

MARINE MAMMAL COMMISSION
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23 May 2008

Naval Facilities Engineering Command, Southwest
Attention: SOCAL EIS Project Manager (Code REVPO)
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The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS) provided by the Department of the Navy to evaluate its Southern California Range Complex (SOCAL) activities (73 FR 18522). The DEIS analyzes the environmental effects of three alternatives (No Action/Continued Action, Alternative 1 Increased Activity, and Alternative 2 Increased Activity [preferred]) for a wide range of antisubmarine warfare, mine warfare, gunnery, bomb and missile exercises, live-fire shore-landing exercises, and more within the more than 120,000 square nautical miles (411,600 km²) of the SOCAL range complex. The Commission will respond separately to a corresponding application for a Letter of Authorization (LOA) under the Marine Mammal Protection Act (73 FR 20918).

RECOMMENDATIONS

The Marine Mammal Commission recommends that the Navy—

- rename the “No Action” alternative in this DEIS to a term that is reflective of the actual level of activity and associated risks;
- augment its risk analysis in Appendix F to provide all the information needed to evaluate and understand the analyses of those risks, particularly the accumulation of energy from multiple pings and the distribution of that energy across depth bins;
- develop and implement a plan to validate monitoring performance before beginning operations under the approved final EIS and LOA, modify its criteria for resuming full use of operational sonar following a power-down or shutdown because of a marine mammal sighting, and provide follow-up data on the cost-effectiveness of such mitigation efforts;
- remove the mine-countermeasures range on Tanner Bank from the SOCAL DEIS and address it as a separate action when adequate detailed supporting information can be provided; and
- elaborate on the specific details of the Marine Species Monitoring Plan, including when it will be initiated, anticipated levels of effort, external review procedures, reporting milestones with descriptions of anticipated work products, and the manner in which those reports will be used to inform and update risk assessment and mitigation efforts.

RATIONALE

Revisions to the DEIS are recommended in the following areas.

No-Action Alternative: As in previous environmental analyses, the Navy uses the term “No Action” in this DEIS to mean the alternative of continued activity at the current level of effort. The Navy has argued that “No Action” is the appropriate term because “no action” is taken to change the existing level of effort. We remain concerned that this term may be confusing and misleading because No Action typically refers either to the proposed risk-producing actions not being undertaken at all or because the level of action is the same as that under an existing, approved management plan, which is not the case. To simplify an already complex task, the Marine Mammal Commission recommends that the Navy rename the “No Action” alternative in this DEIS to a term that is reflective of the actual level of activity and associated risks.

Generation of Sound Exposure Numbers: The Marine Mammal Commission commends the Navy and the National Marine Fisheries Service for their considerable efforts to develop clear, scientifically based risk criteria despite considerable unknowns. However, the DEIS (Chapter 3 and Appendix F) describes only parts of the modeling/analytical process and required data. As a result, we are not able to follow and verify the calculations of exposure risk and to reconcile input (sound production) and outcomes (exposures). For example, we were not able to understand how multiple pings of sonar were translated into exposure levels for marine mammals that are distributed both geographically and throughout the water column. The exposure function is particularly difficult to understand as it involves a potentially large zone of influence in which sound levels may not be uniformly distributed, horizontally or vertically. The estimation of exposure levels by depth was further confounded because the bins used to characterize sound levels were different than those used to model the depth distribution of marine mammals (which also varied by species). Any computational shortcuts or assumptions used in these analyses of dose levels were not described in the DEIS.

Because the risk assessment provides the primary basis for evaluation of and selection among alternatives, the Marine Mammal Commission recommends that the Navy augment its risk analysis in Appendix F to provide all the information needed to evaluate and understand the analyses of those risks, particularly the accumulation of energy from multiple pings and the distribution of that energy across depth bins. Doing so is necessary to reconcile the estimated number of takes by Level A and Level B harassment based on Navy sound production patterns and patterns of marine mammal distribution and density, both of which are complex in time and space.

Monitoring and Mitigation: The Marine Mammal Commission also commends the Navy’s commitment to refining existing monitoring and mitigation capabilities, such as passive acoustic monitoring, and to developing new capabilities for future use. Such investment indicates the Navy’s sincere commitment to reducing environmental risk from its activities and represents a substantial contribution to national marine environmental stewardship goals. The Marine Species Monitoring Plan (page 5-16) is an example of such commitment that will generate additional biological data to document long-term trends and inform efforts to plan subsequent exercises.

With its many capabilities, the Navy is in a position to contribute meaningfully by conducting additional studies to assess the effectiveness of mitigation. Such performance verification procedures are a standard Navy process for many of its tactical and personnel safety systems, are cost-effective, and can be performed in a matter of weeks or months. The Navy's most recent SURTASS LFA EIS included such performance analyses for its monitoring processes. Similar analyses are warranted to evaluate such critical mitigation measures as watchstander training effectiveness and probability of detecting various marine species of concern and the effectiveness of night vision and passive acoustics, as included in the monitoring protocol. Performing such verification and validation tests is essential for determining whether the Navy is, in fact, being realistic in its claims regarding its proposed mitigation efforts.

In previous comments to the Navy, we suggested that the criteria for resuming sonar use or powering up following a shutdown or reduction is not sufficiently precautionary, most especially with respect to the criterion of ship travel. The current criteria for moderating operations are (1) an observed marine mammal is seen leaving the area (which rarely occurs), (2) it is not seen for 30 minutes (which often happens even if it is not a deep diver because successive surfacings are not always seen), or (3) the ship travels 2,000 yards beyond the point at which shutdown or a source level reduction was initially required. We believe this third criterion may allow resumption of sonar too soon after a sighting. A safer course of action might be to adopt a simple rule of 30 minutes for most marine mammals and 60 minutes for deep divers like sperm and beaked whales unless the animal is resighted at a safe range before that time. If the Navy believes that such simple criteria will result in too much lost training time, a six-month or one-year trial could be conducted. The burden imposed by this requirement could then be evaluated after collection of substantive data to determine actual costs and the practicality of this measure.

For these reasons, the Marine Mammal Commission recommends that the Navy develop and implement a plan to validate monitoring performance before beginning operations under the approved final EIS and LOA, modify its criteria for resuming full use of operational sonar following a power-down or shutdown because of a marine mammal sighting, and provide follow-up data on the cost-effectiveness of such mitigation efforts.

Tanner Bank: The DEIS suggests that the Navy may add a mine-countermeasures range within the Tanner Bank area. The biological importance of Tanner Bank is well documented, and any plans to increase naval activity in that area should be carefully weighed against the option of increasing the use of existing countermeasure sites or placing the new site elsewhere where it would have the least possible impact. The SOCAL DEIS provides no coordinates or mapping of the proposed inert mine field within Tanner Bank; nor is there sufficient discussion of the specific likely impact of mine-countermeasures activity. The text refers to Figure 3.4-3, but the banks are not shown on that map, and in a figure that does provide the location of the banks (Figure 1-3), the label for Tanner Bank is misplaced by about 20 nautical miles. The expansion of the SOCAL Offshore Acoustic Range into that area provides an opportunity to better monitor the site at all times, but this aspect of the cost/benefit equation also has not been considered in the DEIS. The prudent and safe course of action is to exclude the proposed Tanner Bank mine-countermeasures exercise range from this DEIS and address it in a separate, independent analysis. For these reasons, the Marine Mammal

Commission recommends that the Navy remove the mine-countermeasures range on Tanner Bank from the SOCAL DEIS and address it as a separate action when adequate detailed supporting information can be provided.

DETAILED COMMENTS

The Marine Mammal Commission also offers the following detailed comments and questions to enhance the SOCAL DEIS.

- The label for Tanner Bank is considerably displaced to the west in Figure 1-3, which makes subsequent discussions of important topics, such as the installation of a mine-countermeasures exercise area, difficult to follow.
- The statement on page 2-16 that “the Navy has been operating in the SOCAL Range for over 70 years” is a misleading rationale for justifying the environmental risk from current activities. The types of equipment and the type and tempo of training have changed appreciably over that time. In fact, one could probably document changes within the last five years or less, consistent with changing mission needs and the Navy’s strategic approach to addressing those needs.
- Some of the descriptions of baleen whale species, beginning with blue whales on page 3.9-2, state that there is no information on their hearing ability, even though the information provided in Appendix F provides a well-referenced and properly reasoned explanation for why we may reasonably consider them infrasound specialists for the purpose of this risk analysis.
- Chapter 3.9.7 and Chapter 5 are unnecessarily redundant regarding risk thresholds, risk estimation, and mitigation of risk. The DEIS could be shortened considerably without loss of information by eliminating the redundancy.
- The criteria on page 3.9-90 to initiate additional planning and monitoring effort for beaked whales are too speculative and too restrictive to offer the kind of assurance implied. A number of factors have been suggested as possible contributors to the likelihood of stranding, including steeply sloping bathymetry near shore, multiple sonars, a possible strong and deep surface duct, and bottom terrain forming a channel or embayment. However, it is not clear that all these factors are necessary for a stranding to occur. The inclusion of highly speculative and exact numbers for shore steepness, number and duration of multi-ship sonar operations, and dimensions for a “safe” versus “unsafe” bay or channel suggests misleading confidence in our ability to predict and prevent such strandings. The presence of beaked whales is well documented in many parts of the SOCAL range, including areas that do not meet the listed habitat criteria. Typical antisubmarine warfare engagements may involve one or more surface vessels entering a bay or channel or near-shore waters where surface ducts are relatively common. These ducts can strongly affect sonar propagation with important tactical and environmental consequences. All of these factors should be sufficient to invoke additional caution in these exercises. The assumption that one only need be concerned when all of the above conditions are met, which is unlikely in the SOCAL area, is inconsistent with the Navy’s own analyses of historical strandings in Appendix F. In those analyses, the Navy

emphasized that it was impossible to determine the exposure levels during the events because it was not known where the animals were or when and how they reacted in such a way that stranding resulted. In the Bahamas stranding, there were never more than two ships operating sonars at any one time, and the ships did not spend all of the time within 10 miles of each other, and certainly not for six or more hours. In most of the other strandings covered in Appendix F, the exact number of ships, their relative locations, and the number that were actively pinging are not known—or at least have not been publicly reported. This information is enough to preclude any expression of confidence that more than three ships are required to produce the effect, that they must be operating in the area for more than six hours, and that this activity must be in areas of very strictly defined geography for a stranding to occur. Again, under the conditions likely to occur in the SOCAL range, we believe that extra caution is needed in planning and monitoring.

- The use of passive acoustics to detect marine mammals is described in Chapter 5 (page 5-8) and Chapter 3.9.10.1.2 (page 3.9-89). The information does not describe the training and capability of personnel to detect marine mammal sounds and recognize them as such, as is provided from visual watchstander training. The DEIS also does not describe how personnel reconcile competing duties for tactical monitoring or how the passive acoustic information is incorporated into the mitigation decision process. The DEIS also does not provide information on the detection range, localization capability, or frequency bandwidth of the sensors, which is required to evaluate the effectiveness of the passive acoustic sensor. Is it possible, for example, to determine range and bearing to a detected sound or is detection used simply to alert visual watchstanders?
- The Navy's development of a Marine Species Monitoring Program is commendable but should be described in greater detail. Such information will provide a basis for judging the quality and utility of the program in determining the effects of various Navy activities. The idea that the program will only be reviewed by Navy biologists raises concerns regarding accountability and the actual substantive value that might be provided by this effort, should it in fact occur. We strongly encourage the Navy to incorporate a more definite plan into the DEIS and to provide for some form of external expert review and open sharing of data in a timely manner. If the program is implemented, the data will be of great value, not only to verify and improve Navy risk assessment and mitigation but to manage other human activities exerting a cumulative effect on marine species in the region (e.g., the cumulative impacts of urban wastewater discharge, fisheries impacts, shipping and other human activities exerting a cumulative impact on the Southern California Bight). For these reasons, the Marine Mammal Commission recommends that the Navy elaborate on the specific details of the Marine Species Monitoring Plan, including when it will be initiated, anticipated levels of effort, external review procedures, reporting milestones with descriptions of anticipated work products, and the manner in which those reports will be used to inform and update risk assessment and mitigation efforts.
- The Navy has made a significant investment in research on the effects of noise on marine mammals but could do more by sponsoring additional investigations of ongoing and planned research activities and the methods to improve risk assessment or risk reduction. For example, the Effects of Sound on the Marine Environment (ESME) program is intended to

- improve modeling of risk, but it is not clear that the Navy plans to evaluate the success of this program or promote its implementation if it is found to be effective.
- The discussion of cumulative effects (Chapter 4) is typical of most National Environmental Policy Act documents. It lists other effects that animals in the region may encounter without offering much depth of analysis as to the cumulative effects of fishery bycatch and naval training, for example. The shortcomings of the cumulative effects analysis are exacerbated by the decision on page 1-14 to not include other Navy activities within or adjacent to the activities and area covered by this DEIS. The Commission believes that some level of discussion about the nearby Point Mugu Sea Range activities and activities associated with San Nicolas Island or Camp Pendleton merit discussion in Chapter 4. Many of the affected animals using the SOCAL range area also are likely to use the area around San Nicolas Island or north of SOCAL in Point Mugu or elsewhere and incur cumulative sonar exposures or cumulative risk from explosives use, vessel traffic, and other naval activities. Although it may not be possible to quantify with confidence activities that have not yet been analyzed to the level apparent in the SOCAL DEIS, the Navy should at least acknowledge the additional risk of exposure from naval activities elsewhere within the migratory range or habitat of marine mammals in this region.
 - The subject of post-event reports is unevenly treated. On page 5-10 the specific information to be included in a post-event report to the National Marine Fisheries Service is detailed for one type of activity, but post-event reporting for most, if not all, other activities is either not described or is inadequate. These reports have great potential value to the Navy, regulators, and the interested public. They may elucidate the effectiveness of monitoring, they may document the burden of some mitigation measures now considered “easy” to implement, and they may confirm or suggest areas of improvement for predictive models of animal abundance and risk. Yet the DEIS does not contain a clear requirement for post-event reports, with the possible exception of sighting of dead or stranded animals and the SINKEX report. For an emerging environmental risk like underwater noise, accountability and documentation processes such as post-event reports are critical to resolving the currently divergent opinions about the actual risk of noise, the best way to effectively detect and mitigate acoustic effects, and the actual cost to naval readiness or other sound-producing activities from these newly implemented monitoring and mitigation activities.
 - The data on pinniped abundance, pup production and other related data seemed less current than data for most other species. Most pinniped sections in Appendix F reference data from the 1997–1998 El Nino period or surveys dated no later than 2001. If in fact there have been no systematic surveys since 2001, then general population assessments like the NMFS stock assessment reports should perhaps be included in the density estimates. Some species, like elephant seals and California sea lions, have continued to experience a steady and strong rate of population increase since 2001, resulting in considerably higher numbers throughout their range, including the Southern California Bight.
 - The use of a single sound velocity profile for the entire SOCAL region (Appendix F-209) does not seem realistic or necessary.

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We have tried to keep our recommendations within the demonstrated capabilities of the Navy. We hope that our comments prove beneficial to the development of the final EIS and request for an LOA under the Marine Mammal Protection Act. Please contact me if you have questions about any of our recommendations or comments.

Sincerely,



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Executive Director

Cc: RADM Larry Rice, CNO N45
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