

MARINE MAMMAL COMMISSION
4340 EAST-WEST HIGHWAY, ROOM 905
BETHESDA, MD 20814

10 February 2006

Mr. J. S. Johnson
ATTN: SURTASS LFA Sonar EIS Program Manager
4100 Fairfax Drive, Suite 730
Arlington VA 22203

Dear Mr. Johnson:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Draft Supplemental Environmental Impact Statement for the Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) Sonar, dated November 2005 (the DSEIS). The Commission provides these comments and recommendations on those sections of the document related to the assessment of the impacts of the proposed action on marine mammals.

The proposed action is to continue training operations using SURTASS LFA sonar systems on up to four ships and to expand the operating areas in the Pacific Ocean basin. The stated purpose of the DSEIS is fourfold:

- To address deficiencies in National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and Marine Mammal Protection Act (MMPA) compliance found by the U.S. District Court for the Northern District of California in its 26 August 2003 order and opinion concerning a lawsuit brought by several environmental groups;
- To provide information necessary for application to the National Marine Fisheries Service for a new five-year incidental harassment rule (2007-2012) that would provide for incidental takes of marine mammals in accordance with the MMPA, taking into account legislative changes in the Act made by Congress in response to a Navy request and the need to employ two additional SURTASS LFA sonar systems;
- To analyze potential impacts for LFA upgrades; and
- To provide additional information and analyses pertinent to the proposed action.

The DSEIS evaluates a no-action alternative and four alternatives. Alternative 1 is, in essence, extension of the current monitoring and mitigation measures to additional operating areas. Alternative 2 would continue the current monitoring and mitigation measures and provide a number of additions to the currently designated offshore biologically important areas (OBIA) where sound exposure levels are limited to no more than 180 dB. Alternative 3 would further restrict operations to limit sound exposure levels to no more than 180 dB within 46 km (25 nm) of any coastal area,

rather than the 22 km (12 nm) “stand-off” range currently in effect. Alternative 4 would integrate alternatives 2 and 3 by combining the additional OBIA in alternative 2 with the increased standoff distance in alternative 3. Alternative 2 is identified as the preferred alternative. Under all of the alternatives, each ship would operate its SURTASS LFA sonar system no more than 72 hours on a 49-day mission, for a maximum of 432 hours per year.

With regard to marine mammals, the DSEIS concludes that alternative 2 will ensure that the envisioned operations of the four LFA sonar systems will not have biologically significant impacts on any marine mammal species or population stock. It also concludes that use of small boats and aircraft for pre-operational surveys would not be practicable and could both increase harassment of marine mammals and jeopardize the safety of those conducting the surveys.

The Marine Mammal Commission concurs that carrying out small boat or aerial surveys immediately before and during SURTASS LFA sonar operations in the various offshore training areas would not be a practicable mitigation option. However, the draft statement’s conclusion that the proposed operations are unlikely to have biologically significant impacts on any marine mammal species or stock is based primarily on two assumptions:

1. Behavioral responses to the sonar transmissions would be temporary (of biologically insignificant duration), and exposure to received levels at and below 180 dB would not have biologically significant effects on the behavior of any marine mammal; and
2. The mitigation and monitoring measures described in section 5 of the DSEIS will reduce, to a negligible likelihood, the risk that any marine mammal would be exposed to received levels greater than 180 dB.

For the reasons explained below, the Commission questions whether these assumptions are valid. Further, from the information provided in the DSEIS, the Commission is unable to make a reasoned judgment as to whether extension of the current mitigation and monitoring measures, as outlined in section 5, would ensure that the proposed action has biologically insignificant impacts on marine mammals. Also, for the reasons explained below, the Commission questions the conclusion that alternative 4 would pose a greater risk of harassing marine mammals than would alternative 2, the preferred alternative.

Validity of Conclusions concerning the 180-dB Threshold Response

In its 27 October 1999 comments on the original DEIS concerning the SURTASS LFA sonar, the Commission pointed out that the 180-dB “impact threshold” would be valid only if its underlying assumptions were valid. It appears from the DSEIS that substantial uncertainty remains concerning the validity of some of those assumptions. Thus, there is still a high degree of uncertainty as to whether preventing the exposure of marine mammals to LFA sonar sounds louder than 180 dB will, in fact, ensure that the proposed action does not have biologically significant

impacts on any species or stock. The DSEIS references the 2005 National Research Council (NRC) report, *Marine Mammal Populations and Ocean Noise: Determining When Noise Causes Biologically Significant Effects*. That report concludes that an activity that adversely affects the growth, survival, or reproduction of an individual marine mammal can potentially have a biologically significant population-level effect on small populations. Further, the DSEIS cites a number of case studies in which marine mammals were observed to respond to anthropogenic sounds at received levels far below 180 dB (e.g., Dahlheim et al. 1984, Frankel and Clark 2000, Erbe 2002). It contends that such responses would have been biologically insignificant because most were of limited duration and no evidence of harmful effects was found. As an example, while the DSEIS acknowledges that some masking of cetacean vocalizations by the LFA sonar transmissions is likely to occur, it concludes that the effects would be temporary and biologically insignificant because the sonar transmissions are infrequent and of limited duration (6 to 100 seconds).

Such a conclusion would be justified if (1) the effectiveness of the vocalizations used for navigation, communication, attracting mates, defending territories, etc., were maintained despite masking during the longest sonar ping; and (2) repetition of single-ping masking were not to occur over large areas for biologically significant periods. Available information concerning the functions and effective durations of various types of vocalizations is insufficient to be confident that all short-term masking would have biologically insignificant effects on growth, survival, and reproduction. Conversely, available information is sufficient to conclude that many vocalizations are effective at received levels substantially less than 180 dB and that masking therefore could occur over large areas and be repeated regularly over the course of each training exercise. Whether the repetition could compromise the effectiveness of any vocalizations is unknown. Thus, because of this uncertainty, a precautionary approach would conclude that exposure of marine mammals to LFA sonar sounds of less than 180 dB could have biologically significant effects.

The Marine Mammal Commission recommends that the final supplemental EIS (FSEIS) should (1) acknowledge the aforementioned uncertainties concerning the effectiveness of the 180-dB impact threshold to mitigate impacts on marine mammals and (2) provide a description of the research being done and planned to address the uncertainties.

Effectiveness of the Mitigation and Monitoring Measures

Section 5.2 of the DSEIS describes the visual and the passive and active acoustic monitoring that has been required and that would be continued as part of the proposed action to prevent injury to marine animals when employing the SURTASS LFA sonar. It indicates that all visual sightings and passive and active acoustic contacts are logged and that sonar transmissions are suspended if marine mammals or sea turtles are detected in or approaching the "LFA mitigation zone." Further, it indicates that logs of all of the visual sightings and both the passive and active acoustic contacts "are provided as part of the LTM [Long Term Monitoring] to monitor for potential long-term effects." There is no indication of what constitutes the LTM or to whom the logs are provided. Likewise, there is no indication of where and how the data are archived and

analyzed and whether the monitoring has provided any indications of either immediate (short-term) behavioral or other effects or possible long-term or cumulative effects.

Tables 4.4-2 to 4.4-10 on pages 4-43 to 4-51 of the DSEIS provide estimates of the percentages of marine mammal stocks potentially affected in the course of 19 LFA sonar operations in four different areas. Although these estimates are of interest as to the species and numbers of animals possibly affected by the operations, they provide no indication of, or basis for judging, the effectiveness of the monitoring and mitigation measures. In this regard, we assume that the data logs contain information on such things as (1) the track line of the ship during LFA sonar operations; (2) the species, numbers, and group sizes of marine mammals observed visually during each operation; (3) the location (distance and bearing) of the animals relative to the ship when first sighted; (4) the movements of the animals relative to the ship during each encounter (e.g. any indications that the animals were being attracted to, moving away from, ignoring, or avoiding the ship); (5) the activities of the animals when first sighted (e.g., swimming, diving/feeding, milling) and any changes in activities that were observed subsequently; (6) the nature (e.g., call type), number, frequency, bearings, etc., of vocalizations detected passively and any changes that occurred during operations; (7) the numbers, locations, species, and activities of animals detected with the HF/M3 sonar; (8) any apparent response of animals to the HF/M3 sonar; and (9) the nature and duration of any suspension or other alteration of operations made in response to a marine mammal observation.

The Navy has invested millions of dollars in developing databases that compile information from many marine surveys into comparable GIS-based systems. The Living Marine Resource Information System (LMRIS) and Ocean Biogeographic Information System – Spatial Ecological Analysis of Megavertebrate Populations (OBIS SEAMAP) databases are designed to provide access to information on a wide variety of biological and physical conditions. We realize that work on the databases is continuing and that they are not yet fully operational. Nevertheless, assuming that the logs contain the above types of information, the Marine Mammal Commission recommends that the Navy (1) assure that the information from the monitoring is included in the LMRIS and OBIS SEAMAP systems and (2) analyze and include the data in the FSEIS and that the analyses include an empirical evaluation of the effectiveness of the monitoring and mitigation measures. The Commission also recommends that copies of the data recording forms be included in the FSEIS. Further, if it is not already being done, the Commission recommends that the Navy and the National Marine Fisheries Service review the monitoring data at least annually to identify possible marine mammal “hot spots” that should be avoided or be considered for designation as OBIAAs. If such data are not being collected, the Marine Mammal Commission recommends that the FSEIS indicate why this is the case and that the Navy begin collecting and analyzing relevant information as described above.

Comparison of the Relative Risks of Alternatives 1, 2, 3, and 4

Section 4.7.6 of the DSEIS compares the 22 km (12 nm) coastal standoff range in alternatives 1 and 2 with the 46 km (25 nm) coastal standoff range in alternatives 3 and 4 in terms of

Mr. J. S. Johnson
10 February 2006
Page 5

their potential to adversely affect marine animals. As illustrated in Table 4.7.2 and Figure 4.7.1, it concludes that, because the ocean area exposed to sound levels between 155 and 165 dB would be substantially greater for the 25 nm standoff than for the 12 nm standoff, alternatives 3 and 4 would have greater potential to adversely affect marine animals than alternatives 1 and 2. This conclusion would apply with particular force to marine mammals that inhabit shelf-break habitat. The validity of this conclusion depends on two assumptions: (1) that all, or at least a major portion, of the LFA sonar operations would be carried out in coastal areas and therefore the zones of potential influence would be as portrayed in Figure 4.7-1; and (2) that exposure of marine mammals to received levels below 165 dB would pose no more than insignificant impacts.

There is no indication in the DSEIS of the numbers or proportions of operations to be conducted in offshore vs. coastal areas. If a large proportion of the operations is expected to occur beyond the 25 nm standoff, the conclusion is moot. If, as the DSEIS assumes, exposure to received levels of less than 180 dB poses no more than negligible impacts on marine mammals, then the conclusion is also moot. In the Commission's view, alternative 4 offers greater protection to marine mammals than alternative 2 unless most or at least a major portion of the operations are to be conducted between 12 and 25 nm from the coast. If operations inside the 25-nm standoff range are considered essential for training purposes, the Navy should say so. Before concluding that the additional standoff range is detrimental to marine mammals, the Navy needs to better explain where the training will occur relative to coastlines.

Please contact me if you have questions concerning these comments and recommendations. The Commission will also comment on the Navy's application for incidental harassment regulations when the National Marine Fisheries Service considers and distributes it.

Sincerely,

A handwritten signature in black ink, appearing to read "David Cottingham", with a long horizontal flourish extending to the right.

David Cottingham
Executive Director