



MARINE MAMMAL COMMISSION

6 February 2012

Mr. P. Michael Payne, Chief
Permits, Conservation and Education Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway, Room 13635
Silver Spring, MD 20910

Dear Mr. Payne:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's 6 January 2012 *Federal Register* notice (77 Fed. Reg. 842) and the application submitted by the U.S. Navy seeking issuance of regulations under section 101(a)(5)(A) of the Marine Mammal Protection Act. The Service is proposing to issue regulations to authorize the Navy to take marine mammals incidental to training, testing, and routine military operations using the Navy's Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar source. The authorization is being sought for a five-year period. The Commission commented on two previous requests for incidental take authorizations for those activities in 1999 and 2006. The current regulations, issued in August 2007, expire in August 2012.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service issue the final rule, provided that it require the Navy to—

- monitor for 60 minutes before resuming SURTASS LFA sonar transmissions after a delay or suspension related to the sighting of a marine mammal in the LFA mitigation or buffer zones unless the Navy observes the animal leaving those zones; and
- monitor for a minimum of 30 minutes after SURTASS LFA sonar transmissions cease using visual observation (if during daylight hours as defined in the proposed regulations), passive acoustics, and the active sonar system.

RATIONALE

The Navy proposes to use up to four SURTASS LFA sonar systems, including the Compact LFA sonar source, as part of military readiness activities, including training, testing, and routine military operations from August 2012 through August 2017. Operations potentially could occur outside of polar areas in the Pacific, Atlantic, and Indian Oceans and in the Mediterranean Sea. At-sea missions for each vessel using SURTASS LFA sonar could last up to 294 days, with 240 days of active sonar transmissions and 54 days of transit time. The maximum number of transmission hours per vessel would not exceed 432 hours annually.

The Service preliminarily has determined that, at most, the proposed activities temporarily would modify the behavior of 70 cetacean and 24 pinniped species. The proposed regulations would

authorize the taking by Level B harassment of no more than 12 percent of each stock per year from the combined use of the four SURTASS LFA sonar systems. Under the proposed regulations, the Navy would stipulate in its applications for annual letters of authorization both the estimated percentage and number of animals in each stock that may be harassed incidental to SURTASS LFA sonar operations. Those estimates would be based on site-specific sound propagation modeling and best available abundance and/or density estimates (i.e., from stock assessment reports that are updated annually or recently published studies). In addition, the regulations would authorize the taking by Level A harassment of no more than 6 mysticetes, 25 odontocetes, and 25 pinnipeds during the five-year period covered by the regulations. The Service believes that the potential for disturbance and injury will be at the least practicable level because of the implementation of the proposed mitigation measures. The Service does not anticipate any take of marine mammals by death and the regulations would not authorize taking by mortality for any species. The Service anticipates that any impact on the affected species and stocks would be negligible.

The proposed mitigation and monitoring measures include—

- excluding SURTASS LFA sonar operations from Arctic and Antarctic waters;
- limiting SURTASS LFA sonar transmissions to 180 dB re 1 μ Pa or less in waters within 22 km of land and within 1 km of the outer perimeter of 21 proposed “offshore biologically important areas” identified as being particularly important for marine mammals;
- using empirical measurements to establish the LFA mitigation zone (i.e., based on the area in which sound levels are sufficient to cause Level A harassment) every 12 hours or more frequently if oceanographic or meteorological conditions change;
- delaying or suspending activities if a marine mammal is detected within 1 km of the LFA mitigation zone (i.e., buffer zone) or within 1 km of any offshore biologically important area;
- using visual observers during daylight hours and passive acoustics and an active sonar system during both daytime and nighttime operations to monitor for marine mammals;
- using ramp-up procedures when initiating the high-frequency marine mammal monitoring active sonar system;
- using the active sonar system for 30 minutes prior to, during, and for 15 minutes after SURTASS LFA sonar transmissions;
- training and qualifying Navy personnel for visual monitoring by one or more marine biologists qualified in conducting at-sea marine mammal visual monitoring from surface vessels;
- reporting injured, stranded, and dead marine mammals to the Service immediately or as soon as clearance procedures allow; and
- submitting quarterly mitigation and monitoring reports, annual reports, and a comprehensive report analyzing all monitoring and Navy-funded research related to SURTASS LFA sonar operations during the five-year period that would be covered by the proposed regulations.

Monitoring measures and clearance times

The proposed rule states that the Navy would monitor the area near the vessel for at least 30 minutes prior to deployment of the SURTASS LFA sonar source. The proposed rule also states that when sonar transmissions have been delayed or suspended because a marine mammal has been detected within the proposed LFA mitigation or buffer zones, active LFA sonar transmissions could resume 15 minutes after the last detection of the animal in those zones by visual observation, passive acoustics, or the active sonar system. For other incidental take authorizations, the Navy has been using a clearance time of 30 minutes, although the activities covered under those other authorizations are different and the same need for constraints may not apply.

When a marine mammal has been sighted in or near a mitigation or buffer zone, the Navy would suspend use of its sonar to protect the animal from injury. A determination as to when it is safe to resume operations must be based either on an observation of the animal outside the mitigation and buffer zones or the assumption that the animal has moved outside those zones based on its behavior and the probability of detecting it if it remained within those zones.

The two key behavioral considerations are (1) the diving patterns of the species of marine mammal observed—how deeply do members of the species dive and how long do they remain submerged—and (2) their behavior at the surface—that is, are they easily detectable because of their movement patterns or are they cryptic and difficult to detect. SURTASS LFA sonar generates low-frequency sound, and the marine mammals most likely to be affected by low-frequency sonar are mysticetes. Other species (i.e., odontocetes) also might be affected, but it appears from the limited number of audiograms collected to date that their hearing sensitivity declines substantially at lower frequencies. Unlike some odontocetes (e.g., sperm whales, beaked whales), mysticetes generally do not dive deeply or for prolonged periods. They certainly may dive for longer than 15 minutes and, therefore, the Commission believes that a 15-minute clearance time is too short. Based on biological considerations alone (i.e., dive patterns), the Commission believes that clearance times should not be less than 30 minutes.

However, clearance times may need to be longer depending on the probability of detecting marine mammals if they remain in the mitigation or buffer zones. Detection probabilities vary by species, environmental conditions, and detection method. If an animal is detected in a mitigation or buffer zone and it dives and then resurfaces within those zones but is not detected, then it would be at risk when sonar transmissions are resumed. So the efficacy of the available monitoring methods also is an important consideration. As is well known from standard marine mammal surveys, visual observers often do not detect marine mammals at the surface. Indeed, the failure to do so results in a detectability or perception bias that is well described in the scientific literature. If the intent is to ensure that marine mammals within the mitigation and buffer zones are protected, then any criteria for resuming sonar operations must account for the detectability or perception bias inherent in the monitoring methods. For that reason, the Commission believes a 60-minute clearance time is more precautionary and, in fact, recommended such a clearance time to the Navy in its 17 October 2011 letter on the SURTASS LFA sonar draft supplemental environmental impact statement/
supplemental overseas environmental impact statement.

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That being said, the Navy could reasonably reduce its clearance times if it can demonstrate that its monitoring methods are sufficiently capable of tracking an observed marine mammal within the mitigation and buffer zones. Given that it has three monitoring methods (visual observation, passive acoustics, and the active sonar system) it should be able to characterize the efficacy of all three methods. If the combination of methods is sufficiently effective at tracking marine mammals in the mitigation and buffer zones, the Navy should be able to make the case that shorter clearance times are reasonable and do not pose an excessive risk of harm to marine mammals that enter those zones. In the extreme, the Navy might be able to make the case that it can track all the animals in those zones and therefore can determine precisely when it is safe to resume operations. The Commission would support a reduction in clearance times if the Navy collects the necessary data and conducts the necessary analyses, and the results confirm that the Navy's monitoring capabilities are sufficiently robust.

Until such time that the necessary studies are completed, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Navy to monitor for 60 minutes before resuming SURTASS LFA sonar transmissions after a delay or suspension related to the sighting of a marine mammal in the LFA mitigation or buffer zones unless the Navy observes the animal leaving those zones. Again, the Commission believes that this clearance time could be reasonably reduced, but that any reductions should be based on a scientific demonstration by the Navy that its monitoring methods are suitably effective.

The proposed rule states that, for post-operational monitoring, the Navy would be required to conduct visual (if during daylight hours, i.e., from 30 minutes prior to sunrise until 30 minutes after sunset), passive acoustic, and active sonar monitoring for 15 minutes after cessation of SURTASS LFA sonar transmissions. The Commission thinks it would be useful to continue observations and data collection for at least 30 minutes after cessation of SURTASS LFA sonar transmissions to determine monitoring effectiveness during that period. A 30-minute period should at least cover one typical dive cycle for mysticetes. Although data collection for a full hour may provide useful information for assessing monitoring effectiveness, the risk to marine mammals should end with the cessation of sonar transmissions. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Navy to monitor for a minimum of 30 minutes after SURTASS LFA sonar transmissions cease using visual observations (if during daylight hours as defined in the proposed regulations), passive acoustics, and the active sonar system.

Please contact me if you have questions concerning the Commission's recommendations or rationale.

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director