

13 November 2008

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National Marine Fisheries Service
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Re: Comments on Proposed Rule for taking and importing marine mammals ; U.S. Navy training in the southern California range complex. Docket ID NOAA-NMFS-2008-0268

Thank you for the opportunity to review the proposed rule and the supporting documents the Navy has submitted. Cascadia Research has been conducting research on marine mammals off southern California for more than 20 years, including recent work specifically related to and supported by the Navy in the vicinity of the SOAR range (west of San Clemente Island) within SOCAL. We find the overall background information and description of impacts in the proposed rule very thorough and informative, however we do wish to comment on a couple of specific aspects of the rule and supporting monitoring plan.

Marine Mammal Occurrence and Estimation of Takes

The Navy compiled table of occurrence of marine mammals (page 60848) overstates the absence of some species during certain periods. For example, both humpback and blue whales are listed as not occurring November-April, when in fact lower numbers are present throughout this time, particularly in the early and late period of that range. This table also cites only one confirmed sighting of Bryde's whales in California; however we observed this species on two occasions in 2006 at SOAR.

Preliminary results of recent visual-acoustic surveys at SOAR (sponsored by the Navy) suggest that the population densities used to calculate takes may seriously underestimate the number of individuals to be exposed to MFAS/HFAS. This is most relevant for Cuvier's beaked whales, which (with acoustic direction from the M3R system) were among the most frequently encountered species in surveys conducted in 2007 and 2008. The group sizes of Cuvier's beaked whales at SOAR were larger on average than were reported in the line-transect surveys from which take estimates were derived, and a minimum 30 unique individuals were photo-identified within a limited area of the SOAR array in a 5-day period in October 2007 (Falcone et al., submitted). A satellite tag deployed on a single Cuvier's beaked whale at SOAR in August 2008 is continuing to provide regular updates on the location of this individual and suggest limited movements, with the whale spending extended periods of time both on SOAR and in the adjacent basin to the southwest of the existing array in the area of the proposed expansion (Schorr et al. unpublished data), in the area of the proposed expansion. These observations suggest that SOAR

and the surrounding area may represent important habitat for a local population of whales, and the proposed rule likely significantly underestimates impacts on Cuvier's beaked whales. This is important in light of their acknowledged sensitivity to such activities in other parts of their range.

Impacts Considered

In addition to underestimating the number of beaked whales that may be affected, we also feel this rule discounts the potential impacts on beaked whales within SOCAL based on several assumptions that are unfounded. The first is that strandings are unlikely to occur because events are not planned "in a location having a constricted channel less than 35 miles wide or with limited egress similar to the Bahamas (because none exist in the SOCAL Range Complex)" (page 60863). Sonar-associated beaked whale mortalities have occurred in other areas (e.g. the Canary Islands in 2002 and 2004) where such bathymetry was not present, suggesting this as not a requisite characteristic for sonar-influenced strandings. Further, the observation that unusual strandings have not been recorded to date in the region is not an indication that mortalities have not occurred. Given that most species of cetaceans sink upon death, and that most beaked whales occur in very deep water which would prevent decomposing carcasses from eventually refloating, it is highly unlikely that whales suffering mortal injury at sea would have been detected. This is especially true in offshore/island regions, where there is limited shoreline throughout much of the operational area, and much of it is steep or rocky and not conducive to holding moribund individuals or carcasses.

The dismissal of ship-strikes as a potential threat to the larger baleen whales, especially blue and fin whales, is not justified. In light of recent events, such as the suspected ship-strike deaths of at least five blue whales in the fall of 2008, make ship strike a key concern regionally. The ships involved in these incidents were not identified, and may or may not have been Navy vessels. In past years ship strikes of large whales by Navy ships have been reported in the Southern California Bight.

Proposed Mitigation

The document does not acknowledge the severe limitations of mitigation using ship-board observers. The statement that "the Navy's standard protective measures ensure power down of MFAS/HSAS when a marine mammal is detected" obscures the difficulty in actually making such detections. During poor weather and at night surface observations are ineffective at sighting most marine mammals, and even in ideal conditions they are not effective for mitigating exposure of long-diving species like beaked whales, which are of primary concern for impacts from MFAS. The results of our visual-acoustic monitoring at SOAR underscore the inadequacy of unassisted visual monitoring as a means of mitigation for beaked whales, as even highly experienced observers with acoustic direction were typically unable to locate beaked whales in sea states above a Beaufort 2. While there is a brief acknowledgement of these challenges, it does not seem to alter the basic conclusion that this mitigation would avoid exposing marine mammals to injury.

The graded response steps for MFAS based on the distance at which marine mammals are sighted does not make sense given the high proportion of time many marine mammal species,

especially long-divers, spend underwater. A beaked whale sighted in the path of the vessel 600 yards ahead that then dives would only require a decrease in source level by 6 dB, even though the trajectory of the ship would take it directly over the animal while it is underwater. Finally, the primary training observers appear to receive is watching a DVD, and in our experience this is insufficient for accurately detecting many species, especially in poor conditions.

Proposed SOCAL Monitoring Plan

As an accompaniment to this rule, the Navy has submitted a draft monitoring plan designed specifically to address the issues surrounding MFAS exposure and its effects on marine mammals during its planned operations. This plan, as outlined in the rule, includes four specific objectives: determining actual sound levels animals are exposed to, understanding geographic redistribution patterns in response to exposure, understanding behavioral responses, and assessing whether the proposed mitigation measures are effective. These objectives do not address the information gaps that exist about the species occurrence, abundance, and movements in the specific Navy operating area, something that is important to know when trying to evaluate impacts. We feel the primary methods suggested in the monitoring plan are not necessarily the best suited to address the stated objectives.

The proposed monitoring plan cites aerial survey as a preferred observation method based on the ability to cover large areas quickly and the ability to detect and observe marine mammals while underwater (0 to 30+ feet deep depending on water clarity, pg. 5). While the ability to cover large areas quickly might be beneficial for monitoring large geographic areas, the 100 knot travel speed of a plane assures that many species will be missed during surveys, even in the best of conditions. Most marine mammals stay submerged for periods greater than 3 minutes and spend only a few minutes or less at the surface between dives. Typical dive times for beaked whales range from 15 minutes to over 1 hour, and some (Cuvier's in particular) may spend less than two minutes at the surface between even their longest dives. Even with the ability to see up to 30 feet below the surface of the water (unlikely in the cooler, productive waters of SOCAL), most marine mammals spend only a fraction of their time in that portion of the water column. Relying on sub-surface aerial observations as a primary tool for measuring immediate behavioral response is both inadequate and ineffective, as total observation time would be limited in anything other than a rapid flight response of a frequently surfacing species. Additionally, responses such as more gradual movement out of a particular area, or movements into areas not generally used by that species, may not be detected during the typical aerial survey duration (less than six hours). The emphasis on aerial surveys runs counter to almost all published literature, which show a higher proportion of animals sighted along a transect by vessel surveys, due to their slower speed.

To adequately address the outlined objectives requires data on detailed dive behavior (at all water depths, not only at the surface), and movement patterns both before, during, and after exercises. Data needs to be collected regardless of weather and survey restrictions (flight duration, speed, ability to only see animals while at the surface) when operations are conducted. Although the monitoring plan discusses tagging as a means to answer some of the questions, it appears to rely on it as a secondary tool to visual observations. Various types of tags have been successfully deployed on a number of the species of interest in the monitoring plan, by a number

of organizations. Tags have already been deployed in association to sonar exercises, such as the Navy-funded tagging at RIMPAC in 2008 by Cascadia Research and Woods Hole Oceanographic Institute. Four satellite tags have already been deployed on the SCORE range as part of the M3R program, including the aforementioned tag on a Cuvier's beaked whale, which has been transmitting locations for over 100 days, and three fin whales (Schorr et al., unpublished). Short-term suction cup tags, such as the Dtag, are ideal for monitoring immediate behavioral responses and received source levels. Movement patterns of individuals can be assessed over periods of weeks to months using satellite transmitters, both to define population structure and to monitor changes in geographic distribution in response to exercises. Given the availability of these proven technologies which are almost essential to the stated objectives, it is unclear why the Navy would opt for a monitoring plan that emphasizes line-transect and aerial surveys.

Finally, we lament the fact that there seems to be little integration with pre-existing research efforts in the proposed plan, including those sponsored by the Navy or those by other government agencies such as SWFSC. The plan seems to include little or no use of many other valuable techniques such as acoustic monitoring from a variety of sources, including the Navy's own SOAR array (especially in light of its upcoming expansion), and photo-ID of baleen whales and odontocetes, a low-impact tool already being used to look at movement patterns and abundance, and also to document the individuals that have been exposed to Navy activities for evaluation of long-term impacts.

Sincerely,

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