

Understanding Marine Mammal 'Takes' Under the U.S. Marine Mammal Protection Act

The concept of "take" is unique to U.S. law, in particular, the Marine Mammal Protection Act (MMPA). The MMPA was originally enacted into law in 1972 in response to increasing concerns that significant declines in some species of marine mammals were caused by human activities such as overhunting, overfishing and unscrupulous trade. It was not originally designed to regulate sound in a marine ecosystem. Congress defined "take" in the MMPA as "to harass, hunt, capture or kill" a marine mammal, or the attempt to do so. "Harassment" is defined as "any act of pursuit, torment, or annoyance" that either:

- A. "has the potential to injure a marine mammal or marine mammal stock in the wild" (referred to as a Level A harassment); or
- B. "has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering" (referred to as a Level B harassment).

The MMPA established a prohibition on the "taking" of marine mammals in U.S. waters, unless the take is authorized by the designated U.S. regulatory authorities. The primary agency responsible for administering and enforcing the MMPA is the National Marine Fisheries Service (NMFS) within the U.S. Department of Commerce. NMFS has jurisdiction for whales and dolphins (cetaceans) and pinnipeds (seals, sea lions) other than the

walrus. Walrus, manatees, sea otters, dugongs, and polar bears are protected under the MMPA by the U.S. Fish and Wildlife Service (FWS) within the U.S. Department of the Interior.

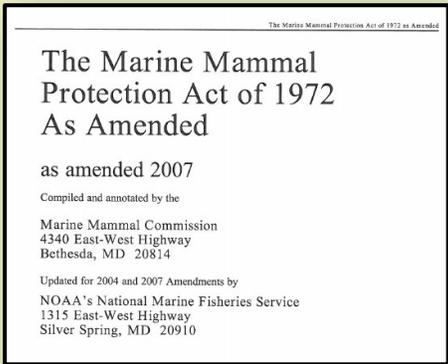
Current NMFS policy states that an activity has the potential to injure (Level A

harassment) if the marine mammal receives acoustic (sound) pressure levels at or above 180 decibels relative to 1 micropascal (root mean squared), and has the potential to disrupt (Level B harassment) a behavioral pattern at or above 160 decibels 1 μ Pa (rms). These threshold decibel levels are based on very conservative assumptions that do not reflect a large body of recent scientific data and do not recognize the frequency sensitivities of different marine mammal species groups. Just as humans and dogs have different frequency sensitivities (i.e., humans cannot hear a high pitched dog whistle), marine mammals also hear at different frequencies.



Under the MMPA, NMFS (and FWS) administers a system of permitting authorities that allows for take in certain situations, such as for commercial fishing permits, scientific research permits, educational activities (e.g., science centers and aquaria) and subsistence hunting in Alaska. For many years, NMFS and FWS have authorized the incidental, but not intentional, taking of marine mammals for activities related to offshore seismic and offshore energy and minerals exploration. This is done through issuance of Incidental Take Regulations (ITRs), which are effective for a period up to five years, and through Incidental Harassment Authorizations (IHAs), which are effective for a period of no more than one year. The best available science and information demonstrate that, whether individually or cumulatively, these authorizations have resulted in no detectable adverse impacts to marine mammal populations.

So, how does one account for the estimates of “takes” of marine mammals? The fact is this estimate does not reflect an actual expectation that marine mammals will be injured or disturbed. US agencies have repeatedly acknowledged these estimates are based on modeling overly conservative assessments and “are not expected levels of actual take.” Instead, the modeled numbers reflect the highest-range estimate at which marine mammals may be exposed to seismic activity, without any consideration of the role of mitigation in reducing risk of exposure. In fact, with successful mitigation the government acknowledges that all estimates of injury would be avoided.



There are no verified injuries or deaths of marine mammals from exposure to seismic arrays. NMFS itself recognizes that “[t]o date, there is no evidence that serious injury, death or stranding by marine mammals can occur from exposure” to seismic air source arrays, even in the case of large arrays. In marked contrast, the greatest source of marine mammal takes come from fisheries bycatch, and these take counts are based on direct observation of marine mammals killed or seriously injured during fishing.

More than four decades of worldwide seismic survey activities and various scientific research indicate that the risk of direct physical injury to marine mammals is extremely low, and currently there is no scientific evidence demonstrating biologically significant negative impacts on marine mammal populations. The seismic industry is committed to conducting its operations in an environmentally responsible manner and utilizes mitigation measures, such as exclusion zones, soft-starts and protected species observers to further reduce any possibility of impacts to marine mammals.



Additional Resources on Understanding Marine Mammal Takes

1. Final Programmatic Environmental Impact Statement Atlantic Outer Continental Shelf Proposed Geological and Geophysical Activities Mid-Atlantic and South Atlantic Planning Areas, pages 1-5 and 4-62, March 7, 2014: <http://www.boem.gov/BOEM-2014-001-v1/>
2. BOEM, Record of Decision, page 12, 7.18.2014.: <http://www.boem.gov/Record-of-Decision-Atlantic-G-G/>
3. Southall, Brandon t., Ann E. Bowles, William T. Ellison, James J. Finneran, Roger I. Gentry, Charles R. Greene Jr., David Kastak, Darlene R. Ketten, James H. Miller, Paul E. Nachtigall, W. John Richardson, Jeanette A. Thomas, and Peter I. Tyack, 2007. Marine Mammal Noise Exposure Criteria: Initial Scientific Recommendations. *Aquatic Mammals*, 33(4): 411-522.
4. BOEM, MMPA: <http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/MMPA/index.aspx>
5. NOAA MMPA: <http://www.nmfs.noaa.gov/pr/laws/mmpa/>

Environmental Stewardship

The geophysical industry takes a great deal of care and consideration of potential impacts to the marine environment. In its efforts to operate in an environmentally responsible manner, the industry implements measures to ensure that marine mammals are further protected from direct or indirect harm from its operations. For more than 40 years, the industry has demonstrated its ability to operate seismic exploration activities in a manner that protects marine life. Various research studies indicate that the risk of direct physical injury to marine mammals is extremely low, and currently there is no scientific evidence demonstrating biologically significant negative impacts on marine mammal populations