



MARINE MAMMAL COMMISSION

30 April 2012

Mr. P. Michael Payne, Chief
Permits and Conservation 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 National Marine Fisheries Service's 30 March 2012 *Federal Register* notice (77 Fed. Reg. 19231). The notice provides additional information concerning a proposed incidental harassment authorization sought by the Navy under section 101(a)(5)(D) of the Marine Mammal Protection Act. The authorization would govern the taking of marine mammals by Level B harassment incidental to military training operations at the Silver Strand Training Complex in San Diego, California, during a one-year period. The Service originally proposed to issue an incidental harassment authorization for these activities on 19 October 2010 (75 Fed. Reg. 64276). The Commission provided comments on that original proposal in the enclosed 18 November 2010 letter. The Commission believes that those comments are still relevant and requests that they be included in the record pertaining to the Navy's addendum. The Commission also offers the following additional recommendations and rationale.

RECOMMENDATIONS

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

- require the Navy to model the various proposed monitoring schemes to determine what portion of the associated buffer zone is being monitored at any given time and the probability that dolphins entering that buffer zone would be detected before they get too close to the detonation site;
- require the Navy to (1) measure empirically the propagation characteristics of the blast (i.e., impulse, peak pressure, and sound exposure level) from the 5-, 10-, and 15- to 29-lb charges used in the proposed exercises and (2) use that information to establish appropriately sized exclusion and buffer zones;
- require the Navy to re-estimate the sizes of the buffer zones using the average swim speed of the fastest swimming marine mammal that inhabits the areas within and in the vicinity of the Complex where time-delay firing devices would be used and for which taking authorization is being requested; and
- advise the Navy that it should seek authorization for serious injury and incidental mortality in addition to taking by harassment.

RATIONALE

The Navy is seeking authorization to take marine mammals by harassment incidental to conducting training exercises that involve underwater detonations of charges up to 29 lbs net explosive weight and the installation and removal of steel piles using impact and vibratory hammers. The Navy has submitted an addendum to its original application that amends the proposed action and provides supplemental information. The addendum proposes to (1) add a new training area, 1,000 yards in diameter, located west of the current southernmost training area; (2) modify existing mitigation and monitoring measures; (3) add four species to the list of marine mammals that could be taken; and (4) allow the use of time-delay firing devices to detonate underwater explosives.

The time-delay firing devices allow divers to set explosive charges and move away before they detonate. Once activated, they cannot be paused or cancelled. The Navy prefers to use them because they likely would be used in combat situations and therefore are necessary to ensure realistic training. The devices also pose less risk to human safety compared to other triggering devices because they are not susceptible to unintentional triggering by humans or nearby electromagnetic radiation devices.

However, time-delay firing devices do pose some risks. In March 2011, several long-beaked common dolphins were found dead following a Navy mine neutralization training exercise that used time-delay firing devices at the Silver Strand Training Complex. After the incident, the Navy suspended its use of time-delay firing devices in its training exercises pending a review and possible changes to the incidental take authorizations for the Silver Strand Training Complex and other range complexes. It also has been working with the Service to develop more robust mitigation and monitoring measures designed to prevent similar incidents in the future. In its addendum, the Navy seeks authorization to take four species that were not included in the original proposed authorization but occur in the vicinity of the Complex: long- and short-beaked common dolphins, Pacific white-sided dolphins, and Risso's dolphins. As with the other marine mammals included in the application, the Navy is requesting authorization to take the additional species by Level B harassment only.

Mitigation and monitoring measures

As demonstrated by the March 2011 incident, mitigation and monitoring measures for mine neutralization training exercises need to account for the possible movements of marine mammals after time-delay firing devices are activated but before the explosives are detonated. For shallow water exercises using time-delay devices, the Navy proposes to monitor for marine mammals using two vessels, three vessels, or two vessels and a helicopter, depending on the size of the buffer zone. The Navy originally proposed that observer vessels move through the area around the detonation site. It now is proposing to position vessels at the mid-points of buffer zone radii, equidistant from one another. The vessels would travel in a circular pattern around the detonation location surveying both the inner (toward the detonation site) and outer (away from the detonation site) areas of the buffer zone. Although this seems a reasonable adjustment, it appears that neither the Navy nor the Service has determined the utility of this approach. Therefore, the Marine Mammal Commission

recommends that the National Marine Fisheries Service require the Navy to model the various proposed monitoring schemes to determine what portion of the associated buffer zone is being monitored at any given time and the probability that dolphins entering that buffer zone would be detected before they get too close to the detonation site.

The Navy also is proposing to increase the radius of the buffer zone from 470 yards to 1,000, 1,400, or 1,450 yards for shallow water detonations. Those increases are based on (1) the size of the modeled exclusion zones for three detonation weights (i.e., 5, 10, and 15–29 lbs), (2) the duration of the delay before detonation (5–10 minutes), and (3) an average swim speed for dolphins of 3 knots, with an added 200-yard buffer to account for animals that may be transiting at speeds faster than the average. The Navy and the Service believe that, as long as marine mammals are not observed within the revised buffer zones before the firing device is activated, the animals are unlikely to swim into the exclusion zone before the explosives detonate.

The Commission disagrees for two reasons. First, the exclusion zones were estimated using a model rather than empirical measurements. To the Commission's knowledge, the model has not been validated, but such validation is necessary, particularly in shallow water where the propagation characteristics of blast (i.e., impulse, peak pressure, and sound exposure level) are difficult to predict. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Navy to (1) measure empirically the propagation characteristics of the blast (i.e., impulse, peak pressure, and sound exposure level) from the 5-, 10-, and 15- to 29-lb charges used in the proposed exercises and (2) use that information to establish appropriately sized exclusion and buffer zones.

Second, the Commission does not believe that the use of 3 knots as an average swim speed is accurate or adequate for the species involved, even with the 200-yard extension to account for animals swimming faster than 3 knots. The Commission also notes that the Navy and Service are proposing to use smaller buffer zones (1,000 and 1,500 yards) than those estimated in 4 of 18 scenarios in Table 2 of the Service's *Federal Register* notice (i.e., 1,070, 1,074, 1,096 and 1,580 yards). In these cases, animals swimming faster than 3 knots could easily be at increased risk. If an animal swims at just 4 knots for the duration of the time-delay, the size of the buffer zones would be inadequate in 9 of the 18 scenarios presented in Table 3 of the notice. Importantly, many marine mammals are capable of swimming much faster than 4 knots, especially during short timeframes. The average swim speed for bottlenose dolphins, for example, ranges from 2.6 to 8 knots (Lockyer and Morris 1987, Mate et al. 1995, Ridoux et al. 1997). Furthermore, pelagic dolphins occur in the vicinity of the Complex and they swim faster than coastal species. The average swim speed for captive Pacific white-sided dolphins is 12.4 knots (Rohr and Fish 2004). Wild long-beaked common dolphins—the species involved in the March 2011 incident—have been observed swimming at an average of 8.1 knots and captive individuals of that species have been observed swimming at an average of 13.0 knots (Rohr et al. 1998). Because many of the marine mammal species found in the vicinity of the Complex can and generally do swim faster than 3 knots, the exclusion and buffer zones proposed by the Service and the Navy are simply inadequate. To address this concern, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Navy to re-estimate the sizes of the buffer zones using the average swim speed of the fastest swimming marine mammal that inhabits the areas within and in the vicinity of the Complex where time-delay firing devices would be used and for which taking authorization is being requested.

Possible need for incidental take regulations

As demonstrated by the March 2011 incident, mine neutralization training exercises using time-delay firing devices that are conducted at the Silver Strand Training Complex and other Navy range complexes can seriously injure or kill marine mammals (Danil and St. Leger 2011). The incident also demonstrates that the mitigation and monitoring measures used to protect marine mammals during those exercises were based on faulty assumptions and were simply not adequate. The Commission agrees that the risk of serious injuries or deaths occurring can be reduced to a very low level if appropriately conservative buffer zones are established and those zones are monitored effectively prior to activating time-delay firing devices. For the reasons described above, the Commission does not consider the adjustments proposed by the Navy and Service to be adequate. The Commission anticipates that the proposed buffer zones likely would need to be increased, perhaps considerably, once the propagation characteristics of the blast from such exercises are measured and the swim speeds of the fastest swimming marine mammals in that area are considered.

Clearly, larger buffer zones are more difficult to monitor effectively. Additional resources and strategies for monitoring will be necessary if the buffer zones ultimately adopted are larger than those being proposed. Even then, it will be challenging to detect all marine mammals within the buffer zones under all conditions. And even if marine mammals are detected approaching a detonation site, it likely will not be possible to haze or otherwise deter them from approaching the site. If the time-delay device has been activated, there may be nothing that the Navy can do. As a result, some risk that marine mammals may be seriously injured or killed as a result of training exercises using time-delay firing devices likely will remain. That being the case, incidental take regulations would be more appropriate than an incidental harassment authorization. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service advise the Navy that it should seek authorization for serious injury and incidental mortality in addition to taking by harassment. In this regard, the Commission notes that the other incidental taking applications that it recently has reviewed for Navy training activities involving the use of time-delay firing devices (in the Virginia Capes, Cherry Point, Jacksonville, and Hawaii Range Complexes) were being authorized under incidental take regulations issued under section 101(a)(5)(A) of the Marine Mammal Protection Act.

Please contact me if you have questions about these recommendations.

Sincerely,

A handwritten signature in blue ink that reads "Timothy J. Ragen". The signature is written in a cursive style with a long horizontal stroke at the end.

Timothy J. Ragen, Ph.D.
Executive Director

Enclosure

References

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