



# MARINE MAMMAL COMMISSION

7 December 2011

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 National Marine Fisheries Service's 7 November 2011 *Federal Register* notice (76 Fed. Reg. 68734) proposing modifications to letters of authorization issued to the Navy under section 101(a)(5)(A) of the Marine Mammal Protection Act. The letters of authorization govern the taking of marine mammals incidental to military training operations conducted in the Virginia Capes, Cherry Point, and Jacksonville Range Complexes. The current letters of authorization were issued on 1 June 2011 and expire 31 May 2012. The incidental take regulations under which the letters of authorization were issued allow the taking of marine mammals by Level A and Level B harassment and by accidental mortality during the five-year period from June 2009 to June 2014.

## RECOMMENDATIONS

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

- and the Navy investigate the underlying cause of the high rate of non-compliance with the respective letters of authorization and determine why it was not detected earlier;
- and the Navy jointly review the full scope of the applicable regulations and letters of authorization to ensure that the responsible Navy officials are aware of, understand, and are in compliance with all mitigation, monitoring, and reporting requirements;
- require the Navy to conduct empirical sound propagation measurements to verify the adequacy of the sizes of the exclusion zones for 5-, 10-, and 20-lb charges and to expand those zones and the buffer zones derived from those zones as necessary, if the National Marine Fisheries Service amends the letters of authorization as proposed;
- require the Navy to re-estimate the sizes of the buffer zones using the mean average swim speeds plus at least one standard deviation for marine mammals that inhabit the shallow-water areas where time-delay firing devices would be used, prior to amending the letters of authorization; and
- consider whether modifications to the letters of authorization alone are sufficient to satisfy the requirements of the Marine Mammal Protection Act and provide a thorough explanation of its rationale in the *Federal Register* notice taking final action on the proposed modifications, if it believes that regulatory modifications are not needed.

## **RATIONALE**

Regulations issued by the National Marine Fisheries Service authorize the Navy to take marine mammals incidental to specified military training operations off the east coast of the United States. Specifically, the regulations authorize taking incidental to training with weapons systems, underwater detonations, vessels, and aircraft. The activities covered by the regulations and letters of authorization include the use of explosive and non-explosive practice munitions and high-explosive underwater detonations. The Navy is requesting that the Service amend the current letters of authorization, which specify that time-delay firing devices may not be used, to allow use of such devices to detonate underwater explosives. Time-delay firing devices allow a specific time to elapse before explosives are detonated. The delay allows divers to set the charges and vacate the area before detonation. At present, those devices cannot be paused or cancelled once they have been activated.

The Navy is seeking this amendment because it has determined that using time-delay firing devices is critical for ensuring training using real-world mission scenarios and ensuring human safety. The Navy believes that alternatives to time-delay firing devices are inadequate and would not enable it to conduct realistic training events, because such devices would not be used in combat situations. Additionally, the Navy stated that the available alternative firing devices can introduce increased risks to the dive teams through unintentional triggering and from hazards associated with electromagnetic radiation. The technology to suspend a detonation after the currently available time-delay firing devices have been activated does not exist. Until that technology can be developed, the Navy intends to use the existing time-delay firing devices.

Although incidental take regulations are subject to the public notice and comment requirements of the Administrative Procedure Act, the Service generally does not publish proposed letters of authorization or proposed modifications to letters of authorization, which would provide an opportunity for public review and comment. The Service decided to do so in this case because the restrictions on using time-delay firing devices are set forth in the applicable letters of authorization rather than the regulations. Thus, the issues surrounding the use of time-delay firing devices and associated mitigation measures have not been discussed previously and have not been subject to public comment. The Commission agrees that a 30-day public comment period is warranted even though the Service is not proposing modifications to the incidental take regulations for any of the three range complexes.

Public review of the proposed modifications to the letters of authorization is warranted, particularly in light of the deaths of several dolphins during similar Navy training events off San Diego in March 2011. Although the dolphins were outside the specified exclusion zone at the time the detonation device was set, the use of a time-delay firing device allowed time for the dolphins to move into the zone before the detonation. That event occurred outside of the area covered by these regulations. However, it is relevant because similar time-delay devices are used in the Virginia Capes, Cherry Point, and Jacksonville Range Complexes.

As discussed previously, the existing letters of authorization specify that time-delay firing devices cannot be used. Nevertheless, the Navy evaluated its mine neutralization events after the March 2011 incident and determined that more than 97 percent of those events that occurred in the three range complexes used time-delay firing devices. As a result, the Navy suspended all underwater detonation events that use those devices until a more robust mitigation and monitoring plan could be developed. The Commission agrees that suspension of those activities was the appropriate response. However, it is troubled that, up until that time, time-delay firing devices were being used at those Range Complexes despite a clear prohibition in the applicable letters of authorization. The Marine Mammal Commission therefore recommends that the National Marine Fisheries Service and the Navy investigate the underlying cause of the high rate of non-compliance with the respective letters of authorization and determine why it was not detected earlier. Non-compliance with this provision also calls into question whether the Navy is fully complying with the other terms and conditions of the applicable letters of authorization. As such, the Marine Mammal Commission further recommends that the Service and the Navy jointly review the full scope of the applicable regulations and letters of authorization to ensure that the responsible Navy officials are aware of, understand, and are in compliance with all mitigation, monitoring, and reporting requirements.

### **Mitigation and monitoring measures**

To minimize impacts to marine mammals if use of time-delay firing devices is authorized, the Navy worked with the Service to develop additional mitigation and monitoring measures for mine neutralization events. The Navy proposes to require more observation platforms during each event, amend the manner in which the buffer zones (i.e., Level B harassment) are monitored, and increase the radius of those zones. The Navy proposes to use two or three observation platforms, depending on the size of the buffer zone, instead of one observation platform. Observations would be made from two vessels, three vessels, or two vessels and a helicopter, depending on the size of the charge being detonated and the duration of the delay. The current mitigation measures specify that parallel tracklines are to be surveyed to cover the buffer zone. To ensure that the larger buffer zones would be monitored effectively, the Navy is proposing to position the vessels at mid-points of buffer zone radii, equidistant from one another, and 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. The Commission agrees that implementation of the proposed mitigation measures would be prudent.

The Navy also is proposing to increase the radius of the single buffer zone from 700 yards to 1,000, 1,400, or 1,450 yards depending on the charge weight (i.e., 5, 10, and 20 lbs) and duration of the time delay (i.e., 5–10 minutes). Those increases are based on (1) the size of the modeled exclusion zones (i.e., Level A harassment) for the three detonation weights, (2) the time-delay increments, and (3) an average delphinid swim speed of 3 knots, with an added buffer to account for animals that may be transiting at speeds greater than the average speed. As long as animals are not observed within the revised buffer zones before the device is set, then the Navy and Service believe that the animals would not likely swim into the exclusion zone by the time the explosives detonate. The Commission questions the optimism of the agencies regarding the effectiveness of the exclusion

Mr. P. Michael Payne  
7 December 2011  
Page 4

and proposed buffer zones on two grounds—the methods used to calculate the size of the exclusion zones and the assumed swim speeds of marine mammals.

The exclusion zones were estimated using a model rather than empirical measurements. Models are useful when empirical measurements are lacking but are known to be inaccurate in shallow-water environments where these events are conducted.

The Navy also included an additional, but unspecified correction factor to account for animals swimming faster than 3 knots. However, if one assumes that an animal swims at just 4 knots for the duration of the time-delay, the Navy would have underestimated the size of those buffer zones in 8 of the 18 scenarios presented in Table 3 of the *Federal Register* notice. Many marine mammals are capable of swimming 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). Thus, the Commission believes that the Service and the Navy must use a more precautionary approach to calculate exclusion and buffer zones. To minimize impacts to marine mammals, the Marine Mammal Commission recommends that, if the National Marine Fisheries Service amends the letters of authorization as proposed, it require the Navy to conduct empirical sound propagation measurements to verify the adequacy of the sizes of the exclusion zones for 5-, 10-, and 20-lb charges and to expand those zones and the buffer zones derived from those zones as necessary. The Commission further recommends that, prior to amending the letters of authorization, the Service require the Navy to re-estimate the sizes of the buffer zones using the mean average swim speeds plus at least one standard deviation for marine mammals that inhabit the shallow-water areas where time-delay firing devices would be used. Assuming swim speeds are distributed normally, this approach should address about 86 percent of those cases when swim speed is a critical factor.

On a related matter, the Commission notes that the existing “zone of influence” for mine neutralization events and requirements for pre-detonation monitoring of that zone are included in the underlying incidental take regulations (e.g., 50 C.F.R. § 218.4(a)(4)(iv) for the Virginia Capes Range Complex). Although the proposed modifications to the letters of authorization would be more restrictive than the regulatory provisions, the regulations also need to meet the requirements of section 101(a)(5). That is, they must ensure that the authorized taking will have only a negligible impact on the affected species and stocks of marine mammals, the activities will have the least practicable adverse impacts on those species and stocks, and the taking limits set forth in section 218.2(c) of the regulations (and parallel provisions of the regulations for the other range complexes) are not exceeded. As such, conforming modifications to the applicable regulatory provisions also may be required. The Marine Mammal Commission therefore recommends that National Marine Fisheries Service consider whether modifications to the letters of authorization alone are sufficient to satisfy the requirements of the Marine Mammal Protection Act and, if it believes that regulatory modifications are not needed, provide a thorough explanation of its rationale in the *Federal Register* notice taking final action on the proposed modifications.

Please contact me if you or your staff has questions about these recommendations.

Mr. P. Michael Payne  
7 December 2011  
Page 5

Sincerely,

A handwritten signature in blue ink that reads "Timothy J. Ragen". The signature is written in a cursive style with a large, sweeping initial 'T'.

Timothy J. Ragen, Ph.D.  
Executive Director

### References

Lockyer, C., and R. Morris. 1987. Observations on diving behavior and swimming speeds in a juvenile *Tursiops truncatus*. *Aquatic Mammals* 13:31–35.

Mate, B.R., K.A. Rossback, S.L. Nieukirk, R.S. Wells, A. B. Irvine, M.D. Scott, and A.J. Read. 1995. Satellite-monitored movements and dive behavior of a bottlenose dolphin (*Tursiops truncatus*) in Tampa Bay, Florida. *Marine Mammal Science* 11(4):452–463.