



MARINE MAMMAL COMMISSION

18 November 2010

Mr. P. Michael Payne, Chief
Permits, Conservation, and Education Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226

Dear Mr. Payne:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by the U.S. Navy seeking authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act to take small numbers of gray whales, bottlenose dolphins, California sea lions, and harbor seals by Level B harassment. The taking would be incidental to military training operations to be conducted at the Silver Strand Training Complex, California, from November 2010 to November 2011. The Commission also has reviewed the National Marine Fisheries Service's 19 October 2010 *Federal Register* notice (75 Fed. Reg. 64276) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service—

- require the Navy to revise the density estimates and subsequent number of takes to reflect accurately the densities presented in the references or provide a reasoned explanation for the densities that were used;
- require the Navy to conduct an external peer review of its marine mammal density estimates, the data upon which those estimates are based, and the manner in which those data are being used;
- approve the authorization request contingent on the requirement that the Navy first use location-specific environmental parameters to re-estimate safety zones and then use in-situ measurements to verify and, if need be, refine the safety zones prior to or at the beginning of pile driving and removal;
- before issuing the authorization, require the Navy to use consistent methods for rounding “fractional” animals to whole numbers to determine takes from underwater detonations and pile driving and removal and re-estimate marine mammal takes using the same methods for all proposed activities;
- require the Navy to monitor for at least 30 minutes before, during, and at least 30 minutes after all underwater detonation and pile-driving and pile-removal activities;
- require the Navy to take steps to ensure that the safety zones for pile driving and removal are clear of marine mammals for at least 30 minutes before activities can be resumed after a shutdown;

- pending the outcome of an exploration of options to assess the efficacy of soft-starts during pile driving and removal, require the Navy to make observations during all soft-starts to gather the data needed to analyze and report on the effectiveness of soft-starts as a mitigation measure;
- condition the authorization, if issued, to require suspension of exercises if a marine mammal is seriously injured or killed and the injury or death could be associated with those exercises, and, if additional measures are unlikely to reduce the risk of additional serious injuries or deaths of marine mammals to a very low level, require the Navy to obtain the necessary authorization for such takings under section 101(a)(5)(A) of the Marine Mammal Protection Act before continuing the training exercises; and
- ensure that the discrepancies within the application and the Service's *Federal Register* notice are corrected and addressed in the incidental harassment authorization.

RATIONALE

The Navy is planning year-round training exercises at the Silver Strand Training Complex in the vicinity of San Diego Bay. The exercises would involve underwater detonations in waters up to 30 m (98 ft) in depth using charges of up to 13 kg [29 lbs] net explosive weight. Some exercises would consist of up to eight sequential detonations separated by a 10-sec or 30-min delay. In addition, the Navy plans to conduct elevated causeway system training exercises involving the installation and removal of 101 24-in hollow steel piles using impact and vibratory hammers. Pile driving and removal would occur during a 13-day period, 24 hours per day. In the course of the year, the Navy plans to conduct 373 underwater detonation and 4 pile-driving and pile-removal training exercises. It also would conduct other training exercises including amphibious vessel and vehicle maneuvering, beach landings, causeway insertions onto the beach, swimming, land demolitions, transfer of fluids from vessel to shore, and helicopter overflights.

The Service's *Federal Register* notice states that the Navy is requesting authorization to take by Level B harassment four marine mammal species incidental to underwater detonations and pile driving and removal. The Navy is not requesting authorization to take any marine mammal by Level A harassment or mortality. The Service preliminarily has determined that the Navy's training activities involving underwater detonations and pile driving and removal would have a negligible impact on the affected species and stocks. The estimated numbers of marine mammals that could be taken by harassment are based on the assumption that the Navy will implement the proposed mitigation and monitoring measures, thereby having the least practicable adverse impact on marine mammals and their habitat.

Marine Mammal Density Estimates

In previous letters, the Commission has noted that the Navy, in its applications and related documents, has done a commendable job of reviewing the existing literature on marine mammal density, distribution, behavior, and habitat use for the areas under consideration. However, both the application and the *Federal Register* notice appear to be based on density estimates that are

inconsistent with, and often an order of magnitude less than, the densities presented in the references. In general, the densities for California sea lions, harbor seals, and gray whales in Table 3–1 of the application are inconsistent with Table 3.9–3 of the reference (Department of the Navy 2008). In the case of bottlenose dolphins, the reference (National Center for Coastal Ocean Science 2005) does not explicitly provide density estimates for this species and should not be cited as a direct source for these estimates. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Navy to revise the density estimates and the estimated number of takes to reflect accurately the densities presented in the references or provide a reasoned explanation for the densities that were used.

Further, the Commission has expressed concern that, although the Navy takes full advantage of abundance, distribution, and related information in the marine mammal literature, the manner in which it converts that information to density estimates has not been peer-reviewed and, therefore, fails to include one of the main elements of the scientific process. Because risk analyses and take estimates not only depend on the data that are evaluated but also on the manner in which those data are used, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Navy to conduct an external peer review of its marine mammal density estimates, the data upon which those estimates are based, and the manner in which those data are being used.

Safety Zones and Take Estimates

The application used a practical spreading loss equation and empirical measurements of propagation loss from impact pile driving during a dock repair project in Rodeo, California, and during a wharf repair project in Martinez, California (California Department of Transportation 2009), as the basis for setting the proposed safety zones. However, propagation of sound is dependent upon various location-specific environmental parameters including sound speed profiles, surface ducts, wind speed, substrate type and water depth, and hammer type and size. The Marine Mammal Commission therefore recommends that the National Marine Fisheries Service approve the authorization request contingent on the requirement that the Navy first use location-specific environmental parameters to re-estimate safety zones and then use in-situ measurements to verify and, if need be, refine the safety zones prior to or at the beginning of pile driving and removal.

As indicated in the application, the “conservative business rule” for rounding up the daily fractional animal exposures from pile driving and removal is not consistent with the business rule for rounding fractional animal exposures from underwater detonations (i.e., round down for fractional exposures less than or equal to 0.49 animals and round up for exposures greater than or equal to 0.5 animals). In addition, the marine mammal takes associated with pile driving and removal estimated using the conservative business rule do not yield the takes presented in Table 6–6 of the application or Table 6 of the *Federal Register* notice, at least for California sea lions. Therefore, the Marine Mammal Commission recommends that, before issuing the authorization, the National Marine Fisheries Service require the Navy to use consistent methods for rounding “fractional” animals to whole numbers to determine takes from underwater detonations and pile driving and removal and re-estimate marine mammal takes using the same methods for all proposed activities.

Mitigation and Monitoring Measures

The Service's *Federal Register* notice does not consistently specify for each type of underwater detonation or pile driving and removal activity the timeframe associated with the proposed pre- and post-mitigation monitoring or shutdown procedures. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Navy to monitor for at least 30 minutes before, during, and at least 30 minutes after all underwater detonation and pile-driving and pile-removal activities. In addition, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Navy to take steps to ensure that the safety zones for pile driving and removal are clear of marine mammals for at least 30 minutes before activities can be resumed after a shutdown.

As the Marine Mammal Commission has noted in previous correspondence, the effectiveness of soft-starts as a mitigation measure has yet to be empirically verified. Such verification may require not only collecting opportunistic data but also designing and conducting studies to test specific hypotheses regarding the utility of soft-starts and analysis of responses of the various species encountered. For those reasons, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Navy to make observations during all soft-starts to gather the data needed to analyze and report on the effectiveness of soft-starts as a mitigation measure. Collecting such data and the resulting analyses would provide a scientific basis for relying on this particular mitigation measure. The Commission would be pleased to discuss with the Service the collection and analysis of such data and the design of experiments to promote a better understanding of the utility and shortcomings of soft-starts as an effective mitigation measure.

Level A Harassment and Mortality

The Navy is not seeking authorization to take any marine mammal by serious injury or mortality. Therefore, as proposed by the Service, the incidental harassment authorization should require the Navy to notify the Service immediately, or as soon as clearance procedures allow, if an injured or dead marine mammal is found during or shortly after, and in the vicinity of, any Navy training activity involving underwater detonations or pile driving and removal. The Marine Mammal Commission recommends that the National Marine Fisheries Service condition the authorization, if issued, to require suspension of an activity if a marine mammal is seriously injured or killed and the injury or death could be associated with that activity. The injury or death should be investigated to determine the cause, assess the full impact of the exercise (e.g., the total number of animals involved), and determine whether and how exercises can be modified to avoid additional injuries or deaths. Full investigation of such incidents is essential to provide information regarding potential effects to marine mammals from underwater detonations or pile driving and removal. If additional measures are unlikely to reduce the risk of additional serious injuries or deaths of marine mammals to a very low level, the Service should require the Navy to obtain the necessary authorization for such takings under section 101(a)(5)(A) of the Marine Mammal Protection Act before continuing the training exercises.

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Discrepancies within the Application and the *Federal Register* Notice

Discrepancies within both the application and the Service's *Federal Register* notice were noted in emails exchanged between the Commission and the Service. In response, the Navy made several clarifications and agreed to work with the Service to correct the other discrepancies, including estimates of exposure at various distances, which are used to estimate the size of safety zones. As such, the Marine Mammal Commission recommends that the National Marine Fisheries Service ensure that those discrepancies are corrected and addressed in any issued incidental harassment authorization.

Please contact me if you or your staff has questions about any of the Commission's comments or recommendations.

Sincerely,

A handwritten signature in blue ink that reads "Timothy J. Ragen". The signature is written in a cursive style with a large, prominent "T" and "R".

Timothy J. Ragen, Ph.D.
Executive Director

References

- California Department of Transportation. 2009. Technical guidance for assessment and mitigation of hydroacoustic effects of pile driving on fish. Report prepared by ICF Jones & Stokes and Illingworth & Rodkin, Inc., Sacramento, California. 298 pp.
- Department of the Navy. 2008. Southern California Range Complex Final Environmental Impact Statement/Overseas Environmental Impact Statement. U.S. Department of the Navy, San Diego, California. 1,952 pp.
- National Center for Coastal Ocean Science. 2005. A Biogeographic Assessment of the Channel Islands National Marine Sanctuary: A Review of Boundary Expansion Concepts for NOAA's National Marine Sanctuary Program. Prepared by the National Center for Coastal Ocean Science's Biogeographic Team in cooperation with the National Marine Sanctuaries Program, Silver Spring, Maryland. NOAA Technical Memorandum NOS-NCCOSS-21. 215 pp.