

**ENVIRONMENTAL ASSESSMENT ON THE ISSUANCE OF  
AUTHORIZATIONS TO TAKE MARINE MAMMALS, BY HARASSMENT,  
INCIDENTAL TO NAVAL EXPLOSIVE ORDNANCE DISPOSAL SCHOOL  
TRAINING OPERATIONS AT EGLIN AIR FORCE BASE, FLORIDA**

**I. INTRODUCTION**

On March 10, 2004, the National Marine Fisheries Service (NMFS) received an application from the Eglin Air Force Base (EAFB) requesting an Incidental Harassment Authorization (IHA) under section 101 (a)(5)(D) of the Marine Mammal Protection Act (MMPA) for 2005-2006, and Letters of Authorization (LOAs) under section 101 (a)(5)(A) of the MMPA for subsequent years. The authorizations would cover the take of Atlantic bottlenose dolphins (*Tursiops truncatus*) and Atlantic spotted dolphins (*Stenella frontalis*) incidental to Naval Explosive Ordnance Disposal School (NEODS) training operations at EAFB, off Santa Rosa Island (SRI), Florida. This Environmental Assessment is intended to address impacts to the environment that would result from the issuance of an IHA in 2005, as well as the issuance of subsequent LOAs under a new rule from 2006-2011.

**II. PURPOSE AND NEED FOR THE ACTION**

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1361 *et seq.*) directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional taking of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and regulations are issued.

Authorization may be granted if the Secretary finds that the taking will have a negligible impact on the species or stock(s); will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses; and the permissible methods of taking and requirements pertaining to the monitoring and reporting of such taking are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

On April 30, 1994, the President signed Pub. Law 103-238, the Marine Mammal Protection Act Amendments of 1994. One part of this law added a new subsection 101(a)(5)(D) to the MMPA to establish an expedited process by which citizens of the United States can apply for an authorization to incidentally take small numbers of marine mammals by harassment. The National Defense Authorization Act of 2004 (NDAA) (Public Law 108-136) amended the definition of "harassment" in section 18(A) of the MMPA as it applies to a "military readiness activity" to read as follows:

- (i) any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild (Level A Harassment); or
- (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns,

including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered (Level B Harassment).

The EAFB has determined that conducting multi-year NEODS training operations might potentially disturb marine mammals and, accordingly, submitted an application for an IHA and subsequent LOAs. If the action proposed in the application will have no more than a negligible impact on the species or stock, will not have an unmitigable adverse impact on the availability of the species or stock for subsistence uses, and the permissible methods of taking and required monitoring are set forth (in the IHA and, subsequently, in new regulations), then the NMFS shall issue the authorization. The purpose of the IHA is to investigate the status of the marine mammals that may be impacted by the action, set forth the types and amount of take that may occur, and list the mitigation and monitoring required to ensure the least practicable impact to marine mammal species.

### **Military Readiness Activity**

NEODS supports the Naval Fleet by providing training to personnel from all four armed services, civil officials, and military students from over 70 countries. The NEODS facility supports the Department of Defense Joint Service Explosive Ordnance Disposal training mission. The Navy and the Marine Corps believe that the ability of Sailors and Marines to detect, characterize, and neutralize mines from their operating areas at sea, on the shore, and inland, is vital to their doctrines.

The Navy believes that an array of transnational, rogue, and subnational adversaries now pose the most immediate threat to American interests. Because of their relative low cost and ease of use, mines will be among the adversaries' weapons of choice in shallow-water situations, and they will be deployed in an asymmetrical and asynchronous manner. The Navy needs organic means to clear mines and obstacles rapidly in three challenging environments: shallow water; the surf zone; and the beach zone. The Navy also needs a capability for rapid clandestine surveillance and reconnaissance of minefields and obstacles in these environments. The NEODS mission in the Gulf of Mexico (GOM) offshore of EAFB is considered a military readiness activity pursuant to the NDAA (Public Law 108-136).

### **III. DESCRIPTION OF ACTIVITY TO BE COVERED BY AUTHORIZATIONS**

The mission of NEODS is to train personnel to detect, recover, identify, evaluate, render safe, and dispose of unexploded ordnance (UXO) that constitutes a threat to people, material, installations, ships, aircraft, and operations. The NEODS proposes to utilize three areas within the Eglin Gulf Test and Training Range (EGTTR), consisting of approximately 86,000 square miles within the GOM and the airspace above, for Mine Countermeasures (MCM) detonations, which involve mine-hunting and mine-clearance operations. The detonation of small, live explosive charges disables the function of the mines, which are inert for training purposes. The proposed training would occur approximately one to three nautical miles (nm) (1.9 to 5.6 km) offshore of Santa Rosa Island (SRI) six times annually, at varying times within the year.

Each of the six training classes would include one or two “Live Demolition Days.” During each set of Live Demolition Days, five inert mines would be placed in a compact area on the sea floor in approximately 60 ft (18.3 m) of water. Divers would locate the mines by hand-held sonars. The AN/PQS-2A acoustic locator has a sound pressure level (SPL) of 178.5 re 1 microPascal @ 1 meter and the Dukane Underwater Acoustic Locator has a SPL of 157-160.5 re 1 microPascal @ 1 meter. Because these sonar ranges are unlikely to result in received SPLs at or above any current impact threshold for protected species, noise impacts are not anticipated from the hand-held sonars and are, therefore, not addressed further in this analysis.

Five charges packed with five lbs (2.3 kg) of C-4 explosive material will be set up adjacent to each of the mines. No more than five charges will be detonated over the two-day period. Detonation times will begin no earlier than two hours after sunrise and end no later than two hours before dusk and charges utilized within the same hour period will have a maximum separation time of 20 minutes. Mine shapes and debris will be recovered and removed from the water when training is completed. Six training sessions per year, with 5 detonations per session, equals a total of 30 detonations per year, or 180 detonations over the course of 6 years. A more detailed description of the NEODS training operations is contained in the application, which may be viewed at:

[http://www.nmfs.noaa.gov/prot\\_res/PR1/Small\\_Take/smalltake\\_info.htm#applications](http://www.nmfs.noaa.gov/prot_res/PR1/Small_Take/smalltake_info.htm#applications).

### III. ALTERNATIVES INCLUDING THE PROPOSED ACTION

#### **A. Preferred Alternative**

The proposed action is for NMFS to issue a one-year Incidental Harassment Authorization, and subsequently promulgate a five-year rule, authorizing incidental take of bottlenose dolphins and Atlantic spotted dolphins during NEODS training operations at EAFB. LOAs would then be issued under the new rule from 2006-2010. A description of the activity to be covered by the proposed IHA was provided above. The potential impacts to marine mammals from a one-year IHA and subsequent LOAs will be as described in section (V)(A)(1) of this document. The mitigation measures and reporting requirements described in Section VI will be incorporated into the IHA. Without taking into account reductions in take resulting from the effective implementation of mitigation and monitoring measures, NMFS has preliminarily determined that the NEODS training operations would result in the Level B harassment taking of 4 Atlantic bottlenose dolphins per year and 3 Atlantic spotted dolphins per year, and, that over the course of the 5-year rule 1 Atlantic bottlenose dolphin and 1 Atlantic spotted dolphin could potentially be exposed to energy or pressure levels high enough to injure or kill them. However, NMFS believes that the implementation of the mitigation measures will make Level A Harassment or mortality of either of these species highly unlikely (see Section (VI)). NMFS has further determined that the issuance of these authorizations will have no more than a negligible impact on affected stocks.

#### **B. No Action Alternative**

The No Action Alternative is not issuing the IHA. The MMPA prohibits all takings of marine mammals unless authorized by a permit or exempted under the MMPA. If an

authorization to incidentally take Atlantic bottlenose dolphins and Atlantic spotted dolphins were denied, the applicant could choose to amend the project to avoid harassing marine mammals or choose not to pursue the project.

### **C. Issuance of IHA Using Alternate Level B Harassment Pressure Exposure Threshold**

In their original application, EAFB proposed to implement monitoring protocols identical to the preferred alternative, except that the Zone of Influence (ZOI) was a circle with a radius of 468 m, instead of 230 m, as in the preferred alternative. The basis for this difference in the ZOI was NMFS' and the Air Force's use of a different pressure exposure threshold for Level B Harassment. In the past, NMFS used 12 psi, based on criteria and thresholds initially presented in U.S. Navy Environmental Impact Statements (EISs) for ship shock trials of the SEAWOLF submarine and the WINSTON CHURCHILL vessel and subsequently adopted by NMFS. NMFS has recently approved the use of a 23-psi pressure criteria for Level B Harassment based on the work of Finneran *et al.* (2002). A more detailed discussion of the effects of sound on marine mammals and NMFS' exposure criteria may be found in Section (V)(A)(1)(a) of this document. A detailed justification for the recent change in NMFS' pressure exposure criteria may be found in the notice for the issuance of an IHA to the Navy for Precision Strike Weapons, published in August, 2005, and is incorporated herein by reference.

### **D. Issuance of IHA With Additional Aerial Monitoring Requirement**

This alternative action is for NMFS to issue a one-year Incidental Harassment Authorization, and subsequently promulgate a five-year rule, authorizing incidental take, by harassment, of bottlenose dolphins and Atlantic spotted dolphins during NEODS training operations at EAFB, but with added aerial overflight monitoring requirements. This activity would be the same as the preferred alternative, described above, except that EAFB would be required to have aerial monitoring at the same time and with the same mission delay requirements as the vessel monitoring if a marine mammal were sighted in the ZOI (see section (VI)(B)). The potential impacts to marine mammals from a one-year IHA and subsequent LOAs with an additional aerial monitoring component are described in section (V)(D) of this document.

## **IV. AFFECTED ENVIRONMENT**

### **A. Affected Area**

The EGTTR encompasses an 86,000-mi<sup>2</sup> area of airspace over the GOM that is scheduled and operated by EAFB. The NEODS proposes to use waters within the EGTTR off of SRI for the live demolition portion of the training operations. The NEODS would utilize approximately 60-foot deep areas located 1-3 nm offshore of Test Site A-15, A-10, or A-3 for MCM training (Figure 1). Both natural and artificial reefs exist in the vicinity, but the closest reef is artificial and located over 2 mi away. Gulf sturgeon critical habitat may be found within 1 mi of the proposed training areas, but NMFS has determined (see section (IV)(C) of this document) that it will not be adversely modified by any effects of the proposed action.

## B. Marine Mammals

Marine mammal species that potentially occur within the EGTTTR include several species of cetaceans and the West Indian manatee. While a few manatees may migrate as far north as Louisiana from southern Florida (where they are generally confined in the winter) in the summer, they primarily inhabit coastal and inshore waters and rarely venture offshore. NEODS missions are conducted 1-3 nm (5.6 km) from shore and effects on manatees are therefore considered very unlikely and not discussed further in this analysis.

Cetacean abundance estimates for the project area are derived from GulfCet II aerial surveys conducted from 1996 to 1998 over a 70,470 km<sup>2</sup> area, including nearly the entire continental shelf region of the EGTTTR, which extends approximately 9 nm (16.7 km) from shore. The dwarf and pygmy sperm whales are not included in this analysis because their potential for being found near the project site is remote. The two marine mammal species expected to be potentially present in the training area and affected by these activities are the Atlantic bottlenose dolphin (*Tursiops truncatus*) and the Atlantic spotted dolphin (*Stenella frontalis*).

### 1. Atlantic Bottlenose Dolphins

Bottlenose dolphins may be found in coastal populations along the continents and around most oceanic islands and atolls, in pelagic populations centered far offshore, as well as in bays, estuaries, and the lower reaches of rivers (Reeves *et al.*, 2002). In North American waters, Atlantic bottlenose dolphins are found mainly where surface temperatures are from 50-90°F. Dolphins in bays typically form small groups of 2-15, while offshore groups may contain hundreds of individuals. Coastal animals typically feed on invertebrates or fish that live near the bottom, while offshore animals eat pelagic fish and squid, diving up to 500 m. Calves can be born any time of the year (though typically not in the colder months in temperate areas) after a year of gestation, and are not fully weaned until 18-20 months of age (Reeves *et al.*, 2002). Though the bottlenose dolphin remains abundant, overall, and widely distributed, some local populations are at great risk due to habitat degradation, fishery conflicts, pollution, or overkilling. In the U.S. Atlantic and the GOM, major die-offs have been linked to viral outbreaks and acute exposure to toxins (Reeves *et al.*, 2002).

Atlantic bottlenose dolphins are distributed worldwide in tropical and temperate waters and occur in the slope, shelf, and inshore waters of the GOM. Based on a combination of geography and ecological and genetic research, Atlantic bottlenose dolphins have been divided into many separate stocks within the GOM. The exact structure of these stocks is complex and continues to be revised as research is completed. For now, bottlenose dolphins inhabiting waters less than 20 m (66 ft) deep in the U.S. GOM are believed to constitute 36 inshore or coastal stocks, and those inhabiting waters from 20 to 200 m (66 to 656 ft) deep in the northern GOM from the United States-Mexican border to the Florida Keys are considered the continental shelf stock (Waring *et al.*, 2004). The proposed action would occur on the ocean floor at a depth of approximately 60 ft (18 m) and therefore has the potential to affect both the continental shelf and inshore stocks.

Continental shelf stock assessments were estimated using data from vessel surveys conducted between 1998 and 2001 (at 20- to 200-m (66- to 656-ft) depths). The minimum population estimate for the northern GOM continental shelf stock of the Atlantic bottlenose dolphin is 20,414 (Waring *et al.*, 2004).

The most recent inshore stock assessment surveys were conducted aerially in 1993 and covered the area from the shore or bay boundaries out to 9.3 km (5.0 nm) past the 18.3 m (60.0 nm) depth isobath (a slightly different area than that defined as inshore in the more recent stock assessment above). The minimum population estimate of the northern GOM coastal stock of the Atlantic bottlenose dolphin was 3,518 dolphins (Waring *et al.*, 1997).

Texas A&M University and the NMFS conducted GulfCet II aerial surveys in an area including the EGTR from 1996 to 1998. Density estimates were calculated using abundance data collected from the continental shelf area of the EGTR. In an effort to provide better species conservation and protection, estimates were adjusted to incorporate temporal and spatial variations, surface and submerged variations, and overall density confidence. The adjusted density estimate for Atlantic bottlenose dolphins within the project area is 0.810 individuals/km<sup>2</sup>. A small number of dolphins could not be identified specifically as Atlantic bottlenose or Atlantic spotted and their estimated density was 0.053 individuals/km<sup>2</sup>.

## 2. Atlantic Spotted Dolphins

Less is known of the Atlantic spotted dolphin than the Atlantic bottlenose dolphin and abundance estimates are available for only small portions of their range, and some may be inaccurate due to their similarity in appearance to the pantropical spotted dolphin. Though Atlantic spotted dolphins are sometimes found in groups of up to 50, 5-15 individuals in a group is more typical (Reeves *et al.*, 2002). Atlantic spotted dolphins feed on small fish, cephalopods, and benthic invertebrates. The calving cycle is 3-4 years and females nurse their calves for between 3 and 5 years.

Atlantic spotted dolphins are endemic to the tropical and warm temperate waters of the Atlantic Ocean and can be found from the latitude of Cape May, New Jersey south along mainland shores to Venezuela, including the GOM and Lesser Antilles. In the GOM, Atlantic spotted dolphins occur primarily in continental shelf waters 10 to 200 m (33 to 656 ft) deep out to continental slope waters less than 500 m (1640.4 ft) deep. One recent study presents strong genetic support for differentiation between GOM and western North Atlantic management stocks, but the Gulf of Mexico stock has not yet been further subdivided.

Abundance was estimated in the most recent assessment of the northern GOM stock of the Atlantic spotted dolphin using combined data from continental shelf surveys (20 to 200 m (66 to 656 ft) deep) and oceanic surveys (200 m (656 ft) to offshore extent of U.S. Exclusive Economic Zone) conducted from 1996 to 2001. The minimum population estimate for the northern GOM is 24,752 Atlantic spotted dolphins (Waring *et al.*, 2004).

Density estimates for the Atlantic spotted dolphin within the EGTR were calculated using abundance data collected during the GulfCet II aerial surveys. In an effort to provide

better species conservation and protection, estimates were adjusted to incorporate temporal and spatial variations, surface and submerged variations, and overall density confidence. The adjusted density estimate for Atlantic spotted dolphins within the project area is 0.677 individuals/km<sup>2</sup>. A small number of dolphins could not be identified specifically as Atlantic bottlenose or Atlantic spotted and their estimated density was 0.053 individuals/km<sup>2</sup>.

### **C. Endangered Species**

Four species of sea turtles; the leatherback sea turtle (*Dermochelys coriacea*), green sea turtle (*Chelonia mydas*), Kemp's ridley sea turtle (*Lepidochelys kempii*), and loggerhead sea turtle (*Caretta caretta*) are found in the area of the NEODS test sites and could potentially be harmed by the proposed activity. NMFS consulted with EAFB pursuant to section 7 of the ESA regarding these species and the findings are discussed in section (A)(2) of this document. Information regarding the abundance, distribution, and life history of these species may be found in Section 2 of NMFS' 2004 Biological Opinion on the Eglin Gulf Test and Training Range, Naval Explosive Ordnance Disposal School Training (5-year Plan) [Consultation No. F/SER/2004/00361], and is incorporated by reference.

## **V. ENVIRONMENTAL CONSEQUENCES**

The impact of Federal actions must be considered prior to implementation to determine whether the action will significantly affect the quality of the human environment. In this section, an analysis of the environmental impacts of issuing an IHA to EAFB and the alternatives to that proposed action are presented.

### **A. Proposed Action**

#### **1. Impacts on Marine Mammals**

##### *a. Acoustic Impacts*

The primary potential impact to the Atlantic bottlenose and the Atlantic spotted dolphins occurring in the EGTTTR from the proposed detonations is Level B Harassment from the acoustic effects of the explosions. There is a slight potential, absent mitigation, that small numbers of marine mammals may be injured or killed due to the energy generated from an explosive force on the sea floor.

#### **Level A Harassment**

Level A Harassment is defined as any act that injures or has the potential to injure a marine mammal or marine mammal stock in the wild. In relation to acoustics, Level A Harassment usually takes the form of tympanic membrane (TM) rupture and the onset of slight lung injury. TM rupture is well correlated with permanent hearing impairment (Ketten (1998) indicates a 30 percent incidence of permanent threshold shift (PTS) at the same threshold). The threshold currently used by NMFS for Level A Harassment corresponds to a 50 percent rate of TM rupture, which can be stated in terms of an energy flux density (EFD) value of 205 dB re 1

microPa<sup>2</sup> s. This means that more than 50% of animals exposed to this energy level are thought to sustain TM rupture, and that any animal exposed to this level of energy is assumed to have suffered Level A Harassment. This exposure criteria is based on thresholds initially presented in U.S. Navy EISs for ship shock trials of the SEAWOLF submarine and the WINSTON CHURCHILL vessel and subsequently adopted by NMFS.

A Zone of Influence (ZOI), a circle with a radius extending the farthest distance from the source (circle center) at which an animal is exposed to the EFD level referred to, was calculated for the NEODS detonations. The radius of the ZOI, based on the Level A Harassment threshold, is 52 m (172 ft). Based on the density estimates in the area (from the aforementioned GulfCet II surveys), the estimated number of Atlantic bottlenose dolphins and Atlantic spotted dolphins potentially exposed to the Level A Harassment threshold (205 dB re 1 microPa<sup>2</sup> s), are less than one (0.22 and 0.19, respectively) annually. Neither injury nor mortality of marine mammals are expected during the one year EAFB is authorized under an IHA. Over the course of the five-year rule, however, if mitigation measures are less effective than anticipated, 1 bottlenose dolphin and 1 spotted dolphin could potentially be exposed to energy levels above the Level A Harassment threshold and be injured or killed. However, NMFS believes that the implementation of the mitigation measures will make Level A Harassment or mortality of either of these species highly unlikely (see Section (VI)).

### **Level B Harassment**

Level B (non-injurious) Harassment is defined as any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered.

Acoustically, Level B Harassment is measured in terms of temporary (auditory) threshold shift (TTS), a slight, recoverable loss of hearing sensitivity. TTS can manifest itself as meaningful changes in the behavior of the affected animal, such as a reduced ability to detect predators or prey. NMFS uses dual criteria for Level B Harassment to address the separate effects of energy and pressure waves that result from an explosion. Based on data presented in the Navy EISs mentioned above, NMFS uses 182 dB re 1 microPa<sup>2</sup> s maximum Energy Flux Density (EFD) level in any 1/3-octave band above 100 Hz for toothed whales (e.g., dolphins) as the energy exposure threshold for Level B Harassment. Based on newer and more applicable information presented in Finneran *et al.*'s 2002 publication, the pressure exposure threshold for Level B Harassment is 23 psi.

The ZOI for the 182 dB energy threshold is 230 m (754 ft). The ZOI for the 23 psi pressure threshold is 222 m (728 ft). Therefore, 230 m, the more conservative radius was used by EAFB to develop the monitoring protocol for this activity. The estimated numbers of Atlantic bottlenose dolphins and Atlantic spotted dolphins potentially taken through exposure to 182 dB are 4 and 3 individuals annually, respectively. Over the course of 6 years, 24 Atlantic bottlenose dolphins and 18 Atlantic spotted dolphins could potentially taken by Level B Harassment. However, NMFS believes that the implementation of the proposed mitigation will greatly reduce



the numbers of marine mammals affected and that the effects on the environment from this take will not be significant.

Level B Harassment also includes behavioral modifications resulting from repeated noise exposures (below TTS) to the same animals (usually resident) over a relatively short period of time. Threshold criteria for this particular type of harassment are currently still under consideration. One recommendation is a level of 6 dB below the TTS threshold (see 69 FR 21816, April 22, 2004), which would be 176 dB re 1 microPa<sup>2</sup> s. Due to the infrequency of the detonations, the potential variability in target locations, and the continuous movement of marine mammals off the northern GOM, behavioral modification from repeated exposures to the same animals is considered highly unlikely.

#### *b. Chemical Residue*

A small amount (5 lbs) of C-4 explosive will be detonated 30 times per year for 6 years. Detonation of explosives typically results in the complete combustion of the original materials and any chemicals remaining would be present in extremely low concentrations and would be quickly dispersed by oceanographic processes. All explosives will be either detonated or removed from the test site following the training and ingestion is not a concern. NMFS does not anticipate adverse effects to marine mammals resulting from exposure to chemical residue from the NEODS training exercises. A more detailed discussion of water quality contamination may be found in section 4.2 of NMFS' biological opinion (NMFS 2004) addressing this action, which is available at this office, and is incorporated by reference.

#### *c. Debris*

Although the destruction of mines is expected to result in marine debris, EAFB has proposed to recover and remove all mine shapes and debris after the training operations. The NEODS training exercises are expected to contribute very little floating debris to the marine waters and no adverse impacts to marine mammals are anticipated to result from this marine debris.

## 2. Endangered Species

The EAFB consulted with NMFS' Southeast Regional Office pursuant to section 7 of the Endangered Species Act (ESA) regarding impacts to ESA-listed species that could potentially result from the proposed action. Based on the determination that their distribution or occurrence would be very unlikely to overlap with the action area, NMFS concluded that sperm whales, blue whales, sei whales, fin whales, humpback whales, North Atlantic Right whales, hawksbill sea turtles, smalltooth sawfish, and Gulf sturgeon are not likely to be adversely affected by the proposed action. Similarly, though Gulf sturgeon critical habitat may be found within 1 nm of the proposed training areas, NMFS determined that no principal constituent elements would be destroyed or adversely modified by any indirect effects associated with the proposed action.

NMFS determined that the leatherback sea turtle (*Dermochelys coriacea*), green sea turtle (*Chelonia mydas*), Kemp's ridley sea turtle (*Lepidochelys kempii*), and loggerhead sea turtle

(*Caretta caretta*) may be adversely affected by the proposed action. Pressure waves from the explosions are anticipated to cause the majority of take. NMFS determined that the level of anticipated take is not likely to appreciably reduce either the survival or recovery of these sea turtle species in the wild, and further concluded that the proposed action is not likely to result in jeopardy to any of the abovementioned species. NMFS issued an incidental take statement covering the lethal or non-lethal take of one Kemp's ridley turtle, one green sea turtle, and four loggerhead sea turtles over the five-year NEODS training plan. The activities covered by this EA were analyzed in that Biological Opinion, and the proposed IHA to EAFB does not modify the action in a manner that was not previously analyzed.

### 3. Cumulative Impacts

Cumulative effects are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions” (40 CFR §1508.7).

There are many ongoing activities within the EGTTTR that affect marine mammals and other protected species, though not necessarily in an area overlapping the area that NEODS training operations will occur. The current main uses of the affected area include commercial fishing, recreational boating and fishing, and the exploration, production, and transport of mineral resources and other waterborne commerce throughout the GOM. These are expected to continue at the present levels of intensity in the near future, as are their associated risks of injury or mortality to protected species posed by incidental capture by fishermen, anthropogenic noise, accidental oil spills, vessel collisions, marine debris, and chemical discharges.

EGTTTR test and training missions, such as Precision Strike Weapon and Air-to-Surface Gunnery Exercises, are expected to occur indefinitely and may potentially take marine mammals and sea turtles. NMFS concluded ESA consultation for these activities on October 28, 2004 and March 14, 2005, respectively. Cumulative impact assessments made in those activities EAs indicated there would not be a cumulative impact. Also, NMFS is currently in consultation with the Navy to address effects on marine mammals and sea turtles resulting from explosive removal of offshore structures in the GOM.

Despite the other activities going on in the area, NMFS does not believe that significant cumulative impacts are likely to occur at EAFB as a result of the issuance of this IHA for the take of marine mammals, by harassment, incidental to the NEODS training operations in the EGTTTR. We anticipate impacts to be limited to temporary behavioral disturbance of Atlantic bottlenose dolphins and Atlantic spotted dolphins, as well as the potential lethal or non-lethal take of up to six sea turtles, during the time of the detonations.

### **B. No Action Alternative**

If the NEODS training operation IHA were not issued, EAFB would not detonate any explosives, and the previously described risk to marine mammals would be eliminated.

However, the EAFB would not be able to conduct their training operations and the NEODS mission would be jeopardized.

### **C. Issuance of IHA Using Alternate Level B Harassment Pressure Exposure Threshold**

As originally submitted in their application, if EAFB had used the 12-psi pressure exposure threshold for Level B Harassment, the ZOI would have been 468 m, instead of 230 m as it is in the preferred alternative. The mitigation measures would have included requirements to suspend training activities and postpone detonations until marine mammals were outside of the 468-m radius ZOI, instead of only outside of a 230-m ZOI. However, since NMFS believes that the new 23-psi pressure exposure threshold is scientifically valid and we use the slightly more conservative 182-dB energy threshold to define the ZOI, the estimated amount of take is the same for both alternatives as we believe that Level B Harassment will only occur within the 230-m ZOI.

### **D. Issuance of IHA With Additional Aerial Monitoring Requirement**

Aerial surveys have been used as an effective complement to vessel observations in several larger Navy GOM exercises. The Navy has found, however, that detection of Atlantic bottlenose dolphins and Atlantic spotted dolphins by shipboard observers is 100 percent (DON, 1999, Appendix C). Due to the effectiveness of vessel observation in detecting these species, the low density of marine mammals in the area, and the small area to be monitored, NMFS does not believe that an added aerial monitoring component would be likely to reduce the numbers of marine mammals harassed by the NEODS training activities. When the cost of aerial overflights is combined with the unlikelihood of reducing take with these additional monitoring requirements, NMFS believes that the preferred alternative (issuing the authorizations without aerial monitoring requirements) will effect the least practicable impact on marine mammals.

## **VI. MITIGATION, MONITORING, and REPORTING**

### **A. Mitigation**

Mitigation will consist primarily of surveying and taking action to avoid detonating charges when protected species are within the ZOI. A trained, NMFS-approved observer will be staged from the highest point possible on a support ship and have proper lines of communication to the Officer in Tactical Command. The survey area will be 460 m (1509 ft) in every direction from the target, which is twice the radius of the ZOI for Level B Harassment (230 m (755 ft)). To ensure visibility of marine mammals to observers, NEODS missions will be delayed if whitecaps cover more than 50 percent of the surface or if the waves are greater than 3 feet (Beaufort Sea State 4).

### **B. Monitoring**

Pre-mission monitoring will be used to evaluate the test site for environmental suitability of the mission. Visual surveys will be conducted two hours, one hour, and five minutes prior to the mission to verify that the ZOI (230 m (755 ft)) is free of visually detectable marine

mammals, sea turtles, large schools of fish, large flocks of birds, large *Sargassum* mats, or large concentrations of jellyfish and that the weather is adequate to support visual surveys. The observer will plot and record sightings, bearing, and time for all marine mammals detected, which would allow the observer to determine if animals are likely to enter the test area during detonation. If an animal appears likely to enter the test area during detonation, if marine mammals, sea turtles, large schools of fish, large flocks of birds, large *Sargassum* mats, or large concentrations of jellyfish are present, or if the weather is inadequate to support monitoring, the observer will declare the range fouled and the tactical officer will implement a hold until monitoring indicates that the test area is and will remain clear of detectable marine mammals or sea turtles.

Monitoring of the test area will continue throughout the mission until the last detonation is complete. The mission would be postponed if:

(1) Any marine mammal is visually detected within the ZOI (230 m (755 ft)). The delay would continue until the animal that caused the postponement is confirmed to be outside the ZOI (visually observed swimming out of the range).

(2) Any marine mammal or sea turtle is detected in the ZOI and subsequently is not seen again. The mission would not continue until the last verified location is outside of the ZOI and the animal is moving away from the mission area.

(3) Large *Sargassum* rafts or large concentrations of jellyfish are observed within the ZOI. The delay would continue until the *Sargassum* rafts or jellyfish that caused the postponement are confirmed to be outside of the ZOI either due to the current and/or wind moving them out of the mission area.

(4) Large schools of fish are observed in the water within of the ZOI. The delay would continue until large fish schools are confirmed to be outside the ZOI.

In the event of a postponement, pre-mission monitoring would continue as long as weather and daylight hours allow. If a charge failed to explode, mitigation measures would continue while operations personnel attempted to recognize and solve the problem (detonate the charge).

In the unlikely event that any injured or dead marine mammals were found, and the NEODS exercises were suspected to be the cause of the injury or mortality, the mission would be postponed until NMFS was contacted and able to review the circumstances and work with EAFB to determine whether modifications in the activities are appropriate and necessary.

Post-mission monitoring is designed to determine the effectiveness of pre-mission mitigation by reporting any sightings of dead or injured marine mammals or sea turtles. Post-detonation monitoring, concentrating on the area down current of the test site, would commence immediately following each detonation and continue for at least two hours after the last detonation. The monitoring team would document and report to the appropriate marine animal stranding network any marine mammals or turtles killed or injured during the test and, if

practicable, recover and examine any dead animals. The species, number, location, and behavior of any animals observed by the teams would be documented and reported to the Officer in Tactical Command.

### **C. Reporting**

The Air Force will notify NMFS 2 weeks prior to initiation of each training session. Any takes of marine mammals other than those authorized by the IHA, as well as any injuries or deaths of marine mammals, will be reported to the Southeast Regional Administrator, NMFS, by the next working day. A summary of mission observations and test results, including dates and times of detonations as well as pre- and post-mission monitoring observations, will be submitted to the Southeast Regional Office (NMFS) and to the Division of Permits, Conservation, and Education, Office of Protected Resources (NMFS) within 90 days after the completion of the last training session.

NMFS concurs with these mitigation, monitoring, and reporting measures and will incorporate them into an IHAs and LOAs, if issued. If as a result of this monitoring, NMFS determines that the activity is resulting in more than a negligible impact or the authorization holder is not in compliance with the incidental harassment authorization, NMFS may notify EAFB of the finding and inform EAFB that it is modifying, suspending, or revoking the authorization under section 101(a)(5)(D)(iv) or section 101(a)(5)(B)(ii) of the MMPA.

## **VII. CONCLUSION**

As a result of this environmental review, NMFS has determined that the issuance of a 1-yr IHA, and subsequent promulgation of a new 5-yr rule and issuance of LOAs to take marine mammals incidental to NEODS training operations at EAFB will not significantly affect the quality of the human environment. Additionally, the issuance of these IHAs and LOAs are not controversial and do not set a precedent for future actions with significant effects. Accordingly, an environmental impact statement is not required. A Finding of No Significant Impact has been prepared.

## **VIII. LITERATURE CITED**

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