UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

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JUL 28 2010

Mr. Stephen M. Seiber,
Chief, Eglin Natural Resources
501 De Leon Street, Suite 101
Eglin AFB, FL 32542-5133

Re: Naval Explosive Ordnance Disposal School

Dear Mr. Seiber:

This responds to your March 9, 2010, letter and biological assessment (BA) regarding reinitiation of section 7 consultation under the Endangered Species Act (ESA) for activities associated with the Naval Explosive School Ordnance Disposal School (NEODS) at Eglin Air Force Base (AFB). You requested concurrence from the National Marine Fisheries Service (NMFS) that the proposed action may affect, but is not likely to adversely affect, ESA-listed species or designated critical habitat. NMFS' determinations regarding the effects of the proposed action are based on the description of the action in this informal consultation.

NEODS actions were previously consulted on and a biological opinion issued to Eglin AFB on October 25, 2004. Due to unforeseen circumstances and changes in mission priorities, no NEODS activities have occurred since issuance of that opinion; however, these actions are now planned to occur with some proposed modifications. On March 25, 2010, a conference call was held to discuss the proposed modifications and new information available regarding explosive thresholds since the opinion completed in 2004. Pursuant to 50 CFR 402.16, reinitiation of consultation is required if:

a. The amount or extent of taking specified in the incidental take statement is exceeded;
b. New information reveals the effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
c. The identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or
d. A new species is listed or critical habitat designated that may be affected by the identified action.

Under the revised proposed action, reinitiation of consultation is required under (b) and (c) above. Specifically, improved modeling of the detonations allows for more accurate calculations of the area affected by the proposed action; and thus, a more accurate assessment of the potential risks to listed species.

Also, the action has been modified: the number of annual events is proposed to be increased from six to eight times annually, and net explosive weights (NEWs) used for one-half of those exercises are proposed to be increased from 5 lb to 10 lb.

The previous ESA consultation used a generic equation[1] that is intended for general planning purposes that resulted in inflated, yet conservative estimates of impacts to sea turtles. In that biological opinion, take of sea turtles was conservatively estimated as: one lethal or non-lethal take of a Kemp's ridley sea turtle over five years; four lethal or non-lethal takes of loggerhead sea turtles over five years; and one lethal or non-lethal take of a green sea turtle over five years. Consequently, the new modeling indicates that the risk of harm to sea turtles is considerably lower than the generic model predicted. We have determined that with the new modeling and proposed harm avoidance measures, no take is expected or authorized, and formal consultation is no longer required for the proposed action. You are reminded that any changes to the proposed action may negate the findings of the present consultation and may require reinitiation of consultation with NMFS.

Description of the Proposed Action

The action area is located off the coast of Santa Rosa Island in the Florida Panhandle and includes three test locations (Test Sites A-15, A-10, or A-3) located approximately 1-3 NM from shore in 18.3 m of water (60 ft) (Figure 1). The mission of NEODS is to train Navy divers 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 goal of the training is to give NEODS students the tools and techniques to implement mine counter-measures (MCM) through real scenarios. MCM detonations involve mine hunting by divers and requires mine clearance operations that may affect the marine environment. The students would be taught established techniques for neutralizing mines by diving and hand-placing charges adjacent to inert mines. The detonation of small, live explosive charges adjacent to the mine disables the mine function, and inert mines will be utilized for other training purposes.

The training exercises are proposed to occur offshore of Santa Rosa Island eight times annually. Four days of on-site training are expected at the test sites per exercise. Two of these four days will be utilized to lay the inert mines prior to the training. The other two days will involve live detonations in the Gulf of Mexico. Each demolition training event would involve a maximum of 5 detonations. A total of eight exercises involving up to 40 detonations annually are expected as a result of the proposed action. Half of the annual detonations would involve 5-lb NEW charges, and half would involve 10-lb NEW charges. One large safety vessel and five MK V inflatable 10-ft rubber boats with 50-horsepower (HP) engines would be used to access the Gulf of Mexico waters during training activities. The inflatable boats are not believed to pose any risks to listed species.

[1] Young, G. 1991. Concise methods for measuring the effects of underwater explosions on marine life. Naval Surface Warfare Center, NAVSWC MP 91-220.

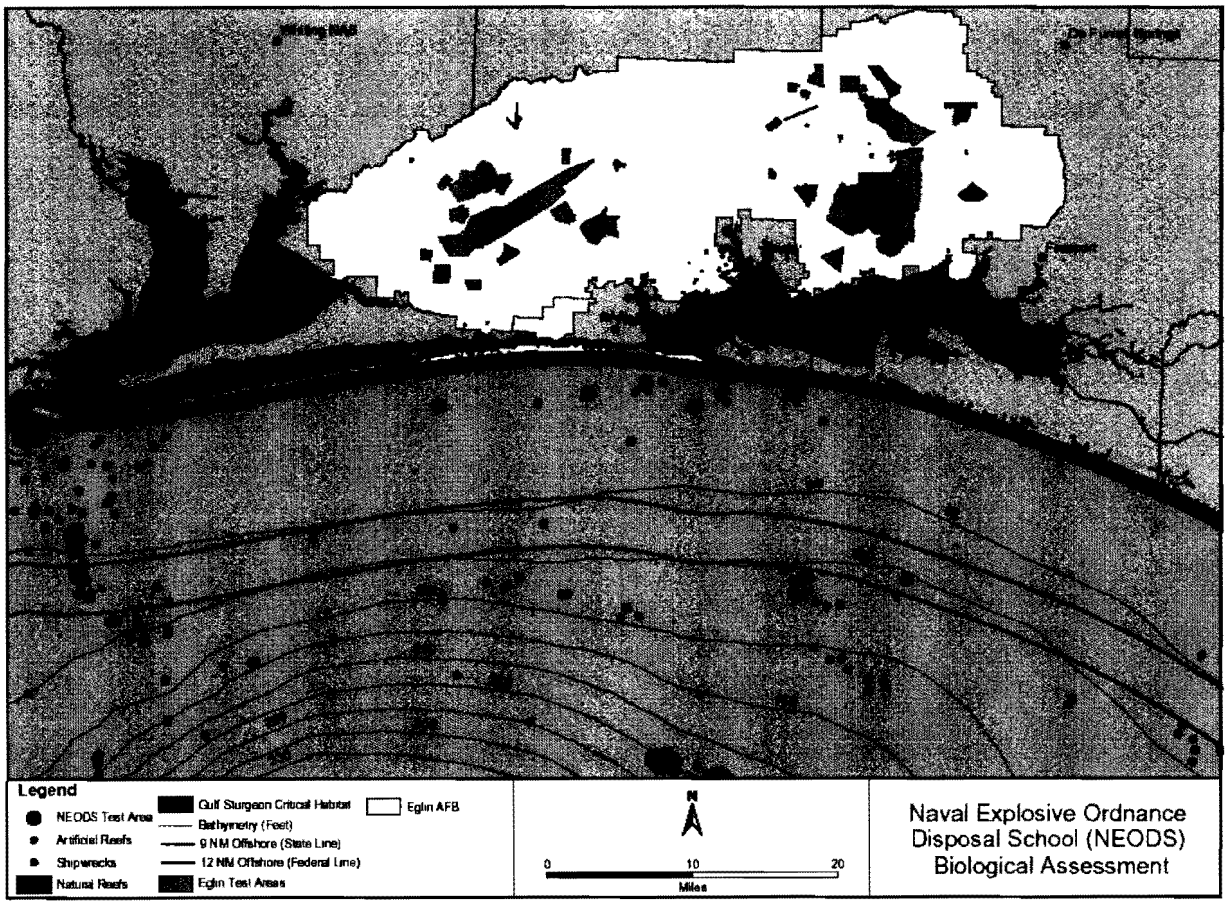


Figure 1. NEODS test target locations.

Summary of Proposed Harm Avoidance Measures

In the event either any human safety concerns arise or protected species are sighted within the noise impact zones, the test will be postponed. The area to be surveyed will be 0.15 NM in every direction from the target, approximately the size of the largest zone of influence (ZOI). Additionally, a buffer area (0.25 NM) will be surveyed for protected marine animals moving toward the ZOI. The survey vessel will leave the safety footprint immediately prior to detonation; however, given the relatively small impact area, visual observation of the ZOI will be ongoing.

Avoidance of impacts to schools of cetaceans will most likely be realized through pre-test monitoring. Any protected species within the ZOI, or imminently on a course for entering the ZOI from the buffer area will result in a "fouled" range resulting in a hold on all activities. Training will not resume until the animal(s) is determined to be outside the ZOI.

Post-mission monitoring would be conducted for two hours after each mission and would attempt to identify and visually assess any marine mammals or turtles in the area.

Hardbottom habitats and artificial reefs would be avoided to alleviate any potential impacts to these habitats. NEODS testing would be delayed if large *Sargassum* mats or large schools of fish or jellyfish were found in the ZOI. Testing would resume only when the mats or schools move

outside the largest ZOI. The NEODS personnel will recover all debris from the targets and charges following test activities.

Complete details of the mitigation procedures plan can be found in the BA submitted by Eglin AFB for ESA consultation on NEODS.

Listed Species and Critical Habitat

Table 1. The following listed species under the jurisdiction of NMFS are known to occur in the action area of the proposed NEODS activities.

Common Name	Scientific Name	Status
green sea turtle[1]	*Chelonia mydas*	Endangered
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered
loggerhead sea turtle	*Caretta caretta*	Threatened
leatherback sea turtle	*Dermochelys coriacea*	Endangered
hawksbill sea turtle	*Eretmochelys imbricata*	Endangered
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	Threatened

NEODS training activities are proposed to occur outside (> 1 NM) of the Gulf sturgeon critical habitat boundary. Gulf sturgeon critical habitat will not be affected.

Hawksbill sea turtle (*Eretmochelys imbricata*) occurrences are expected to be rare in the action area and this species will not be affected by the action. With respect to the United States, nesting occurs in Puerto Rico, the United States Virgin Islands, and the southeast coast of Florida. The largest hawksbill nesting population occurs in the Yucatán Peninsula of Mexico. Adult foraging habitats in Florida are found mainly along peninsular Florida. This species is expected to occur in such low numbers in the action area that the potential for it to be affected by NEODS training is discountable.

Some adult Gulf sturgeon may potentially be found in the NEODS test areas, but in very low numbers only during winter months. Subadult and adult Gulf sturgeon show a preference for shoreline habitats in water depths less than 3.5 m and areas lacking in seagrasses. During winter feeding migrations, the available telemetry data indicates that Gulf sturgeon prefer water depths of 25 ft or less. Recently, Eglin AFB has been working with the USFWS to conduct a multi-year tagging and tracking project in the Choctawhatchee, Yellow, Blackwater, and Escambia Rivers. Preliminary data show that adults migrate into the Gulf of Mexico in late October/early November and remain off Eglin's Santa Rosa Island property until approximately mid-December when the fish then migrate both east and west out of the area. Data show that 82 percent of the detections occurred within 500 m of the shoreline in water depths < 40 ft, and 99 percent of the detections occurred within 1,000 m of the shoreline in water depths < 60 ft. The NEODS training is proposed to occur in depths of 60 ft. A maximum of 16 detonations (40 percent) are expected to occur annually during the winter months when Gulf sturgeon may be present. Considering that Gulf sturgeon prefer nearshore habitats in this area, the low expected occurrence in the NEODS training depths, and fewer detonations when Gulf sturgeon occur in the vicinity, the potential for any adverse effects occurring to Gulf sturgeon is so low as to be considered discountable.

Based on the above analysis, NMFS has determined that hawksbill sea turtles and Gulf sturgeon are not likely to be adversely affected by the NEODS activities.

Effects of the Action

NMFS considered the potential effects of NEODS activities on four species of sea turtles (loggerhead, leatherback, green, and Kemp's ridley) found in the test areas. The effects analysis considers the projections made by Eglin on the proposed number of NEODS trainings, detonations, and other information to conduct this analysis. This analysis includes the following components that have the potential to adversely affect these species.

- Detonations of explosives
- Marine debris

We consider these activities below for their potential to harm individual animals and disrupt their habitats, as well as have other effects whose risks to sea turtles are considered in the analysis. NMFS is particularly concerned about disruptions to individuals or populations of endangered species that may manifest as an animal that fails to feed successfully, breed successfully (which can result from feeding failure), or complete its life history because of altered environmental variables or behavioral patterns.

Based on published and unpublished studies, explosions may result in harm to sea turtles. Establishment and monitoring of impact zones will minimize the risks associated with the proposed action. In order to calculate the likelihood that sea turtles may be adversely affected by NEODS activities, we considered variables such as the area of the sea affected by NEODS activities, the density of animals in the area (Table 2), and harm avoidance measures proposed to minimize the potential risk to sea turtles.

Table 2. Average annual sea turtle densities in the eastern Gulf of Mexico and adjusted densities used in the risk analyses for each effect. Adjusted density estimates use a dive profile of 10 percent (i.e., sea turtles are assumed to spend an average of 10 percent of their time at the surface).

Species	Density (individuals km^{-2})	Adjusted Density (individuals km^{-2})
leatherback	0.0029	0.0290
green	0.0137	0.1370
Kemp's ridley	0.0079	0.0790
loggerhead	0.0532	0.5320

Based on the greatest reported densities between 0-40 fm (0-73 m) in the eastern Gulf of Mexico.[2]

Impacts to sea turtles could result from exposure to the energy released from the explosive material. A charge packed with C-4 explosive material will be set up adjacent to each of the five mines with a NEW of 5 lb or 10 lb. The five charges will be detonated in approximately 60 ft of

[2] Epperly, S., L. Avens, L. Garrison, T. Henwood, W. Hoggard, J. Mitchell, J. Nance, J. Poffenberger, C. Sasso, E. Scott-Denton, and C. Yeung. 2002. Analysis of sea turtle bycatch in the commercial shrimp industry of southeast U.S. waters and the Gulf of Mexico. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SEFSC-490. 88 pp.

water. Each detonation will be separated by a maximum time of 20 minutes and will only occur during daylight hours.

To determine the effects of explosions, Eglin AFB relied on marine mammal thresholds of exposure to 205 dB re $1\mu Pa^2 \cdot s$ (energy flux density or EFD) as the potential to cause injury. This is the level calculated as the onset of eardrum rupture in marine mammals and is applied to sea turtles for this analysis. Energy exposure levels below 205 dB EFD are considered to have the potential to result in non-injurious effects from temporary hearing loss or behavioral responses. Although temporary hearing loss (or TTS) is considered a non-injurious take for marine mammals, the relative importance of temporary hearing loss hearing in sea turtles, given their life histories, is not well understood and no accepted TTS criterion exist for sea turtles. Considering the very short duration of the detonations (individual pops), the potential effects of TTS and behavioral reactions are considered qualitatively in the below analysis.

NEODS MCM detonations will occur on the seafloor at depths of approximately 18.3 m (60 ft) using NEWs of either 5 lb or 10 lb. Using sea turtle densities (Table 2) and the small area of the zone of influence (Table 3), we have determined that there is a low likelihood sea turtles will be injured from individual detonations or from all annual detonations combined (Table 4) associated with NEODS activities. With implementation of the proposed harm avoidance measures, the risk of injury to sea turtles will be reduced to discountable levels.

Table 3. Zone of influence (ZOI) resulting from 5-lb and 10-lb charges of C-4 explosives detonated at a depth of 18 m in summer and winter months accounting for temperature.

NEW (lb)	Range for 205 dB EFD in Summer (m | km^2)	Range to 205 dB EFD in Winter (m | km^2)
5	52.1 | 0.0085	52.2 | 0.0086
10	77.0 | 0.0186	77.0 | 0.0186

Table 4. The annual numbers of sea turtles estimated to be exposed to $\geq$ 205 dB EFD.

Species	Annual Exposures to 205 dB
leatherback sea turtle	0.015
green sea turtle	0.074
Kemp's ridley sea turtle	0.043
loggerhead sea turtle	0.288

Considering the effects on temporary hearing loss, the duration of the noise emitted from NEODS training is short and hearing effects are not expected from exposure to a single pulse of noise with the proposed harm avoidance measures. Five detonations per training cycle (1-2 days) may occur, and the detonations will be separated in time by at least 20 minutes. Due to the short duration of the sounds and the proposed harm avoidance measures to detect sea turtles and avoid exposures, the potential for any adverse effects in the form of TTS will be reduced to discountable levels.

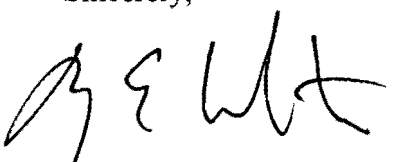
Considering the effects of noise from the detonations on the likelihood of harm from behavioral reactions in the test area, some possible reactions to single, impulsive noises include startle responses, rapid swimming, diving, and swimming towards the surface at the onset of the sound. The infrequent detonations associated with NEODS training could possibly result in these types of startle responses by listed species; however, startle reactions are expected to be short term and sea turtles and Gulf sturgeon are expected to continue their normal behaviors. With implementation of the proposed harm avoidance measures to monitor for sea turtles and delaying detonations when sea turtles are sighted, the effects of startle responses are expected to be short-term and minor. Startle responses are not expected to result in any adverse effects to Gulf sturgeon or sea turtles.

Marine Debris
Debris is the physical material deposited in the waters during training activities, analogous to litter, and may affect listed species through entanglement or ingestion. Due to the nature of NEODS training, accidental discharges of debris are unlikely. Although marine debris resulting from the destruction of mines will occur, mine shapes and debris are proposed to be recovered and removed from the water when NEODS training is completed. These materials are not expected to be ingested or result in entanglement of sea turtles, and no adverse impacts are expected.

Conclusion
This concludes your consultation responsibilities under the ESA for species under NMFS' purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action.

We have enclosed additional information on other statutory requirements that may apply to this action, and on NMFS' Public Consultation Tracking System to allow you to track the status of ESA consultations. If you have any questions, please contact Kyle Baker by e-mail at Kyle.Baker@noaa.gov. Thank you for your continued cooperation in the conservation of listed species.

Sincerely,



Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosure

File: 1514-22.F.1.FL
Ref: I/SER/2010/00897

PCTS Access and Additional Considerations for ESA Section 7 Consultations (Revised 7-15-2009)

Public Consultation Tracking System (PCTS) Guidance: PCTS is an online query system at **https://pcts.nmfs.noaa.gov/** that allows federal agencies and U.S. Army Corps of Engineers' (COE) permit applicants and their consultants to ascertain the status of NMFS' Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultations, conducted pursuant to ESA section 7, and Magnuson-Stevens Fishery Conservation and Management Act's (MSA) sections 305(b)2 and 305(b)(4), respectively. Federal agencies are required to enter an agency-specific username and password to query the Federal Agency Site. The COE "Permit Site" (no password needed) allows COE permit applicants and consultants to check on the current status of Clean Water Act section 404 permit actions for which NMFS has conducted, or is in the process of conducting, an ESA or EFH consultation with the COE.

For COE-permitted projects, click on "Enter Corps Permit Site." From the "Choose Agency Subdivision (Required)" list, pick the appropriate COE district. At "Enter Agency Permit Number" type in the COE district identifier, hyphen, year, hyphen, number. The COE is in the processing of converting its permit application database to PCTS-compatible "ORM." An example permit number is: SAJ-2005-000001234-IPS-1. For the Jacksonville District, which has already converted to ORM, permit application numbers should be entered as SAJ (hyphen), followed by 4-digit year (hyphen), followed by permit application numeric identifier with no preceding zeros. For example: SAJ-2005-123; SAJ-2005-1234; SAJ-2005-12345.

For inquiries regarding applications processed by COE districts that have not yet made the conversion to ORM (e.g., Mobile District), enter the 9-digit numeric identifier, or convert the existing COE-assigned application number to 9 numeric digits by deleting all letters, hyphens, and commas; converting the year to 4-digit format (e.g., -04 to 2004); and adding additional zeros in front of the numeric identifier to make a total of 9 numeric digits. For example: AL05-982-F converts to 200500982; MS05-04401-A converts to 200504401. PCTS questions should be directed to Eric Hawk at Eric.Hawk@noaa.gov. Requests for username and password should be directed to PCTS.Usersupport@noaa.gov.

EFH Recommendations: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the MSA requirements for EFH consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Marine Mammal Protection Act (MMPA) Recommendations: The ESA section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA section 101 (a)(5) is necessary. Please contact NMFS' Permits, Conservation, and Education Division at (301) 713-2322 for more information regarding MMPA permitting procedures.