

RECORD OF DECISION

DEPARTMENT OF DEFENSE

Department of the Navy

Record of Decision for Naval Surface Warfare Center Panama City Division Mission Activities

AGENCY: Department of the Navy, Department of Defense

ACTION: Notice of Record of Decision

SUMMARY: The Department of the Navy (Navy), after carefully weighing the operational and environmental consequences of the proposed action, announces its decision to improve the Naval Surface Warfare Center Panama City Division's (NSWC PCD's) capabilities to conduct new and increased mission operations for the Navy and its Department of Defense customers within three military warning areas W-151, W-155, and W-470 and St. Andrew Bay, collectively known as the NSWC PCD Study Area. Actions analyzed in the Final Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) are required for the Navy to successfully meet current and future national and global defense challenges by developing a robust capability to research, develop, test, and evaluate systems within the NSWC PCD Study Area. This allows the Navy to meet its statutory mission to deploy worldwide naval forces equipped and trained to meet existing and emergent threats and to enhance its ability to operate jointly with other components of the armed forces.

The Navy analysis evaluated potential environmental effects associated with the littoral and expeditionary maneuver warfare activities proposed for the NSWC PCD Study Area. NSWC PCD's research, development, test, and evaluation (RDT&E) activities occur either on or over the waters present within the NSWC PCD Study Area. The RDT&E activities occurring in these areas include air operations, surface operations, subsurface operations, sonar operations, electromagnetic operations, laser operations, ordnance operations, and projectile firing. The environmental analysis undertaken by the Navy included lengthy and detailed consultations with the National Marine Fisheries Service (NMFS) regarding impacts to marine mammals and threatened and endangered species. Public awareness and participation were integral components of the EIS/OEIS process. The Navy ensured that members of the public, state agencies, and federal agencies had the opportunity to comment on the scope of the Navy's analysis included in the Draft EIS/OEIS as well as examine and consider other environmental issues to be included in the Final EIS/OEIS.

The Navy's need to maximize operational capabilities and capacities at NSWC PCD in order to meet an increased demand in testing activities was ultimately the determining factor in this decision-making process. NSWC PCD provides the greatest number of favorable circumstances for the environment needed to conduct RDT&E focused on mine countermeasures, economically and efficiently. It also has the established infrastructure,

equipment, and personnel as well as the conditions needed to fulfill the requirements under the Preferred Alternative.

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SUPPLEMENTARY INFORMATION: Pursuant to Section 4321 *et seq.* of Title 42 of the U.S. Code (Section 2 *et seq.* of the National Environmental Policy Act of 1969 [NEPA]); the regulations of the President's Council on Environmental Quality (CEQ) that implement NEPA procedures (Title 40 of the Code of Federal Regulations [CFR] Parts 1500-1508); Department of Defense (DoD) Instruction 4715.9, Environmental Planning and Analysis; Secretary of the Navy Instruction 5090.6A; and the applicable Navy environmental regulations that implement these laws and regulations, the Navy announces its decision to improve the Naval Surface Warfare Center Panama City Division's (NSWC PCD) capabilities to conduct new and increased mission operations for the Navy and other customers, as set out in Alternative 2, described in the Final EIS/OEIS as the Preferred Alternative. The Navy considered applicable executive orders, including an analysis of the environmental effects of its actions outside the U.S. or its territories under Executive Order (EO) 12114, *Environmental Effects Abroad of Major Federal Actions*, and the requirements of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*.

Specific components of the Preferred Alternative, as described in the Final EIS/OEIS, involve a variety of naval assets including vessels, aircraft, and underwater systems that support eight primary research, development, test, and evaluation (RDT&E) capabilities: air, surface, subsurface, sonar, laser, electromagnetic, live ordnance, and projectile firing operations. NSWC PCD's activities occur either in or over the waters present within the NSWC PCD Study Area. Implementation of the Preferred Alternative could begin immediately. The Preferred Alternative allows for the maximization of NSWC PCD operational capability to meet expanding projected increases in RDT&E requirements for the Navy and other customers.

PURPOSE AND NEED: The purpose of the proposed action is to enhance NSWC PCD's capability and capacity to meet littoral and expeditionary maneuver warfare requirements by providing RDT&E and in-service engineering for expeditionary maneuver warfare, operations in extreme environments, mine warfare, maritime operations, and coastal operations.

The need for the proposed action is for the Navy to successfully meet current and future national and global defense challenges by developing a robust capability to research, develop, test, and evaluate systems within the NSWC PCD Study Area. This allows the Navy to meet its statutory mission to deploy worldwide naval forces equipped to meet existing and emergent threats and to enhance its ability to operate jointly with other components of the armed forces.

PUBLIC INVOLVEMENT: The Navy initiated a mutual exchange of information through early and open communications with interested stakeholders during the development of the Draft EIS/OEIS. The Notice of Intent, which provided an overview of the proposed project, scope of the EIS/OEIS, and scoping meeting locations was published in the *Federal Register* on August 19, 2004 (69 Fed. Reg. 51453). Notification of public scoping meetings was also made through local media outlets and newspapers. Due to the threat of a hurricane, the Navy was required to reschedule the scoping events. A Notice of Rescheduled Scoping Meetings was published in the *Federal Register* on September 24, 2004 (69 Fed. Reg. 57273). The Navy conducted scoping meetings at two different locations on October 5, 2004 and October 6, 2004: Panama City, Florida and Port St. Joe, Florida.

The Notice of Availability of the Draft EIS/OEIS and Notice of Public Hearings was published in the *Federal Register* on April 9, 2008 (73 Fed. Reg. 19194). Notification of public hearings was also made through local media outlets and newspapers. The Draft EIS/OEIS was distributed to those individuals, agencies, and associations who asked to be notified during the scoping process, as well as members of Congress, state governors and officials from the coastal region adjacent to the NSWC PCD Study Area.

Notification of the availability of the NSWC PCD Draft EIS/OEIS and public hearing schedule was sent to interested individuals, agencies, and associations, as well as elected and other public officials. Additionally, the NSWC PCD Draft EIS/OEIS was made available for general review at six libraries in the region encompassed by the NSWC PCD Study Area, and on the project website (<http://nswcpc.navsea.navy.mil/Environment.htm>). The Navy held three public hearings during the period of May 5, 2008 through May 7, 2008, in Panama City, Florida; Pensacola, Florida, and Port St. Joe, Florida. A total of 10 individuals, agencies, and organizations submitted 192 comments on the Draft EIS/OEIS.

The Notice of Availability of the Final EIS/OEIS was published in the *Federal Register* on September 25, 2009 (74 Fed. Reg. 48951). Notification of the availability of the Final EIS/OEIS was also made through various newspapers. The Final EIS/OEIS was distributed to those individuals, agencies, and associations who asked to be notified during the public comment period, as well as members of Congress, state governors, and officials from the coastal region encompassed in the NSWC PCD Study Area. Notification of the availability of the Final EIS/OEIS was sent to interested individuals, agencies, and associations, as well as elected and other public officials. Additionally, the NSWC PCD Final EIS/OEIS was made available for general review at five public libraries in the region encompassed by the NSWC PCD Study Area, and on the project website (<http://www.navsea.navy.mil/nswc/panamacity/environment/EIS.aspx>).

ALTERNATIVES CONSIDERED: The development of action alternatives focused on accommodating baseline activities, as well as future growth requirements for missions and activity levels identified during a data collection effort that quantified 10 years of historical and current NSWC PCD RDT&E activities. The development process incorporated the needs to support future test capabilities identified during data collection, expand required mission capabilities, and increase the baseline tempo and intensity of activities. The No Action Alternative addresses historical and current mission activities (referred to

cumulatively as “baseline mission activities”) for the NSWCD Study Area. Alternative 1 addresses baseline mission activities, as well as identified (known) future NSWCD RDT&E activities projected to occur at an increasing tempo over the next five years based on the data collection effort. Alternative 1 will maximize NSWCD’s future operational capability. Specifically, Alternative 1 enhances current capabilities to meet future needs by incorporating new test capabilities as well as projected increases to the baseline tempo and intensity of RDT&E activities. Alternative 2 addresses baseline mission activities (as identified with the No Action Alternative), as well as identified (known) future NSWCD RDT&E activities projected to occur at an increasing tempo over the next five years (as identified with Alternative 1) in order to maximize NSWCD operational capability and to accommodate future RDT&E activities. Alternative 2 increases the level of activities over Alternative 1 in some cases approximately threefold.

In the Final EIS/OEIS, the Navy identified Alternative 2 as the Preferred Alternative. This alternative allows for the maximization of NSWCD operational capability to meet expanding projected increases in RDT&E requirements and provides NSWCD mission support to NAVSEA users and the greater Navy and DoD community.

Regulations implementing NEPA require the identification of the environmentally preferred alternative. The environmentally preferred alternative for this EIS/OEIS is the No Action Alternative, which addresses baseline mission activities. By continuing with the baseline operational tempos, there would not be an increase in operations. The Preferred Alternative (Alternative 2) would have a greater environmental impact than the environmentally preferred alternative (No Action Alternative) on marine mammals and threatened and endangered species due to an increase in sonar and ordnance operations. While the environmentally preferred alternative would have less environmental impact than the Preferred Alternative, it would not completely support the future mission requirements and activity levels identified during the data collection. The No Action Alternative, therefore, would not fully meet the need of the Proposed Action.

When developing a reasonable range of alternatives, the Navy identified and eliminated four alternatives from further consideration: (1) conduct no active sonar activities; (2) use other operating areas; (3) conduct all active sonar operations through simulation; and (4) conduct no RDT&E activities. The alternatives were not reasonable because they could not meet the purpose and need. Furthermore, these alternatives could not meet specific NSWCD requirements to accommodate baseline levels and future growth requirements.

SUMMARY OF ENVIRONMENTAL IMPACTS: NSWCD analyzed the potential impacts of the proposed action in terms of the following resource areas: physical (geology and sediments, air quality, in-air sound, and water quality), biological (marine habitats, marine invertebrates, marine fish, essential fish habitat, birds, marine mammals, and sea turtles), anthropogenic (socioeconomics, airspace management, artificial reefs, cultural and historical resources, environmental justice and risks to children), and coastal zone management. The potential for environmental impacts throughout the NSWCD Study Area associated with each alternative was analyzed and documented in Chapter 4 of the Final

EIS/OEIS. This Record of Decision summarizes the potential impacts associated with implementation of the Preferred Alternative.

GEOLOGY AND SEDIMENTS: No significant impacts or significant harm to geology and sediments from detonations, subsurface operations (crawler, mine placement, and recovery operations), and projectile firing are expected.

AIR QUALITY: No significant impacts or significant harm to air quality from detonations, air operations, and surface operations are expected.

IN-AIR SOUND: No significant impacts or significant harm to sound levels from air and Landing Craft Air Cushion (LCAC) operations are expected.

WATER QUALITY: No significant impacts or significant harm to water quality from ordnance operations and projectile firing are expected.

MARINE HABITATS: There would be no significant impact and no significant harm to marine habitats from surface operations, subsurface operations (crawler, mine placement, and recovery operations), ordnance operations, and projectile firing.

INVERTEBRATES: There would be no significant impact and no significant harm to invertebrates from sonar operations, ordnance operations, laser operations, and projectile firing.

FISH: There would be no significant impact and no significant harm to fish from air operations, sonar operations, electromagnetic operations, laser operations, ordnance operations, and projectile firing.

ESSENTIAL FISH HABITAT: Essential Fish Habitat would not be adversely affected from NSWC PCD RDT&E activities.

BIRDS: There would be no significant impact and no significant harm to birds from air operations, sonar operations, laser operations, and ordnance operations.

MARINE MAMMALS: NSWC PCD RDT&E activities analyzed in the Final EIS/OEIS involve the use of MFA and HFA sonar and underwater detonations. Thirty species of marine mammals, including whales, dolphins, and manatees, have possible or confirmed occurrence in the NSWC PCD Study Area. The Final EIS/OEIS concluded that there would be no short- or long-term impact or significant harm to marine mammals from surface operations, electromagnetic operations, and laser operations. NSWC PCD conducted extensive analysis for the potential effects of underwater sound from sonar operations, ordnance operations, and projectile firing to marine mammals. As discussed below, NMFS specified the criteria to be used by the Navy in analyzing the potential effects to marine mammals from the active sonar activities analyzed in the Final EIS/OEIS.

MFA and HFA Sonar: The Final EIS/OEIS employed separate criteria to assess physiological and behavioral effects on marine mammals from exposure to MFA and HFA sonar. The approach to estimating potential physiological effects from RDT&E activities within the NSWC PCD Study Area on marine mammals used methods that were developed in cooperation with NMFS for the Navy's Undersea Warfare Training Range (USWTR) Draft EIS/OEIS (U.S. Department of the Navy, 2008), 2007 USWEX Programmatic EA/OEA, the 2006 Supplement to the 2002 RIMPAC Programmatic EA/OEA (U.S. Navy, Commander Third Fleet, 2006), and the 2007 Composite Training Unit Exercise (COMPTUEX)/Joint Task Force Exercise (JTFEX) EA/OEA. The approach to estimating potential behavioral effects of active sonar use within the NSWC PCD Study Area was adopted as a result of comments and recommendations received on these previous documents, as well as comments on the Navy's EIS/OEIS for the Hawaii Range Complex and the Navy's EIS/OEIS for Atlantic Fleet Active Sonar Training (AFAST).

1. **Physiological Effects Analysis:** The impact analysis in the Final EIS/OEIS used auditory tissues as indicators of both injurious and non-injurious physiological effects and supported the determination that permanent threshold shift (PTS) and temporary threshold shift (TTS) were the most appropriate biological indicators of physiological effects that equate to the onset of injury (Level A harassment under the MMPA) and noninjurious behavioral disturbance (Level B harassment under the MMPA). Alternative views have challenged this determination, arguing that it is inconsistent with other types of observed or reported injury. Such observed or reported injuries, however, have not been linked directly to sound exposure and may result from other processes related to the behavior of the animal. The impact analysis as presented in the Final EIS/OEIS is consistent with the scientific literature. No scientific literature exists that demonstrates a direct mechanism by which injury will occur as a result of sound exposure levels less than those predicted to cause a PTS in a marine mammal.

The Final EIS/OEIS expressed the physiological effects thresholds in terms of the total received energy flux density level (EL), which is a measure of the flow of sound energy through an area because marine and terrestrial mammal data show that, for continuous-type sounds of interest (e.g., MFA sonar pings), TTS and PTS are more closely related to the energy in the sound exposure than to the exposure sound pressure level (SPL). The EL includes both the ping SPL and duration. Longer-duration MFA and HFA sonar pings and/or higher-SPL pings will have a higher EL. If an animal is exposed to multiple pings, the energy flux density in each individual ping is summed to calculate the total EL. Therefore, the total received EL depends on the SPL, duration, and number of pings received.

Because mammalian auditory threshold shift data show less effect from intermittent exposures than from continuous exposures with the same energy (Ward, 1997), basing the physiological effect thresholds on the total received EL is a conservative approach for treating multiple pings that will likely overestimate any adverse effects; in reality, some recovery will occur between pings and lessen the effect of a particular exposure. In the Final EIS/OEIS, the sound exposure thresholds for TTS and PTS in cetacean are 195 dB re 1 μPa^2 -s received EL for TTS and 215 dB re 1 μPa^2 -s received EL for PTS.

The Navy considered criticism of its reliance on Navy studies of TTS in highly trained captive animals in the Navy's marine mammal program for its primary source of data for physiological effects. Contrary to this criticism, the Navy, with the full support of NMFS, relied on these studies because they are the most controlled studies of behavioral reactions to sound exposure available and provide the greatest amount of data. These studies recorded baseline behavior of the test subjects over many sessions so that behavioral alterations could be defined as a deviation from normal behavior. The sound exposure level received by each animal was recorded and quantified. The exposure signals used were close to the frequencies typically employed by MFA sonar. No other study provided the same degree of control or relevance to mid-frequency signal types as the TTS studies from which many of the behavioral response thresholds were derived.

The data from these studies are the best available scientific data both with respect to quality and quantity. Data from animals in the wild were utilized when sufficient information on animal behavior (both baseline and reactionary) and sound exposure levels existed. This is unfortunately a sparse amount of data. Utilization of other studies with inadequate control, observational periods, or ability to determine exposure levels of the animals would introduce a large amount of guesswork and estimation that weakens any numerical association between behavioral reactions and sound exposure. Furthermore, the limitations of the TTS studies referred to in the comment were acknowledged in the original behavioral analysis. Please see Finneran, J.J. and Schlundt, C.E. (2004), "Effects of intense pure tones on the behavior of trained odontocetes" (SSC San Diego, San Diego, CA), in particular Section 5.1.1, which details the limitations of the data collection and analysis. NMFS is aware of these limitations yet still approves, as discussed below, the usage of the data at this time because of the quality and quantity of the data. As quality data continue to be collected on animals in the wild, the relevance of the behavioral data collected during the TTS studies will decrease and will eventually be replaced. However, at this time, they provide the best available data for assessing the relationship between behavioral reactions and sound exposure.

2. Behavioral Effects Analysis: The Final EIS/OEIS concluded that the necessary information (i.e., variable and context specific behavioral responses as well as causal factors of marine mammal stranding events associated with MFA sonar) to assess behavioral effects on each species from exposure to MFA and HFA sonar is not yet complete due to the lack of empirical data, although ongoing research efforts will continue to develop the available body of data. The Final EIS/OEIS noted that the Navy has funded, and will continue to fund, research efforts to develop these data, but such an undertaking will require years to complete. The present unavailability of such information is relevant to the ability to develop species-specific behavioral effects criteria. The science of understanding the effects of sound on marine mammals is dynamic. The analysis in the Final EIS/OEIS employed the best available science. The Navy is fully committed to the use of the best available science for evaluating the potential effects of testing activities.

Methodology for Applying Risk Function: The particular acoustic risk function developed by the Navy and NMFS estimates the probability of behavioral responses that NMFS would classify as harassment for the purposes of the MMPA given exposure to specific received levels of MFA sonar. The mathematical function was derived from a solution in Feller

(1968), as defined in the SURTASS LFA Sonar Final OEIS/EIS (U.S. Department of the Navy, 2001b) and relied on in the Supplemental SURTASS LFA Sonar EIS (U.S. Department of the Navy, 2007b) with respect to potential impact from the SURTASS LFA sonar, for the probability of MFA sonar risk for MMPA Level B behavioral harassment with input parameters modified by NMFS for MFA sonar for mysticetes and odontocetes.

The NMFS independent review process described in Section 4.1.2.4.9 of U.S. Department of the Navy (2008) provided the impetus for the selection of the parameters for the acoustic risk function curves. The two NMFS scientists, one from the NMFS Office of Science and Technology and one from the Office of Protected Resources, summarized the reviews of the six scientists, and developed a recommendation. The NMFS Office of Protected Resources decided to use two risk functions, one for odontocetes (except harbor porpoises) and one for mysticetes, with applicable input parameters to estimate the risk of behavioral harassment from exposure to MFA sonar. This determination was based on the recommendation of the two NMFS scientists; consideration of the independent reviews from the six scientists; and NMFS' MMPA regulations addressing the Navy's use of SURTASS LFA sonar.

The applicable input parameters used in the acoustic risk function are based on three sources of data: TTS experiments conducted at SSC and documented in Finneran, et al., (2001, 2003, and 2005) and Finneran and Schlundt (2004); reconstruction of sound fields produced by the USS SHOUP associated with the behavioral responses of killer whales observed in Haro Strait and documented in Department of Commerce (National Marine Fisheries Service, 2005b); U.S. Department of the Navy (2004); and Fromm (2004a, 2004b); and observations of the behavioral response of North Atlantic right whales exposed to alert stimuli containing mid-frequency components documented in Nowacek et al. (2004a). The input parameters, as defined by NMFS, are based on very limited data that represent the best available science at this time.

NMFS and the Navy made the decision to apply the MFA risk function curve to HFA sources due to lack of available and complete information regarding HFA sources. As more specific and applicable data become available for MFA/HFA sources, NMFS can use these data to modify the outputs generated by the risk function to make them more realistic.

The Navy is contributing to an ongoing behavioral response study in the Bahamas that is anticipated to provide some initial information on beaked whales, the species identified as the most sensitive to MFA sonar. NMFS is leading this international effort with scientists from various academic institutions and research organizations to conduct studies on how marine mammals respond to underwater sound exposures.

Until additional data are available, NMFS and the Navy have determined that the three data sets detailed in Section 4.3.6.3 of the Final EIS/OEIS are most applicable for the direct use in developing risk function parameters for MFA and HFA sonar. Accordingly, both risk functions specified by NMFS were developed using these data sets. NMFS determined that these data sets represent the only known data that specifically relate to altered behavioral responses to exposure to mid-frequency sound sources. Until applicable data sets are

evaluated to better quantify harassment from HFA sources, the Final EIS/OEIS concluded that the risk function derived for MFA sources will apply to HFA sources.

Critique of the Two Risk Function Curves as Presented in the Final EIS/OEIS for the Hawaii Range Complex: As discussed above, the risk functions used in the Final EIS/OEIS to assess non-injurious temporary behavioral effects to marine mammals were first set forth in the Navy's Final EIS/OEIS for the Hawaii Range Complex. The Navy received several comments on the Hawaii Range Complex Final EIS/OEIS critical of the risk function curves specified by NMFS. In reviewing whether the parameters employed were based upon the best available science, the implications in the uncertainty in the values, and biases and limitations in the risk function criteria, such critique asserted that data were incorrectly interpreted by NMFS when calculating parameter values, resulting in a model that underestimates takes. Of primary importance to these commenters was the point that the risk function curves specified by NMFS do not account for a wide range of frequencies from a variety of sources (e.g., motor boats, seismic survey activities, banging on a pipe). In fact, all of the critique concerning "data sets not considered" by NMFS relate to sound sources that are either higher or lower in frequency than MFA sonar, are contextually different (such as those presented in whale watch vessel disturbances or oil industry activities), or are relatively continuous in nature as compared to intermittent sonar pings. These sounds from data sets not considered have no relation to the frequency or duration of a typical Navy MFA sonar as described in the Final EIS/OEIS.

As discussed above and in the Final EIS/OEIS, NMFS selected data sets that were relevant to MFA sonar sources and selected parameters accordingly. In order to satisfy the concern that a risk function must be inherently precautionary, NMFS could have selected data sets and developed parameters derived from a wide variety of sources across the entire spectrum of sound frequencies in addition to or as substitutes for those that best represent the Navy's mid-frequency active sonar. The net result, however, would have been a risk function that captures a host of behavioral responses beyond those that are biologically significant as contemplated by the definition of Level B harassment under the MMPA as applicable to military readiness activities. Given the results of the modeling and the marine mammal densities in the NSWC PCD Study Area, having a lower basement value would not result in any significant number of additional takes. This is demonstrated in Table 4-30 of the Final EIS/OEIS which shows that less than 1 percent of the predicted number of takes resulted from exposures below 140 dB. Accordingly, while lowering the basement value from 120 dB to something "far lower than 110 dB" would change the risk function curve, it is not likely to result in any appreciable increase in the number of takes. In addition, lowering the basement value below the present 120 dB received level would involve modeling for impacts occurring below the naturally occurring ambient background noise present in the NSWC PCD Study Area.

Such critique suggests that the criteria used to establish the risk function parameters should reflect the biological basement value where any reaction from any source is detectable. The MMPA, particularly as it applies to military readiness activities and certain federally-funded scientific research activities, does not intend to regulate any and all marine mammal behavioral reactions as suggested by the comment.

Previous comments received on the Hawaii Range Complex Final EIS/OEIS recommending that the B parameter and the data used should be revised given that, “. . . 120 dB re 1 μ Pa has broadly been found as the value at which 50 percent of individuals respond to noise . . .,” that “. . . 50 percent of migrating whales changed course to remain outside the 120 dB re 1 μ Pa contour (citing to Malme et al. 1983, 1984);” and that “. . . mysticetes exposed to a variety of sounds associated with the oil industry, typically 50 percent exhibited responses at 120 dB re 1 μ Pa” are factually inaccurate. All of these comments provided a single citation to Malme et al. (1983, 1984) for the repeated assertion that 50 percent of marine mammals will react to 120 db re 1 μ Pa. Malme et al. (1983, 1984) in fact indicated that for migrating whales, a 50-percent probability of response occurred at 170 dB for a continuous, low-frequency sound source that is very different from mid-frequency active sonar.

Regarding criticism that the model underestimates takes because of uncertainty arising from “inter-specific variation” or from “broad confidence intervals,” the risk function methodology assumes variations in responses within the species and was chosen specifically to account for uncertainties and the limitations in available data. NMFS considered all available data sets and, as discussed above, made a determination as to the best data currently available. While the data sets have limitations, they constitute the best available science. Critique that the model has limitations in that it does not account for social factors, and is likely to underestimate takes, reflects a concern that if one animal is “taken” and leaves an area then the whole pod would likely follow. As explained in Appendix M of the Final EIS/OEIS, the model does not operate on the basis of an individual animal but quantifies the exposures NMFS may classify as takes based on the summation of fractional marine mammal densities. Because the model does not consider the many mitigation measures that the Navy utilizes when it is using mid-frequency active sonar, including mid-frequency active sonar power down and power off requirements should mammals be spotted within certain distances of the sonar system, if anything, it overestimates the amount of takes.

Lastly, regarding criticism that there are additional datasets, including datasets not considered by NMFS and the Navy, that should have been considered and not having done so resulted in the model underestimating takes, the various data sources suggested by the commenters involve contexts that are neither applicable to the proposed actions nor the sound exposures resulting from those actions. For instance, Lusseau et al. (2006) involved disturbance to a small pod of dolphins exposed to 8,500 whale-watching opportunities annually. This is nothing like the type or frequency of action that is proposed by the Navy for the NSWC PCD Study Area. In a similar manner, the example from noise used in drive fisheries is not applicable to Navy testing. Navy testing involving the use of active sonar typically occurs in situations where there is only one system with active sonar, the sound is intermittent, and the testing does not involve surrounding the marine mammals at close proximity.

Furthermore, suggestions that effects from acoustic harassment devices and acoustic deterrent devices, which are relatively continuous, high-frequency sound sources (unlike MFA sonar) and are specifically designed to exclude marine mammals from habitat, are also fundamentally different from the use of MFA sonar. Finally, reactions to airguns used in

seismic research or other activities associated with the oil industry are also not applicable to mid-frequency active sonar, since the sound or noise source, its frequency, source level, and manner of use is fundamentally different.

Small Explosives: Criteria and thresholds for estimating the effects on protected species including marine mammals and sea turtles from a single explosive event were established and publicly vetted through the NEPA process during the SEAWOLF Submarine Shock Test FEIS (“SEAWOLF”) and the USS WINSTON S. CHURCHILL (DDG-81) Ship Shock FEIS (“CHURCHILL”) (DON, 2001a). The risk assessment approach for all gunfire-related sound in water was also derived from the SEAWOLF/CHURCHILL approach.

The CHURCHILL ship shock trial used three criteria for analysis of potential exposure effects: eardrum rupture (i.e., tympanic-membrane [TM] rupture); onset of extensive lung injury; and onset of slight lung injury. The threshold for TM rupture corresponds to a 50 percent rate of rupture (i.e., 50 percent of the animals exposed to the level are expected to suffer TM); this is stated in terms of an EL value of 1.17 inch pounds per square inch (in-lb/in² [about 205 dB re 1 μ Pa²-s]). This recognizes that TM rupture is not necessarily a serious or life-threatening injury, but it is a useful index of possible injury that is well correlated with measures of permanent hearing impairment (e.g., Ketten [1998] indicates a 30-percent incidence of PTS at the same threshold).

The criterion for mortality is the onset of extensive lung injury. For small mammals, the threshold is given in terms of the Goertner modified positive impulse indexed to 30.5 pounds per square inch-millisecond (psi-ms). For medium and large mammals, the threshold is 73.9 and 111.7 psi-ms, respectively. In this assessment, all cetaceans and turtles were analyzed using the threshold for small mammals for extensive lung injury. The results of the analysis, therefore, are conservative.

The threshold for onset of slight lung injury was calculated for a calf dolphin (12.2 kilograms [27 pounds]) and an adult dolphin (174 kilograms [384 pounds]); it is given in terms of the Goertner modified positive impulse, indexed to 13 psi-ms and 32 psi-ms respectively. In this assessment, all cetaceans were analyzed using the threshold for a calf dolphin for onset slight lung injury. The results of the analysis, therefore, are conservative.

The TTS energy threshold is a 182 dB re 1 μ Pa²-s maximum energy flux density level in any 1/3-octave band at frequencies above 0.1 kHz for toothed whales and in any 1/3-octave band above 0.010 kHz for baleen whales. For large explosives, the latter limits at 0.01 and 0.1 kHz make a difference in the range estimates. NMFS has defined large explosives in prior rulemaking as greater than 907 kilograms (2,000 pounds) Net Explosive Weight (NEW) (NMFS, 2006k). The Navy has defined small explosives as less than 680 kilograms (1,500 pounds) NEW per directive. For small explosives, the spectrum of the shot arrival is broad and there is essentially no difference in effects ranges for the 2 classes of animals.

The TTS peak-pressure threshold applies to all cetacean and turtle species and is stated in terms of peak pressure at 23 psi, which is based on an MMPA IHA issued to the U.S. Air Force for a similar action (NOAA, 2006c). This threshold is derived from the CHURCHILL

threshold; however, peak pressure and energy scale are at different rates per charge weight, so that ranges based on the peak-pressure threshold are much greater than those for the energy metric when charge weights are small—even when the source and animal are away from the surface. In order to more accurately estimate TTS for smaller shots while preserving the safety feature provided by the peak-pressure threshold, the peak-pressure threshold was appropriately scaled for small detonations. This scaling is based on the similitude formulas (e.g., Urick, 1983) used in virtually all compliance documents for short ranges. Further, the peak-pressure threshold for TTS for explosives offers a safety margin for a source or an animal near the ocean surface.

Effects Estimates for Active Sonar: Using the criteria specified by NMFS and the application of the Navy’s post-modeling analysis, the Navy does not estimate any mortalities of marine mammals as a result of exposure to the active sonar activities as set forth under Alternative 2. The Navy estimates that there would be no potential for injurious effects on marine mammals annually as a result of exposure to active sonar activities that NMFS would classify as Level A harassment under the MMPA. The Final EIS /OEIS estimates 1,062 non-injurious effects annually as a result of exposure to active sonar activities that NMFS would classify as Level B harassment under the MMPA. Of this total, seven annual exposures represent temporary, non-injurious physiological effects resulting from the onset of temporary threshold shift (TTS), and the remaining 1,055 annual exposures represent temporary, non-injurious behavioral effects.

Effects Estimates for Detonations: Using the criteria specified by NMFS and the application of the Navy’s post-modeling analysis, the Navy does not estimate any mortality of marine mammals as a result of exposure to detonations as set forth under Alternative 2. The Final EIS/OEIS estimates six potential injurious effects annually as a result of exposure to underwater sound from explosives that NMFS would classify as Level A harassment under the MMPA. Of this total, Navy estimated two annual exposures would result in severe lung injury, and the remaining four annual exposures represent slight lung injury effects. Subsequently, due to the proposed mitigation and monitoring activities, NMFS estimated that the take of marine mammals would be lower than number requested. The Navy estimates that there would be 82 non-injurious effects annually as a result of exposure to underwater sound from detonations that NMFS would classify as Level B harassment under the MMPA.

Effects Estimates for Projectile Firing: Using the criteria specified by NMFS and the application of the Navy’s post-modeling analysis, the Navy does not estimate any mortality of marine mammals as a result of exposure to underwater sound from projectile firing as set forth under Alternative 2. Furthermore, the Final EIS/OEIS does not estimate any potential injurious effects annually as a result of exposure to underwater sound from explosives that NMFS would classify as Level A harassment under the MMPA. The Navy estimates that there would be four non-injurious effects annually as a result of exposure to underwater sound from projectile firing that NMFS would classify as Level B harassment under the MMPA.

SEA TURTLES: Five species of sea turtles (Atlantic green, Hawksbill, Kemp's ridley, leatherback, and Atlantic loggerhead) occur in the Gulf of Mexico. All sea turtle species with the exception of the loggerhead sea turtle are classified as endangered. The loggerhead sea turtle is classified as threatened.

There would be no significant impact and no significant harm to sea turtles from surface operations, electromagnetic operations, or laser operations. NSW PCD conducted extensive analysis for the potential effects of underwater sound from sonar, ordnance, and projectile firing to sea turtles.

As discussed in Section 4.3.7.2 of the Final EIS/OEIS, sea turtle auditory capabilities and sensitivity have not been well studied. However, the research that has been conducted shows that most of the sea turtles that have been tested exhibit hearing sensitivity and responses to low frequency sounds. It appears that if there were the potential for the mid and high frequency sonar systems to increase masking effects for any sea turtle species, it is expected to be minimal. Additionally, although little data exists on sea turtle hearing and past studies are limited, sea turtle navigation has been relatively well studied. Unlike marine mammals, researchers have found that sea turtles use non-acoustic cues in migration and particularly in movement related to hatchling activity, nesting, and long-distance migrations. Hatchlings primarily use magnetic fields to navigate (Lohmann, 1991; Lohmann and Lohmann, 1996). Recent studies have found that they supplement this navigation technique with a secondary method based on the sun or skylight (Avens and Lohman, 2003). Avens and Lohmann (2004) captured data consistent with a conclusion that juvenile and adult sea turtles have a map-based navigation capability (or they are able to home to specific locations). Sea turtles of these age classes may use other indicators such as chemical cues and magnetic fields to navigate to specific areas (Avens and Lohmann, 2004). Since sea turtles rely on sensory systems other than hearing to navigate and because the sonar systems used during NSW PCD RDT&E activities are at frequency ranges higher than the optimal hearing capabilities of sea turtles, mid- and high-frequency active sonar would not affect sea turtle navigation. Therefore, based on the best available scientific data including low audiometric and behavioral sensitivity by sea turtles to low-frequency sound and their navigation techniques through sensory systems other than hearing, in accordance with NEPA, no significant impacts are anticipated to sea turtles from sonar operations under the No Action Alternative, Alternative 1, or Alternative 2. In addition, there would be no significant harm to sea turtles from active sonar activities in non-territorial waters under the No Action Alternative, Alternative 1, or Alternative 2.

Effects Analysis: Because thresholds specific to sea turtles have not been developed, the Navy applied the approach the thresholds identified for marine mammals in the SEAWOLF EIS because it is reasonable to assume sea turtle lungs and other gas-containing organs will be similarly affected by shock waves (DON, 1995). As was the case for SEAWOLF and CHURCHILL, criteria and thresholds for effects on protected sea turtles' TTS are the same as those for toothed whales.

Effects Estimates for Detonations and Projectile Firing: The modeling resulted in zero takes by mortality, zero PTS takes and seven TTS takes from ordnance operations and zero

takes by mortality, zero PTS takes, and two TTS takes from projectile firing. After concluding that the proposed ordnance and projectile firing activities “may affect” endangered and threatened sea turtles under the Endangered Species Act, Navy commenced consultation with NMFS. NMFS completed the consultation on September 15, 2009, when it issued a Programmatic Biological Opinion (BO) in which it concluded that the Navy’s proposal to conduct NSWC PCD RDT&E activities in the Gulf of Mexico and St. Andrew Bay for a 5-year period beginning in November 2009 are likely to adversely affect but are not likely to jeopardize the continued existence of these threatened and endangered species under NMFS jurisdiction.

SOCIOECONOMICS: There would be no significant impact and no significant harm to socioeconomics including recreational fishing, scuba diving, commercial fishing, and shipping from NSWC PCD RDT&E activities.

AIRSPACE MANAGEMENT: There would be no significant impact and no significant harm to airspace management from air operations.

ARTIFICIAL REEFS: There would be no significant impact and no significant harm to artificial reefs from NSWC PCD RDT&E activities.

CULTURAL AND HISTORICAL RESOURCES: There would be no significant impact and no significant harm to cultural and historical resources from sonar, laser, electromagnetic, ordnance, projectile firing, air, surface, and subsurface operations.

ENVIRONMENTAL JUSTICE AND RISKS TO CHILDREN: The potential to cause disproportionately high and adverse effects on minority populations, low income populations, or risks to children is highly unlikely. There would be no significant impact and no significant harm to environmental justice or children from NSWC PCD RDT&E activities.

SUMMARY OF MITIGATION AND PROTECTIVE MEASURES: The mitigation measures in the Final EIS/OEIS were developed for RDT&E activities and may be different to some extent to those mitigation measures developed for Fleet training that are contained in other Navy EIS/OEIS documents. Fleet training involves preparing naval forces for deployments and operations overseas. RDT&E activities involve evaluating developing systems that may be used by naval forces overseas in the future or used as part of programs that result in systems used by naval forces when they deploy.

The following mitigation and protective measures would be implemented for the protection of a number of areas and resources that would be avoided during specific operations at certain times of the year:

Protective Measures Related to Subsurface Operations: No mine-like object (MLO) and versatile exercise mine (VEM) placement or crawler operations would occur within areas of seagrass; no MLO and VEM placement or crawler operations would occur within areas of known hardbottom; activities such as mine placement and crawler operations that cause bottom disturbance would not be conducted in Marine Managed Areas; mine placement and

anchoring would not be conducted in areas that could damage hardbottom or seagrass habitats; activities such as mine placement and crawler operations that cause bottom disturbance would not occur over artificial reefs or known shipwrecks. If an unknown shipwreck is uncovered, the SHPO would be notified and all activities would cease.

Protective Measures Related to Electromagnetic Operations: When operationally feasible, electromagnetic operations and tests would not be conducted within 0.03 kilometer (km) (approximately 0.02 nautical mile [NM]) of shore during sea turtle nesting and hatching season, which is considered to be May through September; RDT&E marine species observers would monitor the system for contact with marine mammals or sea turtles during all test operations involving electromagnetic field generation.

Protective Measures Related to Detonations and Projectiles:

- Ammunition casings would be collected when possible. Some of the casings from the rounds would be expected to fall within the test platform. They should be collected when possible and not swept into the water.
- No detonations would occur within areas of seagrass or where they could damage seagrass habitat.
- No detonations would occur within hardbottom areas or where they could damage hardbottom habitat.
- Detonations that cause bottom disturbance would not occur over artificial reefs or known shipwrecks. If an unknown shipwreck is uncovered, the SHPO would be notified and all activities would cease.
- No detonations would occur in estuarine areas.
- Detonations would not occur if flocks of birds are rafting on the water's surface inside a test area or if flocks of birds are migrating directly above the proposed test site.
- Gulf sturgeon critical habitat occurs from the shoreline to 1.9 km (1.2 mi) offshore throughout the NSWC PCD Study Area. During the months of October and November, many of these fish move from fresh water into the Gulf of Mexico (GOMEX) and may be found in the marine portion of critical habitat. They generally remain in the GOM until March. Therefore, when operationally feasible, surf zone line charge detonations would not be conducted between October and March.
- If a Gulf sturgeon was sighted close to the line charge detonation point, tests would be postponed until the animal is over 0.8 km (0.5 mi) from the detonation point.
- No surf zone line charge detonations would be conducted during sea turtle nesting season.
- No surf zone line charge detonations would be conducted within 24 hours of any turtle nest hatching on U.S. Air Force property within 5 km (3 mi) in either direction of the detonation site.

The following mitigation measures, monitoring and reporting requirements, and monitoring plan and stranding responses were developed based on the results of the consultations with NMFS in accordance with the MMPA and Section 7 of the ESA.

MMPA Permit Request and ESA Section 7 Consultation: As discussed below, the Navy requested a MMPA incidental take authorization. A Notice of Receipt of Application was published in the Federal Register on April 14, 2008 (73 Fed. Reg. 2009). NMFS issued MMPA regulations addressing the incidental take of marine mammals for NSWCD RDT&E activities effective on the date it is published at the Office of the Federal Register. In addition, the Navy entered into early consultation with NMFS in accordance with Section 7 of the ESA. On September 15, 2009, NMFS issued an ESA Programmatic Biological Opinion. NMFS will issue annual ESA Incidental Take Statements and MMPA Letters of Authorization (LOAs). As required in the NMFS LOA and Incidental Take Statement, to minimize the potential for impacts on marine mammals from RDT&E activities, NSWCD will include implementation of the following mitigation measures during test events:

1. **Mitigation Measures Related to Acoustic Effects from Sonar:** As discussed in the NMFS MMPA regulations for NSWCD active sonar activities and ESA Biological Opinion, the Navy would implement various mitigation measures to maximize the ability of RDT&E personnel to recognize instances when marine mammals are in the vicinity of NSWCD RDT&E activities. These measures include the following: training personnel in marine species observer duties; stationing at least one to three marine species observer with binoculars in test events with potential exposures to marine mammals from acoustic sources based on vessel length; using all available sensor and optical systems such as night vision goggles during MFA and HFA sonar activities; using pedestal mounted “Big Eye” (20 x 110) binoculars on surface vessels equipped with AN/SQS-53C/56; employing a scanning methodology during visual search procedures in accordance with the Lookout Training Handbook (NAVEDTRA 12968-D); employing Night Lookout Techniques after sunset and prior to sunrise; maintaining the logs and records documenting RDT&E activities and kept for a period of 30 days; including a Record of Environmental Consideration in the Test Plan prior to the test event; immediately reporting any marine mammal detections to the Test Director or Test Director’s designee for further dissemination to vessels in the vicinity of the marine species; limiting ship active transmission levels to at least 6 dB below normal operating levels when marine mammals are detected by any means within 914 meters (1,000 yards) of the sonar system; limiting ship active transmission levels to at least 10 dB below normal operating levels when marine mammals are detected by any means within 457 meters (500 yards) of the sonar systems, or ceasing ship active transmissions when a marine mammal is detected by any means within 183 meters (200 yards) of the sonar system; if the need for such power-down arises, following power-down requirements as though the system is operating at 235 dB, the normal operating level (i.e., power-down would be to 229 dB); operating sonar at the lowest practicable level, not to exceed 235 dB, except as required to meet NSWCD RDT&E objectives; placing an observer on a support platform during AUV/UUV operations that would allow the observer to visualize the general area or modify the plan consistent with the nature of the specific system. If, after conducting an initial maneuver to avoid close quarters with dolphins, the ship concludes that dolphins are deliberately closing in on the ship to ride the vessel’s bow wave, no further mitigation actions

would be necessary because dolphins are out of the main transmission axis of the active sonar while in the shallow-wave area of the vessel bow.

2. **Mitigation Measures Related to Detonations:** As discussed in the NMFS MMPA regulations for NSWC PCD RDT&E activities and the ESA Biological Opinion, the Navy would implement the following mitigation measures for detonations and projectile firing: no detonations over 34 kilograms (kg) (75 pounds [lbs]) would be conducted in territorial waters; the number of live mine detonations would be minimized and the smallest amount of explosive material possible to achieve test objectives would be used; activities would be coordinated through the Environmental Help Desk to allow potential concentrations of detonations in a particular area over a short time to be identified and avoided; visual surveys and aerial surveys of clearance zones would be conducted for all test operations that involve detonation events with large NEW and projectile firing; line charge tests would not be conducted during the nighttime; additional mitigation measures would be determined through the NSWC PCD's Environmental Review Process based on test activities including size of detonations, test platforms, and environmental effects documented in the EIS/OEIS; and post-mission surveys of the impact range will be conducted from the surface vessels and aircraft used for pre-test surveys to verify the presence of dead or injured marine mammals or sea turtles. Any such affected marine species would be documented and reported to NMFS. Clearance zones would be determined based on the upper limit of different ranges of NEW used in the tests: NEW between 76 – 600 lb: clearance zone is 2,863 m (9,393 ft); NEW between 11 – 75 lb: clearance zone is 997 m (2,865 ft); and NEW less than 11 lb: clearance zone is 345 m (1,132 ft).

3. **Mitigation Measures for Surface Operations:** As discussed in the NMFS MMPA regulations for NSWC PCD RDT&E activities and the ESA Biological Opinion, the Navy would implement the following mitigation measures for surface operations: vessels underway would have at least one to three marine species awareness training observers (based on vessel length) with binoculars watching for and reporting to the Test Director or Test Director's designee the presence of marine mammals – for vessels under 65 ft (20 m) there would be at least one marine species observer on watch, for vessels with length between 65 – 200 ft (20 – 61 m) there would be at least two marine species observers on watch, for vessels with length above 200 ft (61 m) there would be at least three marine species observers on watch; marine species observers would employ a scanning methodology during visual search procedures in accordance with the Lookout Training Handbook (NAVEDTRA 12968-D); while in transit, naval vessels would be alert at all times, use extreme caution, and proceed at the minimum speed that would not compromise mission goals or safety so that the vessel can take proper and effective action to avoid a collision with any marine animal and can be stopped within a distance appropriate to the prevailing circumstances and conditions; when marine mammals have been sighted in the area, Navy vessels would increase vigilance and implement measures to avoid collisions with marine mammals and avoid activities that might result in close interaction of naval assets and marine mammals. Actions would include changing speed and/or direction and are dictated by environmental and other conditions; naval vessels would maneuver to keep at least 500 yd (460 m) away from any observed whale and avoid approaching whales head-on, but does not apply if a vessel's safety is threatened; vessels would take reasonable steps to alert other vessels in the vicinity of the whale; where

operationally feasible and safe, vessels would avoid closing to within 183 m (200 yd) of marine mammals other than whales.

Monitoring and Reporting Requirements: As discussed in the NMFS MMPA regulations for NSWC PCD RDT&E activities and the ESA BO, the Navy will implement the following monitoring and reporting requirements: cooperate with the NMFS when monitoring the impacts of the activity on marine mammals; notify NMFS immediately (or as soon as clearance procedures allow) if an RDT&E activity is thought to have resulted in the mortality or injury of any marine mammals, or in any take of marine mammals not identified or authorized; conduct all monitoring and required reporting under the Letter of Authorization, including abiding by the NSWC PCD Study Area Complex Monitoring Plan; visually survey a minimum of two HFAS/MFAS activities and two explosive events per year. (If the 53C sonar was being operated, such activity must be monitored as one of the HFAS/MFAS activities. For explosive events, one of the monitoring measures shall be focused on a multiple detonation event); deploy a hydrophone or a towed array in the NSWC PCD Study Area for passive acoustic monitoring whenever shipboard surveys are being conducted each of the days the ship is at sea; use civilian Marine Mammal Observers (MMOS) to research the effectiveness of Navy marine species observers, as well as for data collection during other monitoring surveys; ensure that NMFS (regional stranding coordinator) is notified immediately (or as soon as clearance procedures allow) if an injured or dead marine mammal is found during or shortly after, and in the vicinity of, any Navy's RDT&E activities utilizing underwater explosive detonations; submit an annual report describing the RDT&E and Monitoring Plan activities conducted and implemented during that year; submit a five-year comprehensive report to NMFS that analyzes and summarizes all of the multi-year marine mammal information gathered during sonar operations and underwater explosive events that have occurred; respond to NMFS comments and requests for additional information or clarification on the NSWC PCD Comprehensive Report and the Annual NSWC PCD Report if submitted within 3 months of receipt; convene a Monitoring Workshop in 2011 in which the Monitoring Workshop participants will be asked to review the Navy's Monitoring Plans and monitoring results and make individual recommendations (to the Navy and NMFS) on the Monitoring Plans. NMFS and the Navy would then analyze from Monitoring Workshop participants and determine the best way forward from a national perspective.

Monitoring Plan: As a part of the NMFS rule-making process, the Navy and NMFS have completed the final NSWC PCD monitoring plan and the Integrated Comprehensive Monitoring Plan. The ICMP is intended to provide an overarching coordination that will support compilation of data from both range-specific monitoring plans, as well as Navy funded research and development (R&D) studies. The objectives of the monitoring plan monitor and assess the efficacy of Navy activities on protected species; ensure that data collected at multiple locations is collected in a manner that allows comparison between and among different geographic locations; assess the efficacy and practicality of the monitoring and mitigation techniques; and add to the overall knowledge-base of marine species and the effects of Navy activities on marine species.

AGENCY CONSULTATION AND COORDINATION: NMFS was the cooperating agency throughout the entire EIS/OEIS process. NSWC PCD requested NMFS to participate

in the NEPA process because of their special expertise and permitting jurisdiction over marine species potentially impacted by the proposed action. In addition, NSWC PCD solicited comments from the Florida and Alabama State Clearinghouses concerning the proposed action's consistency with each state's Coastal Zone Management Plan (CZMA). A summary of the results from each consultation and coordination process is included below:

Marine Mammal Protection Act: In support of the proposed action, in March 2008 the Navy applied for an authorization pursuant to Section 101(a)(5)(a) of the MMPA. After the application was reviewed by NMFS, a Notice of Receipt of Application was published in the *Federal Register* on April 14, 2008 (73 Fed. Reg. 20029). Publication of the Notice of Receipt of Application initiated the 30-day public comment period, during which anyone could obtain a copy of the application by contacting NMFS. NMFS developed regulations governing the issuance of a LOA and published a Proposed Rule in the *Federal Register* on April 30, 2009 (74 Fed. Reg. 20156). Publication of the Proposed Rule initiated another 30-day public comment period, which ended on June 1, 2009. The Final Rule is effective on the date it is published at the Office of the Federal Register for a period of five years.

Endangered Species Act: As part of the environmental documentation for the Final EIS/OEIS, and as an MMPA permit applicant, the Navy entered into early consultation procedures with NMFS regarding the potential effects on ESA-listed species from the conduct of the activities outlined in the NSWC PCD Final EIS/OEIS. In accordance with 50 CFR § 402.11, after reviewing the current status of the endangered gulf sturgeon, sperm whale, hardshell sea turtle, loggerhead sea turtle, and leatherback sea turtle; the environmental baseline for the NSWC PCD Study Area; and the cumulative effects, prior to the issuance of this NSWC PCD ROD, NMFS issued a Programmatic Biological Opinion concluding that the Navy's proposal to conduct NSWC PCD RDT&E activities in the NSWC PCD Study Area, are likely to adversely affect but are not likely to jeopardize the continued existence of these threatened and endangered species under NMFS's jurisdiction.

Coastal Zone Management Act: In accordance with the CZMA, the Navy has reviewed the enforceable policies of each state's Coastal Zone Management Plan (CZMP) located adjacent to the NSWC PCD Study Area. Based on the location of NSWC PCD RDT&E activities, the enforceable policies of each state's CZMP, and pursuant to 15 CFR § 930.39, the Navy prepared Consistency Determinations for the states of Florida and Alabama.

The Navy received a letter from the Florida State Clearinghouse, which provided concurrence with the respective Consistency Determination. In accordance with 15 C.F.R. § 930.41, state agencies have 60 days from receipt of this document in which to concur with or object to the Consistency Determination, or to request an extension, in writing, under 15 C.F.R. § 930.41(b). The federal agency may presume state agency concurrence if the state agency's response is not received within 60 days from receipt of the federal agency's consistency determination and supporting information. Since, the Alabama Department of Environmental Management did not respond to or request an extension after the 90th day from receipt of the determination, the Navy concludes that Alabama concurred with the Consistency Determination.

RESPONSES TO COMMENTS ON THE FINAL EIS/OEIS: The Notice of Availability of the NSW PCD Final EIS/OEIS was published in the *Federal Register* (74 Fed. Reg. 48951), in three newspapers, and on the NSW PCD EIS/OEIS website. Release of the NSW PCD Final EIS/OEIS was accompanied by a 30-day wait period. The Navy reviewed and considered all comments that were received during the wait period following the issuance of the Notice of Availability of the Final EIS/OEIS. The comments summarized here represent major substantive comments that were not previously addressed in the Final EIS/OEIS based on comments received on the Draft EIS/OES; addressed a change in the Final EIS/OEIS from the Draft EIS/OEIS; and were received by October 25, 2009. A total of two comment letters were received on the Final EIS/OEIS from the Division of Historical Resources and the EPA. Two comments from the EPA warranted a specific response and are provided below.

Comment 1: EPA supports the Navy's inclusion of a number of important protective measures that would be implemented for certain operations and for identifying a number of areas that would be avoided during certain operations and at certain times of the year. EPA strongly recommends that the Navy include these specific commitments in the Record of Decision for the project.

Response: Protective Measures were developed by NSW PCD to further protect the marine environment. In particular, areas such as seagrass, hardbottom habitat and coral reefs are to be avoided when conducting certain RDT&E activities. Protective measures are detailed in the Summary of Mitigation and Protective Measures section in this Record of Decision.

Comment 2: The commitment on the part of the Navy to develop an Integrated Comprehensive Monitoring Program (ICMP) is important given the magnitude of proposed RDT&E activities and the geographic size of the study area. EPA supports the development of a comprehensive monitoring program to ensure that the ongoing impacts from these activities are assessed and appropriately addressed/mitigated once identified. However, it appears that the focus of the ICMP will be limited to marine mammals and other threatened and endangered species. In accordance with the Navy's newly implemented Water Range Sustainability Environmental Program Assessment [WRSEPA] Policy, EPA also recommends that the monitoring be expanded to include some additional items not currently discussed. In addition to analyzing behavioral responses of marine mammals to certain activities, the ICMP should also address the effectiveness of the other protective measures in avoiding and reducing impacts to important biological areas, such as seagrass, areas of known hardbottom habitat, coral reefs, or essential fish habitat. EPA views this commitment as an opportunity to conduct important impact assessment monitoring and utilize adaptive management to adjust RDT&E activities in the future depending on the outcome.

Response: The ICMP has been defined by the Navy as relevant only to the Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA) issues involving marine mammals and sea turtles. As such, it is not the appropriate venue to address monitoring

associated with other biological areas, such as seagrass, areas of known hardbottom habitat, coral reefs, or essential fish habitat.

CONCLUSIONS: After careful consideration of the purpose and need of the proposed action, the analysis contained in the EIS/OEIS, and comments received on the EIS/OEIS from federal, state, local agencies, non-government organizations, and individual members of the public, I have decided to proceed with the Preferred Alternative, Alternative 2. The Preferred Alternative fully meets the purpose and need of the Proposed Action as this Alternative provides NSWC PCD the ability to maximize operational capability for known activities over the next five years, as well as enhance its RDT&E capacity by anticipating an increase in the overall tempo of RDT&E activities over the next five years. Additionally, Alternative 2 increases the capacity and use of the NSWC PCD Study Area by DoD entities to the fullest optimal level without impact to operations caused by infrastructure restrictions.

There will be no significant adverse environmental impacts associated with implementing the Preferred Alternative. Implementation of mitigation measures and adherence to monitoring requirements developed during consultations with NMFS will minimize the potential for impacts to environmental resources in the NSWC PCD Study Area. Additionally, the Navy will continue to review its procedures and coordinate with other federal, state, and local entities as necessary to determine if any additional mitigation measures are necessary, feasible, and practicable.

4/15/10
Date


Roger M. Natsuhara
Principal Deputy Assistant Secretary of the
Navy (Installations and Environment)