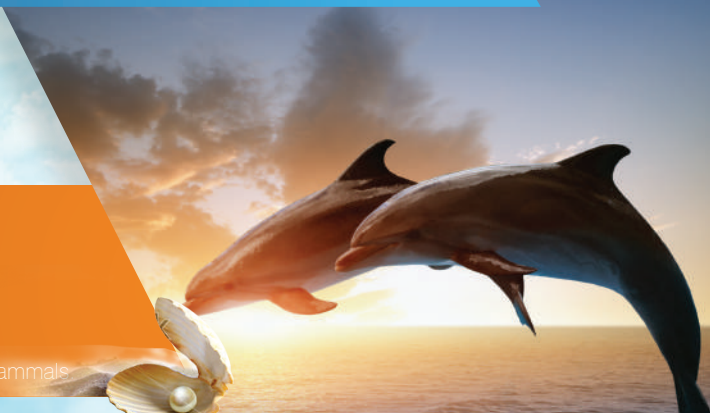
- 1 Seismic surveys are undertaken with great consideration of interactions with the marine environment.
- 2 The sound source creates sound waves of short duration by releasing compressed air into the water.
- 3 The data collected is analyzed and used to help locate potential geologic structures and energy resources beneath the ocean floor.
- 4 The sound from the seismic source, which is typically activated every 10-15 seconds, does not last long in any one location and is not at full volume 24 hours per day.
- 5 The sound produced during seismic surveys is comparable to many naturally occurring and other man-made ocean sound sources.



WHAT PRECAUTIONS DOES THE INDUSTRY TAKE TO PROTECT MARINE ANIMALS?

The oil and gas industry has demonstrated the ability to conduct seismic exploration activities in a manner that protects marine life. Marine seismic exploration is carefully regulated by the federal government and managed by the industry to avoid impacting marine animals. These required mitigation measures include:

1. "Ramp-up" procedure gradually increases sound levels, allowing animals to leave the area before operations commence.
2. Time and area closures to protect breeding, nesting, and migration of certain species.
3. Protected Species Observers are onboard to stop operations if a marine mammal enters an "exclusion zone" around the operation.
4. Passive Acoustic Monitoring allows for around-the-clock observing for vocalizing marine mammals.



WHAT IS THE CURRENT STATE OF SCIENCE AND RESEARCH?



Based on both available scientific knowledge and operational experience, there is no evidence to suggest that the sound produced during an oil and gas industry seismic survey has resulted in any physical or auditory injury to a marine mammal.



Research studies and operations monitoring programs designed to assess the potential impacts from seismic surveys have not demonstrated biologically significant adverse impacts on marine mammal populations.



Not all marine life hears the same frequencies equally well. Much like the differences in hearing between humans and bats or dogs, some marine animals hear well at higher frequencies, and relatively poorly at lower frequencies. Others hear better at lower frequencies.



"To date, there has been no documented scientific evidence of noise from air guns used in geological and geophysical seismic activities adversely affecting marine animal populations or coastal communities. This technology has been used for more than 30 years around the world. It is still used in the U.S. waters off the Gulf of Mexico with no known detrimental impact to marine animal populations or commercial fishing" (William Y. Brown, BOEM Chief Environmental Officer)

FOR WHAT ELSE ARE SEISMIC SURVEYS USED?

1 To conduct federally funded academic research on various oceanographic and geophysical conditions. NSF, USGS and NOAA regularly fund seismic surveys in U.S. offshore waters, including the Atlantic.

2 To locate potential sand and gravel sources for beach restoration and sand and gravel mining.

3 To locate sites for alternative energy structures associated with wind, ocean current, and wave-related energy production and transmission.

4 To locate or avoid sensitive resources.

To find out more, visit www.noia.org.

