

upcoming season will occur, the National Marine Fisheries Service will provide the public a period of 30 days for review and comment on the request.

(c) A notice of issuance or denial of a Renewal of a Letter of Authorization will be published in the **Federal Register** within 30 days of a determination.

§ 216.210 Modifications to Letters of Authorization.

(a) In addition to complying with the provisions of §§ 216.106 and 216.208, except as provided in paragraph (b) of this section, no substantive modification (including withdrawal or suspension) to the Letter of Authorization issued pursuant to §§ 216.106 and 216.208 and subject to the provisions of this subpart shall be made until after notification and an opportunity for public comment has been provided. For purposes of this paragraph, a renewal of a Letter of Authorization under § 216.209, without modification (except for the period of validity), is not considered a substantive modification.

(b) If the Assistant Administrator determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in § 216.200(b), a Letter of Authorization issued pursuant to §§ 216.106 and 216.208 may be substantively modified without prior notification and an opportunity for public comment. Notification will be published in the **Federal Register** within 30 days subsequent to the action. [FR Doc. 99-27578 Filed 10-21-99; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 216

[Docket No. 990927266-9266-01; I.D. 072699A]

RIN 0648-AM62

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Navy Operations of Surveillance Towed Array Sensor System Low Frequency Active Sonar

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Advance Notice of Proposed Rulemaking; request for comment and information.

SUMMARY: NMFS has received a request for a Letter of Authorization (LOA) from the U.S. Navy for the take of small numbers of marine mammals by harassment incidental to Navy operations of Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active (LFA) Sonar. In order to issue an LOA, NMFS must promulgate regulations and determine that these takings will have a negligible impact on the affected species and stocks of marine mammals and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses. NMFS invites comment on the application, and suggestions on the content of the regulations.

DATES: Comments and information must be postmarked no later than November 22, 1999.

ADDRESSES: Comments should be addressed to Donna Wieting, Chief, Marine Mammal Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910-3226. A copy of the application may be obtained by writing to this address or by telephoning one of the contacts listed here (see FOR FURTHER INFORMATION CONTACT). A copy of the draft environmental impact statement (DEIS) for SURTASS LFA sonar may be obtained by contacting Mr. J.S. Johnson, SURTASS-LFA Sonar Program Manager, 901 North Stewart Street, Suit 708, Arlington, VA 22203. Comments on the DEIS will be accepted at this address until October 28, 1999.

FOR FURTHER INFORMATION CONTACT: Kenneth R. Hollingshead (301) 713-2055, ext. 128.

SUPPLEMENTARY INFORMATION:

Background

Section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361 *et seq.*) directs the Secretary of Commerce (Secretary) to allow, upon request, the incidental, but not intentional taking of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and regulations are issued.

Permission may be granted for periods of 5 years or less if the Secretary finds that the taking will have a negligible impact on the species or stock(s) of affected marine mammals, will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses, and regulations are prescribed setting forth the permissible methods of taking and the requirements

pertaining to the monitoring and reporting of such taking.

Summary of Request

On August 12, 1999, NMFS received an application from the U.S. Navy requesting a small take exemption under section 101(a)(5)(A) of the MMPA for the taking of marine mammals by harassment incidental to operation of the SURTASS LFA sonar for a period of time not to exceed 5 years, beginning in FY 2000. SURTASS LFA sonar will operate a maximum of 4 ship systems in the ten geographic operating regions in which SURTASS LFA sonar could potentially operate. There would be a maximum of four SURTASS LFA sonar systems with a nominal maximum of two systems at sea at any one time.

Description of the Activity

The SURTASS LFA sonar system is a long-range, low frequency (between 100 and 500 Hertz) sonar that has both active and passive components. It does not rely on detection of noise generated by the target. The active component of the system is a set of low frequency (LF) acoustic transmitting source elements (called projectors) suspended from a cable from underneath a ship. The projectors are devices that produce the active sound or pulse.

The typical SURTASS LFA sonar signal is not a constant tone, but rather a transmission of various waveforms that vary in frequency and duration. A complete sequence of sound transmissions is referred to as a "ping" and can last for as short as 6 seconds (sec) to as long as 100 sec. The time between pings is typically from 6 to 15 minutes. Average duty cycle (ratio of sound "on" time to total time) can be controlled but is less than 20 percent; typical duty cycle is between 10 and 20 percent.

The passive or listening component of the system is SURTASS, which detects returning echoes from submerged objects, such as submarines, through the use of hydrophones. The hydrophones are mounted on a horizontal array that is towed behind the ship. The SURTASS LFA sonar ship maintains a minimum speed of 5.6 km/hr (3.0 knots).

The Navy anticipates that a nominal, or typical SURTASS LFA sonar deployment schedule for a single vessel would involve about 270 days/year at sea (underway). A typical at-sea mission would occur over a 30-day period, made up of two 9-day exercise segments. Active sonar operations could be conducted up to 20 hrs during an exercise day, although the system would actually be transmitting for only a

maximum of 4 hrs/day (resulting in 432 hrs of active transmission time per year for each SURTASS LFA sonar system in operation based on a maximum duty cycle of 20 percent). The remaining 12 days of the at-sea mission would be spent in transit or repositioning the vessel. In a nominal year there could be a maximum of 9 missions, six of which would involve the employment of SURTASS LFA sonar in the active mode and three of which would employ the SURTASS LFA sonar in the passive mode. Between missions, an estimated 95 days would be spent in port for upkeep and repair. With two vessels in the Pacific-Indian Ocean area and two vessels in the Atlantic Ocean-Mediterranean Sea area, there could be up to 12 operations in each area per year.

At present, only one SURTASS LFA sonar system is operational. A second SURTASS LFA sonar system is expected to be operational in FY 2000. The third and fourth systems are tentatively planned for FY 2003 and FY 2004, but their delivery may be postponed until after FY 2005. With 4 systems, a nominal maximum of two vessels would be at sea at any one time. As a result, under 5-year regulations NMFS would propose to authorize marine mammal harassment takings for 2 SURTASS LFA sonar vessels for FY 2000 through FY 2002, 3 vessels for FY 2003, and 4 vessels for FY 2004.

Affected Marine Mammal Species

In their DEIS analysis and small take application, the Navy excluded from take consideration those marine mammal species that either do not inhabit the areas wherein SURTASS LFA sonar would operate or do not possess sensory mechanisms that allow the mammal to perceive low frequency (LF) sounds. Where data was not available or was insufficient for one species, comparable data for a related species was used, if available. Because all species of baleen whales produce LF sounds, and anatomical evidence strongly suggests that their inner ears are well adapted for LF hearing, all species are considered sensitive to LF sound and at risk from exposure to LF sounds. The ten species of baleen whales that may be affected by SURTASS LFA sonar are: blue (*Balaenoptera musculus*), fin (*Balaenoptera physalus*), minke (*Balaenoptera acutorostrata*), Bryde's (*Balaenoptera borealis*), sei (*Balaenoptera borealis*), humpback (*Megaptera novaeangliae*), northern right (*Eubalaena glacialis*), southern right (*Eubalaena australis*), pygmy right

(*Capera marginata*), and gray whales (*Eschrichtius robustus*).

The odontocetes (toothed whales) that may be affected because they inhabit the deeper, offshore waters where SURTASS LFA sonar might operate include both the pelagic (oceanic) whales and dolphins and those coastal species that also occur in deep water including *Stenella spp.*, Risso's dolphin (*Grampus griseus*), rough-toothed dolphin (*Steno bredanensis*), Fraser's dolphin (*Lagenodelphis hosei*), right-whale dolphin (*Lissodelphis spp.*), *Lagenorhynchus spp.*, *Cephalorhynchus spp.*, bottlenose dolphin (*Tursiops truncatus*), common dolphin (*Delphinus delphis*), Dall's porpoise (*Phocoenoides dalli*), melon-headed whale (*Peponocephala spp.*), beaked whales (*Berardius spp.*, *Hyperoodon spp.*, *Mesoplodon spp.*, Cuvier's beaked whale (*Ziphius cavirostris*), Shepard's beaked whale (*Tasmacetus shepherdi*), Longman's beaked whale (*Indopacetus pacificus*), killer whale (*Orcinus orca*), false killer whale (*Pseudorca crassidens*), pygmy killer whale (*Feresa attenuata*), sperm whale (*Physeter macrocephalus*, *Kogia spp.*), and pilot whale (*Globicephala spp.*).

Potentially affected pinnipeds include: 8 phocid (true seal) species including, the Hawaiian and Mediterranean monk seals (*Monachus spp.*), harbor seals (*Phoca spp.*), and elephant seals (*Mirounga spp.*); 8 species of fur seals (*Arctocephalus spp.*, *Callorhinus ursinus*); and 5 species of sea lions, including the Steller sea lion (*Eumetopias jubatus*) and California sea lion (*Zalophus californianus*).

A description of affected marine mammal species and the criteria used to determine those species that have the potential for taking by harassment are provided and explained in detail in the Navy application and DEIS and need not be repeated here.

Impacts to Marine Mammals

The analysis of potential impacts on marine mammals was developed by the Navy based on the results of a literature review, the Navy's LF Sound Scientific Research Program (LFS SRP), and a complex, comprehensive program of underwater acoustical modeling. To assess potential impact of the SURTASS LFA sonar source on marine mammals operating at a given site, it was necessary for the Navy to predict the sound field that a given marine mammal species could be exposed to over time. This is a multi-part process involving (1) the ability to measure or estimate an animal's location in space and time, (2) the ability to measure or estimate the three-dimensional sound field at these

times and locations, (3) the integration of these two data sets to estimate the total acoustic exposure for each animal in the modeled population, (4) converting the resultant cumulative exposures for a modeled population into an estimate of the risk from a prolonged disruption of a biologically important behavior, and (5) converting these estimates of behavioral risk into an assessment of risk in terms of the level of potential biological removal.

Next, a relationship for converting the resultant cumulative exposures for a modeled population into an estimate of the risk to the entire population of a prolonged disruption of a biologically important behavior and of injury was developed. This process assessed risk in relation to received level (RL) and repeated exposure. The resultant "risk continuum" is based on the assumption that the threshold of risk is variable and occurs over a range of conditions rather than at a single threshold.

Taken together, the LFS SRP results, the acoustical modeling, and the risk assessment, provide an estimate of potential environmental impacts to marine mammals.

The acoustical modeling process was accomplished using the Navy's standard acoustical performance prediction transmission loss model-Parabolic Equation (PE) version 3.4. The results of this model are the primary input to the Acoustic Integration Model (AIM). AIM was used to estimate mammal sound exposures and essentially integrates simulated movements (including dive patterns) of marine mammals, a schedule of SURTASS LFA sonar transmissions, and the predicted sound field for each transmission to estimate acoustic exposure during a hypothetical SURTASS LFA sonar operation. Description of the PE and AIM models, including AIM input parameters for animal movement, diving behavior, and marine mammal distribution, abundance, and density are described in detail in the Navy application and the DEIS and are not discussed further in this document.

Using the AIM model, the Navy developed 31 acoustic modeling scenarios for the major ocean regions (which are described in the application and DEIS). Locations were carefully selected to represent reasonable "worst case" scenarios for each of the three major ocean acoustic regimes where SURTASS LFA sonar would be employed. These acoustic regimes were (1) deep-water convergence propagation zone, (2) near surface duct propagation zone, and (3) shallow water bottom interaction propagation zone. These scenarios represent the condition under

which, on average, the greatest number of animals could be exposed to the greatest number of pings at the highest RLs and were considered the most severe conditions that could be expected from operation of the SURTASS LFA sonar system. Thus, if SURTASS LFA sonar operations were conducted in an area that was not acoustically modeled, the potential effects would almost certainly be less than those obtained from the most similar scenario in the analysis.

Risk Analysis

The Navy interprets the results of the LFS SRP to justify use of unlimited exposure during a mission to 120 dB as the lowest value for risk. Below this level, there is no risk of prolonged biologically significant responses from marine mammals. It is important to note that risk varies with both level and number of exposures.

The Navy calculated the risks for take by injury based on criteria of 180 dB RL, which is a conservative value for the onset of a minor temporary threshold (TTS) shift in hearing (see Ridgway *et al.* (1997)). Ridgway *et al.*'s (1997) measurement at one second duration implies that the TTS threshold for a 100-second signal lies between 182 and 172 dB, depending upon the formula used. The Navy believes that the 180-dB single ping criterion can be considered conservative. However, the RL for serious injury would be much higher, and the marine mammal would have to be much closer to the array than the 2 km (1.1 nm) radius around the vertical array delineating the 180 dB sound field. With three levels of mitigation monitoring for marine mammals (described later in this document), it is unlikely that any marine mammal would get that close before either turning away from the annoyance, or being detected and the SURTASS LFA sonar shut down (see Mitigation). However, because the probability is not zero, the Navy has included this scenario in its authorization request.

Mitigation and Monitoring

SURTASS LFA sonar operations would be conducted to ensure that the sound field does not exceed 180 dB re 1 $\mu\text{Pa}_{\text{rms}}$ (i.e., the zone of potential injury for marine mammals) within 22 km (12 nm) of any coastline, nor in offshore biologically important areas that are outside the 22 km (12 nm) zone during the biologically important season(s) for that particular area.

SURTASS LFA sonar operators would estimate sound pressure levels prior to and during operations to provide the

information necessary to modify operations, including delay or suspension of transmissions, in order not to exceed the sound field criteria. Please refer to the Navy's application for the criteria used to determine biologically important areas.

In order to minimize risks to potentially affected marine mammals that may be present in waters surrounding SURTASS LFA sonar, the Navy will: (1) Conduct visual monitoring from the ship's bridge during daylight hours, (2) use passive (LF) SURTASS LFA sonar to listen for vocalizing marine mammals; and (3) use high frequency (HF) active sonar (i.e., commercial fish finder) to monitor/locate/track marine mammals in relation to the SURTASS LFA sonar vessel and the sound field produced by the SURTASS LFA sonar source array.

Through observation, acoustic tracking and establishment of shut-down criteria, the Navy will ensure that no marine mammals approach the SURTASS LFA sonar source close enough to be subjected to potentially harmful sound levels (inside the 180 dB re 1 $\mu\text{Pa}_{\text{rms}}$ sound field; approximately 2 km (1.1 nm) from the source). The Navy estimates that the probability of detecting a marine mammal within the 180 dB sound field of the source array by at least one of these monitoring methods is estimated to be between 70 and 99 percent. However, nominally, an effectiveness of 80 percent is used in the take calculations. This assumption incorporates the 70 percent effectiveness of the HF sonar, and an additional conservative 5-percent contribution each for visual and passive monitoring. In general, small, solitary marine mammals would be the most difficult to detect, while large whales and dolphin schools would be much easier to detect.

Reporting

During routine operations of SURTASS LFA sonar, technical and environmental data would be collected and recorded. These would include data from visual and acoustic monitoring, ocean environmental measurements, and technical operational inputs. This information would become part of the data required from the Long Term Monitoring (LTM) Program.

Research

The Navy proposes to provide a LTM program to conduct annual assessments of the potential cumulative impact of SURTASS LFA sonar operations on the marine environment, provide the necessary reporting to increase knowledge of the species, and to

coordinate research opportunities and activities. This would include cumulative impact analyses of the annually tabulated injuries (if any) and harassments over the next 5 years.

While research conducted to date is sufficient to assess impacts on marine mammals, it is prudent to continue research over the course of the first 5 years of the Navy's operations of SURTASS LFA sonar.

The purpose of the LTM program would be to continue scientific data collection once SURTASS LFA sonar is deployed.

Conclusions

Based on the scientific analyses detailed in the Navy application and further supported by the DEIS for SURTASS LFA sonar operations, the Navy concludes that the incidental taking of marine mammals resulting from SURTASS LFA sonar operations would be small and have no more than a negligible impact on the affected marine mammal stocks or habitats. This conclusion is particularly supported by the proposed mitigation measures that would be implemented for all SURTASS LFA sonar operations and the proposed LTM program. The former includes geographic restrictions, monitoring and reporting that would result in increased knowledge of marine mammal species. The latter offers means of learning of, encouraging, and coordinating research opportunities, plans, and activities relating to reducing the incidental taking of marine mammals from anthropogenic underwater sound, and evaluating the possible long-term effects from exposing marine mammals to anthropogenic underwater sound.

Information Solicited

NMFS requests interested persons to submit comments, information, and suggestions concerning the Navy's request for a single LOA valid for SURTASS LFA sonar operations in all 10 biogeographic regions, and the structure and content of the regulations to allow takings by LFA sonar operations. NMFS would propose a single set of regulations, effective for a period of time up to 5 years, that would govern incidental takings for LFA sonar operations. All commenters are requested to review the DEIS and/or the application prior to submitting comments and, because of its brevity, not submit comments solely on this **Federal Register** document.

NMFS is also requesting comment on an alternative proposal to issue annual LOAs to each vessel as it becomes operational. Based upon applications for annual LOAs, individual vessel LOAs

may specify which of the 10 operating areas were scheduled for the upcoming year. For security reasons, locations and times for certain operations may be classified and not provided to the public.

If NMFS proposes regulations governing the taking, interested parties

will be provided a 45-day comment period on the content of the proposed rule.

This action has been determined to be not significant for purposes of Executive Order 12866.

Dated: October 15, 1999.

Andrew A. Rosenberg,
*Deputy Assistant Administrator for Fisheries,
National Marine Fisheries Service.*

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