Proposed Undersea Warfare Training Range

Department of the Navy

Fact Sheet No. 5

Evaluating Acoustic Effects on Marine Mammals

How were the potential acoustic effects on the Undersea Warfare Training Range (USWTR) determined?

Acoustic modeling was conducted to estimate the number of marine mammals that may be affected by the use of mid-frequency sonar in proposed USWTR sites (see Fact Sheet No. 4). The predicted number was analyzed using information on the ecology of each species [see figure on opposite page], including habitat preferences, history of sightings in the proposed USWTR area, areas of species concentration within an operating area (OPAREA), and migration routes. From this analysis, the number of Level A (injury) and Level B (behavioral effects) harassments, and risk to populations, were estimated.

Would the sonar used on the USWTR injure marine mammals?

Acoustic modeling, based on the best science available, shows that direct physical injury from USWTR sonar use is likely only when a mammal is very close to a source of the sonar (within about 33'). The Navy will implement protective measures during training that further reduce the likelihood of harm.

What acoustic effects are predicted?

Predicted acoustic effects are primarily behavioral, although some physiological effects may occur if a marine mammal were very close to the source. The Navy has submitted a Marine Mammal Protection Act (MMPA) letter of authorization (LOA) request to NMFS for the preferred alternative site (proposed Site A), which includes a series of measures that Navy will follow to reduce the likelihood for behavioral disturbance of marine mammals.

The Navy concludes that use of the proposed USWTR has the potential to affect certain endangered marine mammals, and Endangered Species Act (ESA) consultation with NMFS is underway for the preferred alternative. Effects of short-term sound exposures on ESA-listed marine mammals are expected to be very minor; however, the Navy will discuss ways to reduce potential effects with NMFS during the ESA consultation process. The Navy assesses that the proposed action will not adversely modify or destroy any critical habitats, nor jeopardize the continued existence of any listed species. If the preferred alternative changes, the Navy would resubmit the request for an MMPA authorization and revise the ESA consultation. The DEIS fully evaluates potential acoustic effects on marine mammal for each of the four alternatives. The potential effects are summarized as follows:

- *Proposed Site A USWTR, (range center 57 NM offshore of northeastern Florida)*. ESA-listed marine mammal incidental harassment estimates include North Atlantic right whales and humpback whales. Other marine mammal incidental harassment estimates include six dolphin species (Atlantic spotted, bottlenose, pantropical spotted, Risso's, Clymene, and rough-toothed), pilot whales (also a dolphin species), and pygmy/dwarf sperm whales.
- *Proposed Site B USWTR, (range center 52 NM offshore of South Carolina).* No incidental take or harassment of ESA-listed marine mammal is expected. Other marine mammal incidental harassment estimates include two dolphin species (bottlenose and Risso's), pilot whales, and pygmy/dwarf sperm whales.
- *Proposed Site C USWTR, (range center 48 NM offshore of southeastern North Carolina).* No incidental harassment of ESA-listed marine mammal is expected. Other marine mammal incidental harassment estimates include six dolphin species (Atlantic spotted, bottlenose, pantropical spotted, Clymene, Risso's, and rough-toothed), pilot whales, and pygmy/dwarf sperm whales.
- *Proposed Site D USWTR, (range center 46 NM offshore of northeastern Virginia).* ESA-listed marine mammal incidental harassment estimates include fin and sperm whales. Other marine mammal incidental harassment includes eight dolphin species

(common, striped, bottlenose, pantropical spotted, Risso's, Clymene, Atlantic spotted, and rough-toothed), pilot whales, and pygmy/dwarf sperm whales.

What measures have been propsed for reducing acoustic effects?

Effective training on the proposed USWTR range means that all participants need to utilize their sensors and exercise weapons to their fullest capabilities. However, the Navy has developed procedures that would protect marine mammals during Navy training on the USWTR, including visual surveillance by trained marine mammal lookouts, passive acoustic surveillance by submarines (listening for vocalizing marine mammals), and the reduction of sonar power when marine mammals are detected in the vicinity of sonar sources (1,000 yards for ships and 200 yards of helicopter dipping sonar).

Will there be long-term monitoring?

The Navy plans to conduct long-term monitoring of marine species including:

- Coordinating with NMFS to establish a monitoring plan designed and carried out by independent experts.
- Coordinating with NMFS to conduct surveys that will increase the precision of species abundance and distribution information before training on the USWTR begins (as a baseline for later comparisons).Implementing a long-term monitoring program including aerial, shipboard, and passive acoustic surveys of marine mammal populations on the USWTR.
- Assessing trends in species distribution and abundance (both temporary and long-term).
- Emphasizing the Navy's commitment to continue research and contribute to university/independent research that improves the state of science regarding marine species biology and acoustic effects.

Are there any potential acoustic effects to animals other than marine mammals?

No effects on plankton, invertebrates (shellfish, insects, etc.), seabirds, or sea turtles are predicted. Although some fish species would be able to detect the mid-frequency sonars used on the USWTR, current data suggest that significant effects to fish species are not likely.

For Further Information:

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Conceptual Biological Framework Used to Order and Evaluate the Potential Responses of Marine Mammals to Sound