DEPARTMENT OF DEFENSE

Department of the Navy

Record of Decision for the Atlantic Fleet Training and Testing Final Environmental Impact Statement/Overseas Environmental Impact Statement

AGENCY: Department of the Navy, Department of Defense

ACTION: Record of Decision

SUMMARY: The United States (U.S.) Department of the Navy (Navy) proposes to conduct training and testing activities - that will include the use of active sonar and explosives - primarily within existing range complexes and testing ranges in the western Atlantic Ocean off the east coast of the U.S., in the Gulf of Mexico, and in portions of the Caribbean Sea. The Navy, after carefully weighing the strategic, operational readiness, and environmental consequences of the Proposed Action, announces its decision to implement Alternative 2, the Navy's Preferred Alternative, as described in the Atlantic Fleet Training and Testing Final Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS). Under Alternative 2, the Navy will be able to meet current and future Navy and Department of Defense (DoD) training and testing requirements.

After thoroughly reviewing its environmental compliance requirements, the Navy instituted a policy in the year 2000 designed to comprehensively address these requirements. That policy, the Navy's At-Sea Policy, resulted in part, in a series of EIS/OEISs on training and testing activities at U.S. at-sea range complexes and operating areas. These EIS/OEISs served to support the National Oceanic and Atmospheric Administration's (NOAA) issuance of Marine Mammal Protection Act (MMPA) incidental take authorizations (issued because of the potential effects of some training and testing activities on species protected by federal law). The incidental take authorizations, completed in 2008 and 2009, will begin to expire in early 2014. This EIS/OEIS updates the analyses for several range complexes and testing ranges and supports issuance of new incidental take authorizations.

Previous Navy EIS/OEISs were developed for single range complexes. This EIS/OEIS combines multiple range complexes and testing ranges into one document, which allows for a more comprehensive analysis of impacts across multiple range complexes and testing areas.

This EIS/OEIS reassessed the environmental analyses of Navy at-sea training and testing activities contained in seven separate EIS/OEISs and various environmental planning documents, and consolidated these analyses into a single environmental planning document. This reassessment supports authorization of marine mammal incidental take permits under the MMPA and incidental takes of threatened and endangered marine species under the Endangered Species Act (ESA). The seven EIS/OEIS documents that were consolidated are:

- *Atlantic Fleet Active Sonar Training Final EIS/OEIS*
- *Virginia Capes Range Complex Final EIS/OEIS*
- *Navy Cherry Point Range Complex Final EIS/OEIS*
- *Jacksonville Range Complex Final EIS/OEIS*

- *Naval Surface Warfare Center Panama City Division Mission Activities Final EIS/OEIS*
- *Gulf of Mexico Range Complex Final EIS/OEIS*
- *Undersea Warfare Training Range Final OEIS/EIS*

The analysis adjusted baseline training and testing activities from current levels to the levels needed to support Navy training and testing requirements beginning December 2013. As part of these adjustments, the Navy accounted for other activities and sound sources not addressed in the previous analyses. The study analyzed the potential environmental impacts of training and testing activities in additional areas (areas not covered in previous environmental analysis), and documented where training and testing historically occurs including Navy ports, naval shipyards and Navy-contractor shipyards, and the transit channels serving these areas. The at-sea environmental impact analyses for Navy activities in the previous documents were updated to account for force structure changes, including those resulting from the development, testing, and use of weapons, platforms, and systems that will be operational by 2019, and enhanced range capabilities. Finally, the environmental analysis was updated with the best available science and most current acoustic analysis methods to evaluate the potential effects of training and testing activities on the marine environment.

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SUPPLEMENTARY INFORMATION: Pursuant to § 102(2)(c) of NEPA of 1969, §§ 4321 *et seq*. of Title 42 United States Code (U.S.C.), Council on Environmental Quality regulations (Parts 1500-1508 of Title 40 Code of Federal Regulations [C.F.R.]), Department of Navy regulations (Part 775 of Title 32 C.F.R.), and Executive Order 12114, *Environmental Effects Abroad of Major Federal Actions*, the Navy announces its decision to implement the Navy's Preferred Alternative, Alternative 2, as described in the AFTT Final EIS/OEIS. The Navy identified its need to support and conduct current, emerging, and future training and testing activities in the Study Area, which is made up of air and sea space in the western Atlantic Ocean off the east coast of the United States, in the Gulf of Mexico, and in portions of the Caribbean Sea. A detailed description of Alternative 2 is provided in Chapter 2 (Description of Proposed Action and Alternatives) of the Final EIS/OEIS. This decision will enable the Navy to meet changing military readiness requirements to achieve the levels of operational readiness required under Title 10 U.S.C. § 5062.

BACKGROUND AND ISSUES: The Navy historically uses areas along the eastern coast of the United States and in the Gulf of Mexico for training and testing. While specific training and testing activities, activity levels, and locations have evolved over the years to meet changing threats and incorporate improved technology, and will continue to evolve for these purposes, the overall types of activities and geographic area the Navy has trained and tested in have not appreciably changed in several decades. These areas have been designated by the Navy into geographic regions and named "range complexes." A range complex is a set of adjacent areas of sea space, undersea space, land ranges, and overlying airspace delineated for military training and testing activities. Range complexes provide controlled and safe environments where military ship, submarine, and aircraft crews can train in realistic conditions. The combination of undersea ranges and operating areas (OPAREAs) with land training ranges, safety landing fields, and nearshore amphibious landing sites is critical to realistic training, and allows instruments on the range to capture data on the effectiveness of tactics and equipment—data that provide a feedback mechanism for training evaluation.

Military readiness training must be as realistic as possible to provide the experiences so important to success and survival. While simulators and synthetic training are critical elements of training – to provide early skill repetition and enhance teamwork – there is no substitute for the live training in a realistic environment. The range complexes, test ranges, and OPAREAs provide these realistic environments, with sufficient sea and airspace vital for safety and mission success. Just as a pilot would not be ready to fly solo after simulator training, a Navy commander cannot allow military personnel to engage in real combat activities based merely on simulator training.

The proximity of the AFTT range complexes to naval homeports is strategically important to the Navy because close access allows for efficient execution of training and testing activities and non-training maintenance functions, as well as access to alternate airfields when necessary. The proximity of training to homeports also ensures that Sailors and Marines do not have to routinely travel far from their families. For example, the Norfolk, Virginia and Jacksonville, Florida areas are home to thousands of military families. The Navy is required to track and, where possible, limit the amount of time Sailors and Marines spend deployed from home. Less time away from home is an important factor in military readiness, morale, and retention. The proximate availability of the AFTT range complexes is critical to Navy efforts in these areas.

The Navy also requires access to a realistic environment to conduct testing of ships, submarines, aircraft, and weapon systems. In many cases, Navy facilities in or near the Study Area provide support for testing of platforms and systems on their adjacent at-sea testing ranges. These existing facilities and their associated ranges support specific Navy testing requirements. Fleet assets may support testing activities on these test ranges. In addition, the Navy's research and acquisition community testing is frequently conducted on fleet range complexes and in other locations in the Study Area using fleet assets to support the testing. The range complexes and testing ranges analyzed in this Final EIS/OEIS have each existed for many decades, dating back to the 1940s. Range use and infrastructure have developed over time as training and testing requirements in support of modern warfare have evolved. The Navy has not proposed and is not proposing to create new range complexes or OPAREAs. Further, the activities analyzed within this Final EIS/OEIS are the same as or are similar to those that historically occur within the at-sea portions of the current range complexes and testing ranges. Land-based activities, when applicable, were analyzed in prior EIS/OEISs and are not proposed to change, and therefore are not re-addressed within this document. Thus, for example, activities conducted at Rodman Range in the Jacksonville Range Complex are not included in this Final EIS/OEIS.

The Navy's ability to conduct testing on AFTT test ranges and range complexes in close proximity to naval homeports and research and acquisition community field activities is strategically important since close access allows for efficient execution of the testing activities. Test range site locations along with associated field activities were originally established to support specific Navy mission at-sea testing needs using a selection process which included testing requirements along with proximity to shore-based support facilities, infrastructure and the necessary logistical support required to meet the objectives of the testing activities. These same principles also apply to pierside and at-sea testing that must occur in close proximity to naval shipyards and Navy-contractor shipyards to support construction and maintenance testing requirements.

Purpose and Need

The purpose of the Proposed Action is to conduct training and testing activities to ensure that the Navy meets its mission under Title 10 U.S.C. § 5062, which is to maintain, train, and equip combat-ready naval

forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. This mission is achieved in part by conducting training and testing within the Study Area.

Public Involvement

The Navy published a Notice of Intent for this EIS/OEIS in the *Federal Register* (75 FR 41163) and 20 newspapers on 15 July 2010. In addition, a Notice of Intent/Notice of Scoping Meetings was distributed on 12-15 July 2010, to 1,388 federal, state, and local elected officials, government agencies, federally-recognized tribes, and individuals. The Notice of Intent provided an overview of the Proposed Action and the scope of the EIS/OEIS, and initiated the 60-day scoping period. During the development of the Draft EIS/OEIS, the Navy initiated a mutual exchange of information through early and open communications with interested stakeholders. This mutual exchange began in 2010 with five scoping meetings, which were held on 23 August 2010 (Boston, MA), 25 August 2010 (Virginia Beach, VA), 26 August 2010 (Morehead City, NC), 31 August 2010 (Jacksonville, FL), and 1 September 2010 (Panama City, FL). The open house style meetings had informational posters and written information, with Navy staff and project experts available to answer participants' questions. The Navy made available a laptop computer to submit comments via the project web site, as well as comment sheets for written comments. Comments were also received as letters submitted through the mail. The Navy received scoping submittals from 69 individuals and groups resulting in 107 total comments as some submittals addressed more than one issue.

The 60-day public comment period on the Draft EIS/OEIS began with the issuance of the Notice of Availability (77 FR 2771) and a Notice of Public Meetings (77 FR 2772) in the *Federal Register* on 11 May 2012. The original 45-day public comment period was extended by 15 days (77 FR 29636) to allow the public additional time to review and comment on the Draft EIS/OEIS. The public comment period began on 11 May 2012 and concluded on 10 July 2012. The Navy made significant efforts to notify the public to ensure maximum public participation during the public comment period, including using letters, postcards, press releases, and newspaper display advertisements (The Portland Press Herald [Portland, ME], The Times Record [Bath, ME], The Standard Times [New Bedford, MA], Boston Herald [Boston, MA], Newport Daily News [Newport, RI], Providence Journal [Providence, RI], The Daily Times [Salisbury, MD], Outer Banks Sentinel [Outer Banks, NC], The Virginian-Pilot [Norfolk, VA], The Daily Press [Newport News, VA], Jacksonville Daily News [Jacksonville, NC], Wilmington Star News [Wilmington, NC], Charleston Post and Courier [Charleston, SC], Savannah Morning News [Savannah, GA], Florida Times Union [Jacksonville, FL], Florida Sun Sentinel [Fort Lauderdale, FL], Florida Today [Brevard, FL], Panama City News Herald [Panama City, FL], Mississippi Press [Pascagoula, MS], Pensacola News Journal [Pensacola, FL], Times-Picayune [New Orleans, LA], Galveston Daily News [Galveston, TX], and Caller-Times [Corpus Christi, TX]).

The Notice of Public Meetings included a project description and dates and locations of the five public meetings. The comment period allowed a variety of opportunities for the public to comment on the Draft EIS/OEIS (77 FR 27742). Copies of the Draft EIS/OEIS were provided to 28 public libraries in cities along the east coast and the Gulf of Mexico (Annapolis, MD; Panama City, FL; Mobile, AL; Boston, MA; Kingsland, GA; Beaufort, NC; Charleston, SC; Corpus Christi, TX; Metairie, LA; Hatteras, NC; Havelock, NC; Houston, TX; Jacksonville, FL; Kill Devil Hills, NC; Meridian, MS; Wilmington, NC; New Orleans, LA; Norfolk, VA; Jacksonville, NC; Portland, ME; Providence, RI; New London, CT; Brownsville, TX; Santa Rosa Beach, FL; Morehead City, NC; Pensacola, FL; and West Palm Beach, FL) and the document was available on the project website (http://aftteis.com/) for review. During five open house public meetings, which were held on 30 May 2012 (Providence, RI), 5 June 2012 (Jacksonville, FL), 6 June 2012 (Panama City, FL), 11 June 2012 (Virginia Beach, VA), and 12 June 2012 (Swansboro, NC), Navy representatives were

available to provide information and answer questions one-on-one. Comment sheets and a digital voice recorder were made available to attendees.

Commenters provided their input on the Draft EIS/OEIS in letters submitted through mail, written or oral comments received at the public meetings, and via the project website. The Navy also received form letters from one non-governmental organization and an online petition from another non-governmental organization. Approximately 76,000 copies of the form letter were received, and the online petition generated approximately 477,000 signatures.

The Navy made minor changes to the AFTT EIS/OEIS after the public notice and comment period closed for the Draft AFTT EIS/OEIS. The changes include: (1) changes to the tempo or location of certain proposed activities, (2) refinement to the modeling inputs for training and testing, and (3) additional post-model analysis of acoustic effects and implementation of mitigation. The Navy concluded that these changes did not rise to substantial changes to the proposed action nor did the changes contain significant new information relevant to environmental concerns or impacts, and thus, determined that supplementation of the EIS/OEIS was not necessary. However, the Navy provided the public with the opportunity to review and comment on the changes before the issuance of the Final EIS/OEIS via the MMPA Proposed Rule in the Federal Register. At the Navy's request, the National Marine Fisheries Service (NMFS) identified and summarized the changes made after the publication of the DEIS/OEIS and invited the public to specifically comment on these changes. NMFS, at the request of the Navy, informed the public that all comments received on the MMPA Proposed Rule that addressed any of the three above listed subjects of changes would be considered and addressed by the Navy in the Final EIS/OEIS. 78 FR 7050 (31 January, 2013). In addition to this notification via the MMPA Proposed Rule, the Navy directly notified stakeholders and interested parties via letters and emails, and posted a link to the Proposed Rule on the public web site (www.AFTTEIS.com). NMFS received comments from three non-governmental organizations on these subjects and the Navy addressed these comments in the FEIS/OEIS. Furthermore, some comments requested additional detail on the subjects, and the Navy responded by adding detail and discussion to the FEIS and publishing a new technical report on the public web site (www.AFTTEIS.com) entitled "The Analysis of Animal Avoidance Behavior and Mitigation Effectiveness Technical Report." This additional material provides in-depth numerical information on the changes and the impacts of the changes on estimated exposures to marine mammals, and confirms that these changes were not significant. As explained below, the Navy did not receive any follow-up comments on these subjects within the 30-day wait period following the publication of the FEIS/OEIS that ended on 29 September 2013.

The Notice of Availability (NOA) for the Final EIS/OEIS was published in the Federal Register on 30 August 2013 (78 FR 53754). Concurrent with the publication in the Federal Register, notifications of the availability of the Final EIS/OEIS were published for three consecutive days in the newspapers listed above with the addition of the Newport Daily News (Newport, RI). Notices were also mailed to individuals, agencies, associations, and other interested parties who asked to be notified during the scoping and Draft EIS public comment period, as well as members of Congress, governors of east and Gulf coast states, and other elected or public officials. The AFTT Final EIS/OEIS also was made available on the project website and at 28 public libraries in cities along the east coast and the Gulf of Mexico (Annapolis, MD; Panama City, FL; Mobile, AL; Boston, MA; Kingsland, GA; Beaufort, NC; Charleston, SC; Corpus Christi, TX; Metairie, LA; Hatteras, NC; Havelock, NC; Houston, TX; Jacksonville, FL; Kill Devil Hills, NC; Meridian, MS; Wilmington, NC; New Orleans, LA; Norfolk, VA; Jacksonville, NC; Portland, ME; Providence, RI; New London, CT; Brownsville, TX; Santa Rosa Beach, FL; Morehead City, NC; Pensacola,

FL; and West Palm Beach, FL). No comments were received on the Final EIS/OEIS within the 30-day wait period that ended on 29 September 2013.

Alternatives Considered

The identification, consideration, and analysis of alternatives are important aspects of the NEPA process and contribute to the goal of objective decision-making. The Council on Environmental Quality requires and provides guidance on the development of alternatives. The regulations implementing NEPA require the decision maker to consider the environmental effects of the Proposed Action and a range of alternatives (including the No Action Alternative) to the Proposed Action (40 C.F.R. § 1502.14). The range of alternatives (including the No Action Alternative) include reasonable alternatives, which must be rigorously and objectively explored, as well as other alternatives that were considered but eliminated from detailed study. To be reasonable, an alternative must meet the stated purpose of and need for the Proposed Action. An EIS must explore all reasonable mitigation measures for a Proposed Action.

The Navy developed the alternatives considered in this EIS/OEIS after careful assessment by subject matter experts, including military units and commands that utilize the ranges, military range management professionals, and Navy environmental managers and scientists.

Alternatives eliminated from further consideration were:

- Alternative Training and Testing Locations
- Reduced or No Training and Testing
- Temporal or Geographic Constraints within the Study Area
- Simulated Training and Testing

The Navy determined that these alternatives did not meet the purpose of and need for the Proposed Action after a thorough consideration of each.

Three alternatives are analyzed in this EIS/OEIS.

- **No Action Alternative:** Baseline training and testing activities, as defined by existing Navy environmental planning documents, including Atlantic Fleet Active Sonar Training EIS/OEIS, Virginia Capes Range Complex EIS/OEIS, Navy Cherry Point Range Complex EIS/OEIS, Jacksonville Range Complex EIS/OEIS, Naval Surface Warfare Center Panama City Division EIS/OEIS, Gulf of Mexico Range Complex EIS/OEIS, Key West Range Complex Environmental Assessment/Overseas Environmental Assessment (EA/OEA), and the EA of Test Operations in Rhode Island Waters for the Naval Undersea Warfare Center Division, Newport. The baseline testing activities also include those testing events that historically occur in the Study Area and have been subject to previous analyses pursuant to NEPA/Executive Order 12114.

- **Alternative 1:** Overall expansion of the Study Area plus adjustments to types and levels of activities, from the baseline as necessary to support current and planned Navy training and testing requirements. This Alternative considers all activities analyzed in the No Action Alternative plus:

    - analysis of areas where Navy training and testing would continue as in the past, but were not considered in previous environmental analyses. This Alternative would not expand the area where the Navy trains and tests, but would simply expand the area that is to be analyzed.
    - mission requirements associated with force structure changes, including those resulting from the development, testing, and ultimate introduction of new platforms (vessels and aircraft) and weapon systems into the fleet.

- **Alternative 2 (Preferred Alternative):** Consists of Alternative 1 plus the establishment of new range capabilities, modifications of existing capabilities, and adjustments to type and levels of training and testing. Specifically, Alternative 2 includes the following training activities: additional surface-to-air, surface-to-surface, and anti-submarine warfare activities during post-delivery test and trial and during training events, which will be required to support an increased or accelerated delivery of surface ships and submarines; increase in air combat maneuver events in the Key West Range Complex; introduce surface ships outfitted with kinetic energy weapon capability and train with this new weapon system; perform additional training with unmanned vehicles in support of mine warfare and of civilian port defense missions in commercial and civilian ports (events would occur at various east coast and Gulf of Mexico locations). Alternative 2 also includes the following testing activities: new ship construction testing to include more sea trials for aircraft carriers, Joint High Speed Vessels, and amphibious assault ships; more Littoral Combat Ship Mission Package test events; increased post-homeporting testing; life cycle activities, including more ship signature test events; Naval Sea Systems Command Range activities, including more test events on each of the Naval Sea Systems Command's ranges and contingency for increased mine countermeasure testing at South Florida Ocean Measurement Facility Testing Range; anti-surface warfare/anti-submarine warfare, including more events conducted, as well as conducting kinetic energy weapon testing on vessels at sea; mine warfare testing, including more events conducted; shipboard protection systems and swimmer defense testing, including more events conducted and increased flexibility in conducting all chemical simulant testing in either location identified; unmanned vehicle testing, including more events conducted and increased flexibility in conducting all underwater deployed unmanned aerial vehicle testing in either location identified (including the introduction of the MQ-4C Triton Unmanned Aircraft Systems and their use during maritime patrol aircraft anti-submarine warfare testing events); increased flexibility in conducting all at-sea explosive testing in either location identified; and more events conducted overall, with a 10 percent increase in the tempo of all proposed Naval Air System Command testing activities.

While the No Action Alternative is the environmentally preferable alternative, it fails to meet the Purpose and Need of the Proposed Action, and therefore, could not be selected. Alternative 1 and Alternative 2 remain as viable alternatives that meet the Purpose and Need of the Proposed Action. Although Alternative 1 has a slightly smaller environmental impact than Alternative 2, and due to fewer total proposed activities than Alternative 2 is the environmentally preferable alternative, however, the difference in the overall potential for environmental impacts is insignificant. Therefore, the Navy has selected Alternative 2 as it provides greater flexibility in allowing the Navy and DoD to meet current and future training and testing requirements without appreciably increasing environmental impacts.

The analysis of pile driving activities associated with the construction of the elevated causeway system, a component of the Joint Logistics Over-the-Shore training exercise, was included in the EIS/OEIS, however after publication of the Final EIS/OEIS the Navy decided to defer a final decision on this activity until the Navy completes further NEPA analysis and MMPA and ESA consultation. Therefore, the pile driving component will not be implemented as part of the selection of Alternative 2.

Summary of Environmental Impacts

The evaluation of the impacts from acoustic sources or explosives was a major piece of the analysis. The Navy performed a quantitative analysis to estimate the number of marine mammals that could be affected by acoustic sources or explosives used during Navy training and testing activities. To conduct this analysis, the Navy developed a set of data and new software tools for quantification of estimated marine mammal impacts from Navy activities. This new approach is the resulting evolution of the basic

model previously used by the Navy and reflects a more complex modeling approach as described in Section 3.4 of the EIS/OEIS.

In summary, the Navy Acoustic Effects Model improves upon previous modeling efforts in several ways. First, unlike earlier methods that modeled sources individually, the Navy Acoustic Effects Model has the capability to run all sources within a scenario simultaneously, providing a more realistic depiction of the potential effects of an activity. Second, previous models calculated sound received levels within set volumes of water and spread animals uniformly across the volumes; in the Navy Acoustic Effects Model, animats (virtual animals) are distributed nonuniformly based on higher resolution species-specific density, depth distribution, and group size information, and animats serve as dosimeters, recording energy received at their location in the water column. Third, a fully three-dimensional environment is used for calculating sound propagation and animat exposure in the Navy Acoustic Effects Model, rather than a two-dimensional environment where the worst case sound pressure level across the water column is always encountered. Finally, current efforts incorporate site-specific bathymetry, sound speed profiles, wind speed, and bottom properties into the propagation modeling process rather than the flat-bottomed provinces used during earlier modeling.

Although this more complex computer modeling approach accounts for various environmental factors affecting acoustic propagation, the current software tools do not consider the likelihood that a marine mammal would attempt to avoid repeated exposures to a sound or avoid an area of concentrated activity where a training or testing event may be focused. Additionally, the software tools do not consider the implementation of mitigation (*e.g.*, stopping sonar transmissions when a marine mammal is within a certain distance of a ship or mitigation zone clearance prior to detonations). In both of these situations, naval activities are modeled as though an activity would occur regardless of proximity to marine mammals and without any horizontal movement by the animal away from the sound source or human activities. Therefore, the final step of the quantitative analysis of acoustic effects is to consider the implementation of mitigation and the possibility that marine mammals would avoid continued or repeated sound exposures.

The Navy's environmental analysis addressed the potential environmental impacts of implementing Alternative 2 and found that there will be only negligible impacts on the following resource areas: sediments and water quality, air quality, public health and safety, cultural resources, and socioeconomic resources. The discussion below summarizes the remaining environmental impacts associated with implementing Alternative 2:

- Marine Habitats: The greatest potential impact to marine habitats will be from underwater explosives near the hard bottom habitats. However, most detonations will occur at or near the surface, and those that do occur on the seafloor will be located in primarily soft-bottom habitat. Changes to marine substrates could include localized disturbance of the seafloor and cratering of soft bottom sediments. Any impacts on soft bottom habitats will be short-term and impacts on hard bottom, though unlikely, would be long-term. Activities as proposed under Alternative 2 will not impact the ability of marine substrates to serve their function as habitat. Mitigation measures designed to avoid and minimize potential impacts on sensitive habitats (e.g., hard bottom, artificial reefs, shipwrecks) will be implemented.

- Marine Mammals: The use of sonar and other active acoustic sources may result in exposures of certain marine mammals to Level B or Level A harassment, or mortality under the MMPA. The use of explosives may result in exposure of certain marine mammals to Level B or Level A harassment, or

mortality under the MMPA. Vessel strike could result in Level A harassment or mortality under the MMPA, specifically to certain large whale species. Although a few individual marine mammals may experience long-term impacts such as potential injury and mortality, population-level impacts are not expected.

Swimmer defense airguns, weapons firing noise, vessel noise, aircraft noise, electromagnetic devices, high energy lasers, in-water devices, military expended materials, and seafloor devices may result in exposures of marine mammals to only minor and temporary behavioral reactions, which do not rise to the level of a take under the MMPA. Impacts are expected to be short-term and not result in significant changes in behavior, growth, survival, annual reproductive success, lifetime reproductive success (fitness), or species recruitment. In cases where potential impacts rise to the level that warrants mitigation, mitigation measures designed to reduce the potential impacts will be implemented.

Pursuant to the ESA, sonar and other acoustic sources, explosives, and vessel strikes are likely to adversely affect (by way of harassment or harm) some ESA listed marine mammals which include the North Atlantic right whale (*Eubalaena glacialis*), bowhead whale (*Balaena mysticetus*), humpback whale, (*Megaptera novaeangliae*), sei whale (*Balaenoptera borealis*), fin whale (*Balaenoptera physalus*), blue whale (*Balaenoptera musculus*), sperm whale (*Physeter macrocephalus*), ringed seal (*Pusa hispida*) and the West Indian manatee (*Trichechus manatus*). No harm to the North Atlantic right whale is expected from these stressors due to species specific mitigation requirements.

Other stressors such as swimmer defense air guns, weapon firing noise, vessel noise, aircraft noise, energy sources (e.g. lasers), entanglement sources, ingestion sources, and secondary stressors would have either no effect or are not likely to adversely affect ESA-listed marine mammals.

- Sea Turtles: The use of sonar and other active acoustic sources may result in exposure of sea turtles to behavioral effects, temporary threshold shift, or injury. Permanent and temporary threshold criteria for sea turtles are conservatively based on criteria developed for mid-frequency marine mammals; whereas most sonar and other active acoustic sources used during training and testing use frequency ranges that are higher than the estimated hearing range of sea turtles. Therefore, any exposures to these sources resulting in temporary or permanent thresholds shifts are expected to be substantially less than the model predicted quantities. The use of explosives may result in behavioral effects, temporary threshold shift, injury, or mortality. Vessel strike could result in mortality or injury of sea turtles. Although a few individual sea turtles may experience long-term impacts such as potential injury and mortality, population-level impacts are not expected.

Swimmer defense airguns, weapons firing noise, vessel noise, aircraft noise, electromagnetic devices, high energy lasers, in-water devices, military expended materials, and seafloor devices may result in exposures of sea turtles to only minor and temporary behavioral reactions. Impacts are expected to be short-term and will not result in significant changes in behavior, growth, survival, annual reproductive success, lifetime reproductive success (fitness), or species recruitment. In cases where potential impacts rise to the level that warrants mitigation, mitigation measures designed to reduce the potential impacts will be implemented.

Pursuant to the ESA, sonar and other active acoustic sources, explosives, and vessel strikes are likely to adversely affect threatened and endangered sea turtle species present in the AFTT Study Area –green sea turtle (*Chelonia mydas*), Kemp's ridley turtle (*Lepidochelys kempii*), hawksbill sea turtle

(*Eretmochelys imbricate*), olive ridley sea turtle (*Lepidochelys olivacea*), loggerhead sea turtle (*Caretta caretta*), and leatherback turtle (*Dermochelys coriacea*).

Other stressors such as swimmer defense air guns, weapon firing noise, vessel noise, aircraft noise, energy sources (e.g. lasers), entanglement sources, ingestion sources, and secondary stressors would have either no effect or are not likely to adversely affect ESA-listed sea turtles.

Impacts from vessel and aircraft noise may affect but are not likely to adversely affect the American crocodile or American alligator.

- Seabirds: There are currently no acoustic or explosive thresholds and criteria for seabirds in the AFTT Study Area to complete a quantitative analysis of acoustic sources; however a qualitative analysis was done to describe the potential impacts. The use of sonar and other active acoustic sources may result in a behavioral disturbance to diving seabirds. Physiological impacts, such as hearing loss, would likely only occur if a bird was close to an intense sound source for an extended period of time, which is highly unlikely. The use of explosives may result in behavioral disturbance, physiological impacts, or mortality. Aircraft strike could result in mortality or injury of seabirds. Although a few individual seabirds may experience long-term impacts such as potential injury and mortality, population-level impacts are not expected. Swimmer defense airguns, weapons firing noise, vessel noise, aircraft noise, electromagnetic devices, high energy lasers, in-water devices, military expended materials, and seafloor devices may result in exposures of seabirds to only minor and temporary behavioral reactions. Impacts are expected to be short-term and will not result in significant changes in behavior, growth, survival, annual reproductive success, lifetime reproductive success (fitness), or species recruitment. In cases where potential impacts rise to the level that warrants mitigation, mitigation measures designed to reduce the potential impacts will be implemented.

Pursuant to the ESA, the Navy's activities may affect, but are not likely to adversely affect threatened and endangered seabird species present in the AFTT Study Area – Bermuda petrel (*Pterodroma cahow*), roseate tern (*Sterna dougallii*), and piping plover (*Charadrius melodus*).

The Navy's activities would have no effect on piping plover critical habitat within the Study Area.

- Marine Vegetation: The use of explosives, vessels, in-water devices, military expended materials, and seafloor devices may result in physical damage to some types of marine vegetation such as seagrass, *Sargassum*, and attached macroalgae. Impacts are not expected to result in detectable changes to their growth, survival, or propagation, and are not expected to result in population-level impacts. In cases where potential impacts rise to the level that warrants mitigation, mitigation measures designed to reduce the potential impacts will be implemented.

Pursuant to the ESA, the Navy's activities will have no effect on threatened and endangered vegetation species present in the AFTT Study Area – Johnson's seagrass (*Halophila johnsonii*). The Navy's activities will have no effect on designated Johnson's seagrass critical habitat within the Study Area.

- Marine Invertebrates: There are currently no acoustic or explosive thresholds and criteria for invertebrates in the AFTT Study Area to complete a quantitative analysis of acoustic sources; however a qualitative analysis was done to describe the potential impacts. The use of sonar and other active acoustic sources, swimmer defense airguns, weapons firing noise, vessel noise, and aircraft noise are not expected to cause more than a short-term behavioral disturbance or startle reaction to some marine

invertebrates capable of detecting nearby sound (e.g., cephalopods and crustaceans). Underwater explosions, vessels and in-water devices, military expended materials, and seafloor devices may result in behavioral disturbance, physiological impacts, or mortality to some marine invertebrates. Only the use of military expended materials has the potential to result in physical impacts to coral reefs; all other activities and sources are either not expected to have any impacts on coral reefs or mitigation measures will be implemented to avoid potential impacts. Electromagnetic devices may cause temporary disruptions to navigation and orientation for susceptible invertebrates (e.g., some species of arthropods, molluscs, and echinoderms). Impacts are not expected to result in detectable changes to their growth, survival, or propagation, and are not expected to result in population-level impacts. In cases where potential impacts rise to the level that warrants mitigation, mitigation measures designed to reduce the potential impacts will be implemented.

Pursuant to the ESA, the Navy's activities may affect, but are not likely to adversely affect threatened and endangered invertebrate species present in the AFTT Study Area – elkhorn coral (*Acropora palmata*), staghorn coral (*Acropora cervicornis*), boulder star coral (*Montastraea annularis*), mountainous star coral (*Montastraea faveolata*), pillar coral (*Dendrogyra cylindrus*), rough cactus coral (*Mycetophyllia ferox*), star coral (*Montastraea franksi*), elliptical star coral (*Dichocoenia stokesii*), and Lamarck's sheet coral (*Agaricia lamarcki*).

Military expended materials may affect but are not likely to adversely affect designated elkhorn or staghorn coral critical habitat within the Study Area. All other stressors would have no effect on these designated critical habitats.

- Fish: There are currently no acoustic or explosive thresholds and criteria for fish in the AFTT Study Area to complete a quantitative analysis of acoustic sources; however a qualitative analysis was done to describe the potential impacts. Sonar and other active sources, weapons firing noise, vessel noise, and aircraft noise are not expected to cause more than a short-term behavioral disturbance or startle reaction to fish capable of detecting the frequencies of the sound. Underwater explosions and swimmer defense airguns may result in behavioral disturbance, physiological impacts, or mortality of some fish (or larvae) close to the source. Electromagnetic devices may cause temporary disruptions to navigation and orientation for certain types of fish (e.g., elasmobranchs, sturgeon, tuna, salmon, eels, and stargazers). Vessels and in-water devices may result in injury or mortality to some fish that are large, slow-moving, and may occur near the surface (e.g., sturgeon, ocean sunfish, whale sharks, basking sharks, and manta rays). Military expended materials and seafloor devices are not expected to cause more than a short-term behavioral disturbance or startle reaction to fish. Impacts are not expected to result in detectable changes to their growth, survival, or propagation, and are not expected to result in population-level impacts. In cases where potential impacts rise to the level that warrants mitigation, mitigation measures designed to reduce the potential impacts will be implemented.

Pursuant to the ESA, only the use of explosives are likely to adversely affect smalltooth sawfish (*Pristis pectinata*), Gulf sturgeon (*Acipenser oxyrinchus desotoi*), and Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). The remaining stressors either have no effect or are not likely to adversely affect these species.

Explosives and all other stressors are not likely to adversely affect Atlantic salmon (*Salmo salar*), largetooth sawfish (*Pristis pristis*), shortnose sturgeon (*Acipenser brevirostrum*),

Acoustic sources, electromagnetic devices and sources of potential disturbance and strike may affect but are not likely to affect designated critical habitat for the Gulf sturgeon. All stressors will have no affects on designated critical habitat for Atlantic salmon and smalltooth sawfish.

Recent Scientific Information

The scientific community is always generating new studies in an effort to improve our understanding of the marine environment. The Navy is a strong advocate for marine research and vigilant in our review of new information that may inform our analyses or affect our conclusions. Since the publication of the Final EIS/OEIS, we have identified additional studies before making our final decision. We have discussed our examination of the additional information with NMFS, who has indicated agreement with our evaluation. Two of these studies, authored by Claridge (2013) and New et al. (2013), are summarized below, with the Navy's conclusions on their applicability to our AFTT FEIS/OEIS determinations.

The first study, Claridge (2013), was a Ph.D thesis which investigated the potential effects exposure to mid-frequency active sonar could have on beaked whale demographics. Claridge (2013) used photo-recapture methods at two study sites in the Bahamas – one a control site (Abaco) and the other located within the Navy's Atlantic Undersea Test and Evaluation Center (AUTEC) – to compare if turnover rates, age composition, and abundance of Blainville's beaked whales (*Mesoplodon densirostris*) were affected by exposure to sonar. The thesis reported similar turnover rates at each site, but a lower annual abundance of Blainville's beaked whales on the Navy site, and a higher female to calf ratio on the Navy site. The author hypothesized that the results suggest lower recruitment through births at AUTEC contributing to a lower overall abundance. The author preliminarily attributed the lower reproductive rates at AUTEC to the exposure of adult females to stressors associated with frequent and repeated use of Navy sonars. However, the author acknowledged that there may be other unknown differences between the sites - in particular that prey availability may be lower at AUTEC than at Abaco– that could explain the results. The author concluded that the hypothesis that population level effects could be occurring due to regular exposure of Blainville's beaked whales to sonar should be tested further.

The Navy identified at least two major areas in which relevant shortcomings diminish the study's application to our analysis. First, all of the re-sighted whales during the five-year study at both sites were female. Claridge acknowledged that this can lead to a negative bias in the abundance estimation. The results at AUTEC were also biased by a reduced effort and a shorter overall study period that did not capture some of the emigration/immigration trends Claridge identified at Abaco. For these reasons among others, it is unclear whether there are significant differences in the abundances between the two sites. Second, Claridge assumed that the two sites were identical and therefore should have equal potential abundances; Abaco was a "control" site with the difference being the use of sonar at AUTEC. Although the sample boundaries at each location were drawn to create samples "of comparable size" there were differences between the two sample area locations that potentially affect the rigor of the study: the Abaco site is along a leeward shore, AUTEC is windward; the Abaco sample area is a long narrow margin along a canyon wall, the rectangular AUTEC sample site is a portion of a deep and landlocked U-shaped trough. In addition to the physical differences, Claridge noted that it remains unclear whether variation in productivity between sites influenced what she referred to as substantial differences in abundance. Because Claridge reported that a study investigating prey distributions at her sample locations was unable to sample prey at the beaked whale foraging depth, she dismissed the possibility of differences in prey availability as a factor influencing difference in abundance since there is no supporting evidence that prey availability actually differed between the two sites. This illustrates that there are often multiple and complex factors that may influence trends in species abundance, and that

all factors require a comprehensive assessment in order for supportable cause and effect determinations to be made.

Despite these noted weaknesses, the Navy considered the preliminary determinations made by Claridge (2013) on our existing findings within the AFTT FEIS/OEIS on the effects of sonar to beaked whales. The applicability of the study to training and testing activities conducted within the AFTT Study area is limited primarily because the factors that potentially contributed to the purported results in Claridge (2013) do not occur within the AFTT Study Area. In particular, the AFTT Study Area is not known to support resident populations of beaked whales, and training and testing activities within the AFTT study are generally short-term and transitory in nature which would therefore not result in chronic exposures to the same population of beaked whales. Additionally, Claridge's results are not supported by marine mammal monitoring data of beaked whales on other Navy training ranges. For instance, three decades of training and testing activities at the Navy's instrumented training range west of San Clemente Island have not precluded beaked whales from continuing to inhabit the area nor have there been documented declines or beaked whale mortalities associated with Navy training and testing activities in that area. In fact, data documenting the presence and long term residence of Cuvier's beaked whales in the ocean basin west of San Clemente Island (Falcone et al. 2009; 2012) and results from passive acoustic monitoring by the Navy show estimated regional Cuvier's beaked whale densities higher than indicated by the NMFS's broad scale visual surveys for the west coast of the United States (Hildebrand and McDonald 2009). Therefore, based on the above evidence as well as the existing analysis contained within the FEIS/OEIS regarding long-term impacts, noise impacts, habitat deterioration, and beaked whale responses to various stressors, the Navy determined that the findings in Claridge (2013) did not alter our conclusions regarding the potential effects of sonar on beaked whales.

The second study we considered was New et al. (2013) who developed a mathematical model simulating a functional link between feeding energetic and a species' requirements for survival and reproduction for 21 species of beaked whales. New et al. (2013) reported "reasonable confidence" in their model, despite the fact the model relies on assumptions that do not accurately represent the biological attributes for all 21 species of beaked whales.

For example, New et al. (2103) hypothesized that if habitat quality and "accessible energy" (derived from the availability of either plentiful prey or prey with high energy content) are both high, then survival rates are high as well. If these variables are low, then adults may survive but calves will not. However, the model failed for 29% (6 of the 21 species) of beaked whale species. For the species for which the model failed, one of the assumptions was a 2 year calving period (or inter-calf interval). This 2-year inter-calf interval may be too short for species with longer gestation periods, such as the 17-month gestation period of Baird's beaked whale (*Berardius bairdii*). For another species, Blainville's beaked whale, Claridge (2013) noted that calf age at separation is at least 3 years, and that the inter-calf interval at Abaco in the Bahamas may be 4 years. New et al. (2013) acknowledged that an assumed 2-year calving period in the modeling may not be long enough to build up the energetic resources necessary for mother and calf survival.

As another critical model assumption, prey preferences, were modeled based on stomach content analyses of stranded animals, which the authors acknowledge are traditionally poor estimates of the diets of healthy animals, as stranded animals are often sick prior to stranding. Stomach content remnants of prey species do not digest equally, as only the hard parts of some prey types remain (e.g. fish otoliths, beaks of cephalopods) and thus often provide an incomplete or inaccurate picture of diet. Given these unknowns and the failure of the simulation to work for 29% of beaked whale species, the

modeled survival rates of all beaked whales, particularly those modeled with prey having low energy content, may be better than simulated if higher energy prey makes up a larger part of the diet.

In short, for the model New et al. (2013) created to correctly represent links between the species and their environment, that model must identify all the critical and relevant ecological parameters as input variables, provide the correct values for those parameters, and then the model must appropriately integrate modeling functions to duplicate the complex relationships the model intends to represent. If an assumption (model input) such as calving period or prey preferences is incorrect (and there is presently no way to know), then the model would not be representing what may actually be occurring in nature. New et al. (2103) report that their simulations suggest that adults will survive but not successfully reproduce if anthropogenic disturbances result in being displaced to areas of "impaired foraging." Underlying this suggestion is the additional unstated assumption that habitat capable of sustaining a beaked whale is limited in proximity to where any disturbance has occurred and there are no data to indicate that this is a valid assumption. The assumption that moving to immediately adjacent habitat results in "impaired foraging" does not appear to be supported.

While the New et al. (2013) model provides a test case for future research, this pilot study has very little of the critical data necessary to form conclusions applicable to current management decisions. The authors note the need for more data on prey species and reproductive parameters including gestation and lactation duration, as the model results are particularly affected by these assumptions. Therefore, any suggestion of biological sensitivity to the simulation's input parameters is uncertain at this time. The Navy will continue to follow developments in the mathematical modeling of energetics to estimate specific sensitivity to disturbance.

An additional study by Houser (2013), investigating factors effecting behavioral disruptions of California sea lions to simulated tactical sonar signals, was published days before making our final decision, too late to be fully analyzed as part of this decision process. However, the Navy and NMFS will consider this study as appropriate, as we do all recently published studies, as part of the adaptive management process.

The Navy continues to review emergent science and promote research to better assess the potential effects that may result from the continuation of ongoing training and testing in the range complexes worldwide. Although there have been a few strandings associated with use of sonar in other locations (see U.S. Department of the Navy 2013), Ketten (2012) has recently summarized, "to date, there has been no demonstrable evidence of acute, traumatic, disruptive, or profound auditory damage in any marine mammal as the result of anthropogenic noise exposures, including sonar." Therefore, based on the best available science (Barlow et al 2011; Falcone et al. 2009; Littnan 2011; Martin and Kok 2011; McCarthy et al. 2011; McSweeney et al. 2007; McSweeney et al. 2009; Moore and Barlow 2011; Tyack et al. 2011; Southall et al. 2012), including data collected and submitted to NMFS in over 70 Navy monitoring and research reports, the Navy finds that long-term consequences for individuals or populations are unlikely to result from Navy training and testing activities.

Mitigation Measures

As part of Alternative 2, the Navy will implement all practicable mitigation, monitoring, and standard operating procedures to avoid or reduce adverse environmental impacts, including those identified in the Final EIS/OEIS, the 14 November 2013 National Marine Fisheries Service (NMFS) Biological Opinion, the 3 July 2013 U.S. Fish and Wildlife Service (USFWS) concurrence letter, the Atlantic Fleet Training and Testing Essential Fish Habitat Assessment Final Report (June 2013), and the NMFS Final Rule and Letters

of Authorization (LOAs) issued under the MMPA on 14 November 2013 (see the section on Agency Consultation and Coordination of this Record of Decision for further detail). Mitigation, monitoring, and standard operating procedures to be implemented will affect Navy activities that involve the following resources:

- Seafloor Resources: Mitigation measures reduce the potential impacts of precision anchoring or explosives on or near the bottom and near shallow coral reefs, hard bottom habitat, artificial reefs, and shipwrecks. Mitigation measures also reduce the potential impacts of military expended materials on shallow coral reefs.

- Marine Mammals and Sea Turtles: Mitigation measures and annual exercise, testing, and monitoring reporting requirements are identified in the Final EIS/OEIS, the 3 July 2013 USFWS concurrence letter, the 14 November 2013 NMFS Biological Opinion, and the two 14 November 2013 MMPA LOAs, one for training activities and one for testing activities. In the Navy's EIS/OEIS, the geographic coordinates and dates defining the North Atlantic Right Whale Mid-Atlantic Migration Corridor were intended to match the NMFS guidance for right whale ship strike reduction (NMFS 2008). However, the EIS/OEIS contained an error related to the coordinates defining the Block Island Sound, and the 20 nm radius descriptor for several of the geographic areas was accidently omitted. The Navy informed NMFS of this error. In doing so, it was discovered that there was a clerical error in the MMPA Final Rule and Letters of Authorization, and ESA Biological Opinion. To rectify this error, NMFS will publish the correction to the Final Rule in the Federal Register and amend the BiOp and LOA. The appropriate coordinates and language defining the mitigation associated with the North Atlantic Right Whale Mid-Atlantic Migration Corridor are contained below and will be implemented by the Navy through this Record of Decision.

This mitigation area applies from November 1 through April 30 and is defined as follows:

Block Island Sound: the area bounded by 40°51'53.7" North / 070°36'44.9" West; 41°20'14.1" North / 070°49'44.1" West ; 41°04'16.7" North / 071°51'21.0" West; 41°35'56.5" North / 071°38'25.1" West then back to the first set of coordinates

New York and New Jersey: within a 20 nm radius of the following (as measured seaward from the COLREGS lines) 40°29'42.2" North / 073°55'57.6" West

Delaware Bay: within a 20 nm radius of the following (as measured seaward from the COLREGS lines) 38°52'27.4" North / 075°01'32.1" West

Chesapeake Bay: within a 20 nm radius of the following (as measured seaward from the COLREGS lines) 37°00'36.9" North / 075°57'50.5" West

Morehead City, North Carolina: within a 20 nm radius of the following (as measured seaward from the COLREGS lines) 34°41'32.0" North / 076°40'08.3" West

Wilmington, North Carolina, through South Carolina, and to Brunswick, Georgia: within a continuous area 20 nm from shore and west back to shore bounded by 34°10'30" North / 077°49'12" West; 33°56'42" North / 077°31'30" West; 33°36'30" North / 077°47'06" West; 33°28'24" North / 078°32'30" West; 32°59'06" North / 078°50'18" West; 31°50'00"North / 080°33'12" West; 31°27'00" North / 080°51'36" West

When transiting within the migration corridor, the Navy will practice increased vigilance, exercise extreme caution, and proceed at the slowest speed that is consistent with safety, mission, and training and testing objectives.

- Seabirds: Mitigation measures reduce the potential impacts from aircraft overflight noise during mine countermeasure and neutralization activities in the VACAPES Range Complex on piping plover, and reduce potential impacts from explosions during ship shock trials on flocks of seabirds. In addition, standard operating procedures reduce the risk of aircraft strikes to seabirds.

Monitoring

The Navy is committed to demonstrating environmental stewardship while executing its National Defense Mission and complying with the suite of federal environmental laws and regulations. As a complement to the Navy's commitment to avoiding and reducing impacts of the Proposed Action through mitigation, the Navy will undertake monitoring efforts to track compliance with take authorizations, help evaluate the effectiveness of implemented mitigation measures, and advance the understanding of impacts of the Proposed Action on marine resources. Taken together, mitigation and monitoring comprise the Navy's integrated approach for reducing environmental impacts from the Proposed Action. The Navy's overall monitoring approach will seek to leverage and build on existing research efforts whenever possible.

The Integrated Comprehensive Monitoring Program (ICMP) was developed in coordination with NMFS, and implemented in 2010 in support of regulatory monitoring requirements to ensure the implementation of a robust and effective monitoring process. The ICMP will continue to coordinate monitoring efforts across all regions where the Navy trains and tests and to allocate the most appropriate level and type of effort for each range complex. The ICMP establishes top-level goals that have been developed in coordination with NMFS. The following top-level goals will become more specific with regard to identifying potential projects and monitoring field work through the Strategic Plan process as projects are evaluated and initiated in the AFTT Study Area.

- An increase in the understanding of the likely occurrence of marine mammals or ESA-listed marine species in the vicinity of the action (i.e., presence, abundance, distribution, and density of species).
- An increase in the understanding of the nature, scope, or context of the likely exposure of marine mammals and ESA-listed species to any of the potential stressor(s) associated with the action (e.g., tonal and impulsive sound), through better understanding of one or more of the following: (1) the action and the environment in which it occurs (e.g., sound source characterization, propagation, and ambient noise levels); (2) the affected species (e.g., life history or dive patterns); (3) the likely co-occurrence of marine mammals and ESA-listed marine species with the action (in whole or part) associated with specific adverse impacts; or (4) the likely biological or behavioral context of exposure to the stressor for the marine mammal and ESA-listed marine species (e.g., age class of exposed animals or known pupping, calving, or feeding areas).
- An increase in the understanding of how individual marine mammals or ESA-listed marine species respond (behaviorally or physiologically) to the specific stressors associated with the action in specific contexts, where possible (e.g., at what distance or received level).
- An increase in the understanding of how anticipated individual responses, to individual stressors or anticipated combinations of stressors, may impact either: (1) the long-term fitness and survival of an individual; or (2) the population, species, or stock (e.g., through impacts on annual rates of recruitment or survival).
- An increase in the understanding of the effectiveness of mitigation and monitoring measures.
- A better understanding and record of the manner in which the authorized entity complies with the Incidental Take Authorization and Incidental Take Statement.

- An increase in the probability of detecting marine mammals (through improved technology or methods), both specifically within the mitigation zone (thus allowing for more effective implementation of the mitigation) and in general, to better achieve the above goals.
- A reduction in the adverse impact of activities to the least practicable level, as defined in the MMPA.

Adaptive Management

As part of the Navy's Mitigation and Monitoring efforts, NMFS has included an adaptive management component in the 5-year Final Rule. The reporting requirements associated with the rule provide NMFS with monitoring data from the previous year to allow consideration of whether any changes to mitigation are appropriate. According to the rule, NMFS, the Navy, and the Marine Mammal Commission will meet to discuss the monitoring reports, Navy R&D developments, current science, and whether mitigation or monitoring modifications are appropriate. The use of adaptive management allows for consideration of new information from different sources to determine (with input from the Navy regarding practicability) on an annual or biennial basis if mitigation or monitoring measures should be modified (including additions or deletions). Mitigation measures could be modified if new data suggests that such modifications would have a reasonable likelihood of reducing adverse effects to marine mammal species and their habitat and if the measures are practicable. The following are some of the possible sources of applicable data to be considered through the adaptive management process: (1) results from monitoring, exercise and testing reports, as required by MMPA authorizations; (2) compiled results of Navy funded R&D studies; (3) results from specific stranding investigations; (4) results from general marine mammal and sound research; and (5) any information which reveals that marine mammals may have been taken in a manner, extent, or number not authorized by these regulations or subsequent LOAs.

NMFS is currently in the process of updating, revising, and, after public notice and comment, publishing guidance for all acoustic thresholds criteria for marine mammals as they apply to all activity types (not just those conducted by the Navy). This evaluation could potentially result in NMFS publishing guidance that recommends different acoustic criteria than what is currently applied by the Navy in the FEIS/OEIS and NMFS ESA and MMPA documents for AFTT. While any future changes in acoustic criteria may affect the enumeration of "takes," they do not necessarily significantly change the evaluation of environmental impacts. Further, while acoustic criteria may also inform mitigation and monitoring decisions, the Navy has a robust adaptive management program that actively and regularly addresses new information and allows for modification of mitigation and/or monitoring measures if or as appropriate.

Decision

The Department of the Navy selects Alternative 2, the Preferred Alternative, to implement the Proposed Action. In making this decision, the Navy is fully aware of the comments received regarding the potential impacts to marine mammals because of the perception of a high number of estimated "takes." As described in the EIS/OEIS and this ROD, the Navy consulted with the National Marine Fisheries Service to evaluate and obtain authorization and permits to carry out our military training and testing activities. As part of that consultation, the Navy used the best available scientific information to estimate the potential for our activities to affect marine mammals. According to this analysis, the vast majority of impacts to marine mammals will be behavioral responses which will not result in any physical injury to marine mammals. In fact, the analysis estimates that fewer than 0.1% of the exposures to military activities could result in physical injury or mortality to marine mammals. The military activity that may result in this mortality is use of military explosives and it is important to note

that the analytical process estimates the potential for mortality from explosives based on very conservative criteria. With the implementation of proven mitigation and decades of historical information from conducting military training and testing with explosives in the study area, the likelihood of mortality is very low. While the analysis did not predict any mortalities from exposure to sonar, as a precautionary measure, the Navy requested a small number of mortality takes for beaked whales which are known to be more susceptible to stranding, though none have stranded in the study area as a result of Navy activities. In addition, and based on historical data, the Navy requested a very small number of mortalities from ship strikes. The Navy has adopted all practicable means to avoid and minimize impacts to marine mammals. Through our robust adaptive management program, we will continue to monitor our activities and their effects on marine mammals and will make adjustments to our monitoring and/or mitigation measures based on new information as appropriate. Even assuming the predicted level of "take" would occur, the National Marine Fisheries Service determined our proposed activities would have a negligible impact on the marine mammal species and stocks within the study area. In making this decision, the Navy has also considered its responsibility for the national security mission. The capability to conduct improved training and testing activities in the AFTT Study Area best serves the interest of the nation and the Navy and can be accomplished while minimizing environmental impacts.

Agency Consultation and Coordination

NMFS served as a cooperating agency throughout the EIS/OEIS process. NMFS is a cooperating agency pursuant to 40 C.F.R. § 1501.6 because of its expertise and regulatory authority over marine resources. Additionally, the EIS/OEIS will serve as NMFS' NEPA documentation for the rule-making process under the MMPA. The early participation of NMFS in the EIS/OEIS process aided the Navy's analysis of potential environmental impacts to marine biological resources. In addition, the Navy consulted and coordinated with other federal and state agencies, including USFWS and State Historic Preservation Offices and Coastal Zone Management Act administrators for 20 states and territories within the Study Area in conjunction with actions addressed in the Final EIS/OEIS. A summary of the results from each consultation and coordination process is included below:

- Marine Mammal Protection Act: The Navy submitted an application for five year incidental take authorizations to NMFS on 5 April 2012 for stressors associated with certain training and testing activities (the use of sonar and other active acoustic sources, explosives, and vessel movement), as described under the Preferred Alternative (Alternative 2). On 24 September 2012, a revised request was submitted to NMFS which included: 1) corrections to errors, typos, and transcription mistakes; 2) addition of training and testing requirements that were not identified in time to incorporate into the initial application; 3) clarification of how events were modeled; and 4) the addition of post-model analysis to supplement the analysis of acoustic effects to include animal avoidance of sound sources, animal avoidance of areas of activity before use of a sound source or explosive, and implementation of mitigation. On 21 December 2012 an additional revised request was submitted to NMFS which included: 1) corrections to source Tables; 2) corrections to the description of what was analyzed for Civilian Port Defense; 3) update to the requested take numbers; 4) corrections to the g(0) values, avoidance factors, and mitigation factors used in the post-model analysis; and 5) corrections and clarifications made to the mitigation measures. NMFS issued their Final Rule on 14 November 2013 and concluded that the Navy's training and testing activities will have a negligible impact on the marine mammal species and stocks present in the AFTT Study Area. On 14 November 2013, NMFS also issued two Letters of Authorization (LOA), one each for Navy training activities and testing activities. These LOAs authorize the taking of marine mammals incidental to Navy training and testing activities conducted in the AFTT Study area pursuant to Section 101 (a)(5)(A) of the Marine Mammal Protection Act. The LOAs specify the type

and amount of incidental take that is authorized, by species, as well as the Navy's specific mitigation, monitoring, and reporting requirements. The LOAs were coordinated by NMFS with the Incidental Take Statements the Navy received for the incidental take of threatened and endangered marine mammals pursuant to Section 7 of the ESA.

- Endangered Species Act: The Navy requested initiation of formal consultation with NMFS (Headquarters, Office of Protected Resources) on ESA-listed species in a letter on 24 September 2012. Species to be addressed included the North Atlantic right whale, bowhead whale, humpback whale, sei whale, fin whale, blue whale, sperm whale, green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, loggerhead sea turtle, leatherback sea turtle, elkhorn coral, staghorn coral, Atlantic salmon, largetooth sawfish, smalltooth sawfish, shortnose sturgeon, Gulf sturgeon, and Atlantic sturgeon as well as designated Critical Habitat for the North Atlantic right whale, Atlantic salmon, smalltooth sawfish, Gulf sturgeon, staghorn coral, and elkhorn coral. In addition, the Navy requested a conference opinion on the ringed seal which was proposed for listing; however this species is now officially listed as threatened and was included in the formal consultation along with the other species. NMFS issued their Biological Opinion on 14 November 2013, and concluded that any adverse effects to ESA-listed species as described above, are not likely to jeopardize the continued existence of threatened or endangered species. In addition to the Biological Opinion, NMFS issued two Incidental Take Statements, one each for Navy training activities and testing activities. These Incidental Take Statements were coordinated by NMFS with the issuance of Letters of Authorization the Navy received for the incidental take of marine mammals pursuant to Section 101(a)(5)(A) of the MMPA. The Incidental Take Statements exempt Navy actions as described in the EIS/OEIS from the prohibitions set forth in Section 9 of the ESA.

The Navy requested a conference opinion on the seven coral species proposed for listing in a letter dated 20 February 2013. Species to be addressed include boulder star coral, mountainous star coral, pillar coral, rough cactus coral, star coral, elliptical star coral, and Lamarck's sheet coral. The Navy requested and received concurrence with its Not Likely to Adversely Affect determination for the use of military expended materials and seafloor devices in the 14 November 2013 Biological Opinion.

On 22 February 2013 the Navy requested informal consultation with the USFWS Northeast, Southeast, and Southwest Regional Offices and requested concurrence with the determination that the training and testing activities under Alternative 2 may affect, but are not likely to adversely affect the Bermuda petrel, roseate tern, piping plover, West Indian manatee, polar bear, American crocodile, and American alligator, as well as the candidate red knot (*Calidris canutus rufa*). On 3 July 2013 the USFWS concurred with the Navy's determination that AFTT training and testing activities as described under Alternative 2 will have no effect on, or are not likely to adversely affect, federally-listed species, candidate species or designated critical habitat under USFWS jurisdiction.

- Magnuson-Stevens Fishery Conservation and Management Act: The Navy determined that the Proposed Action could result in adverse effects to Essential Fish Habitat and initiated consultation with the NMFS Northeast and Southeast Regional Offices by submitting an Essential Fish Habitat Assessment on 4 June 2012 to the Habitat Conservation Division, NMFS, Northeast Regional Office and Southeast Regional Office. The NMFS consultation was completed on 8 January 2013. NMFS concurred that the Navy's proposed mitigation measures are sufficient to avoid, minimize or offset impacts to Essential Fish Habitat and no additional conservation recommendations were provided.

- Coastal Zone Management Act: In December 2012, the Navy (Commander, U.S. Fleet Forces Command) submitted Consistency Determinations for activities within the coastal zones of states and U.S. territories within the AFTT Study Area to the 20 states and U.S. territories with coastlines bordering the Study Area (Alabama, Connecticut, Delaware, Florida, Georgia, Louisiana, Massachusetts, Maryland, Maine, Mississippi, North Carolina, New Hampshire, New Jersey, New York, Puerto Rico, Rhode Island, South Carolina, Texas, U.S. Virgin Islands, and Virginia). Of the Consistency Determinations submitted, concurrences were received from 15 states and one territory including Alabama, Connecticut, Delaware, Florida, Georgia, Louisiana, Massachusetts, Maryland, Maine, Mississippi, North Carolina, New Hampshire, New Jersey, Puerto Rico, Rhode Island, and Virginia. Three states and one territory (South Carolina, Texas, New York, and the U.S. Virgin Islands) did not respond within 60 days of submission of the determinations, as required by 15 C.F.R. § 930.41(a). For that reason, concurrence with the Navy's determinations was assumed.

- National Historic Preservation Act: In April 2013, the Navy (Commander, U.S. Fleet Forces Command) initiated consultation under Section 106 of the National Historic Preservation Act for activities within state and territory waters of the 20 states and U.S. territories with coastlines bordering the Study Area (Alabama, Connecticut, Delaware, Florida, Georgia, Louisiana, Massachusetts, Maryland, Maine, Mississippi, North Carolina, New Hampshire, New Jersey, New York, Puerto Rico, Rhode Island, South Carolina, Texas, U.S. Virgin Islands, and Virginia). Of the consultations undertaken, 12 states and one territory (Delaware, Florida, Georgia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Puerto Rico, Texas, and Virginia) concurred with the Navy's finding of "no historic properties affected." Six states and one territory (Alabama, Connecticut, Louisiana, Mississippi, Rhode Island, South Carolina, and the U.S. Virgin Islands) did not respond within 30 days of receipt of the requests for consultation, as required by 36 C.F.R. § 800.3(c)(4). For that reason, concurrence with the Navy's effect determinations was assumed.

- National Marine Sanctuaries Act: As part of the EIS/OEIS process, the Navy had informational discussions with the Office of National Marine Sanctuaries in accordance with requirements under the National Marine Sanctuaries Act. Adjustments were made to analysis contained within Section 6.1.2.5 (National Marine Sanctuaries) of the EIS/OEIS based on feedback received from the Office of National Marine Sanctuaries. In addition to this feedback, the Navy received two specific recommendations from the Office of National Marine Sanctuaries. Responses to these recommendations can be found in Table C-1 of Appendix C (Agency Correspondence) of the Final EIS/OEIS.

Responses to Comments Received on the FEIS/OEIS

Navy received no comments during the 30-day wait period following the issuance of the Notice of the Availability of the FEIS/OEIS.

CONCLUSION

Based on the environmental impacts and strategic and operational readiness consequences analyzed in the Final EIS/OEIS, comments from regulatory agencies as well as those received from members of the public, mitigation, and other factors discussed above, the Navy selects Alternative 2, the Preferred Alternative, to implement the Proposed Action. Alternative 2, the Navy's Preferred Alternative, is the alternative that will fully meet Navy and DoD current and future training and testing requirements in the AFTT Study Area. Under Alternative 2, the Navy analyzed areas where training and testing will continue as in the past, but were not considered in previous environmental analyses; the establishment of new range capabilities, as well as modification of existing capabilities; adjustments to type and tempo of training and testing and the establishment of additional locations to conduct activities between the range complexes. With implementation of the mitigation measures identified in the Final EIS/OEIS and associated regulatory documents developed in consultations with NMFS, USFWS, states and territories adjacent to the AFTT Study Area (Alabama, Connecticut, Delaware, Florida, Georgia, Louisiana, Massachusetts, Maryland, Maine, Mississippi, North Carolina, New Hampshire, New Jersey, New York, Puerto Rico, Rhode Island, South Carolina, Texas, U.S. Virgin Islands, and Virginia), and adherence to standard operating procedures, management plans and monitoring requirements described herein, environmental impacts associated with implementing Alternative 2 will be minimized. In addition, the Navy assessed the effects of Alternative 2 in accordance with EO 12114 and concluded that there would be no significant harm to the environment of places outside the U.S., its territories, and possessions.

11/25/13

Date

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