DEPARTMENT OF DEFENSE

Department of the Navy

Record of Decision for the Ongoing and Proposed Use of the Northwest Training Range Complex

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 implement Alternative 2 to continue to support and conduct current, emerging, and future training and research, development, test, and evaluation (RDT&E) activities in the Northwest Training Range Complex (NWTRC) to achieve required levels of operational readiness. This decision 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.

In the Final NWTRC Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS), the Navy evaluated potential environmental effects associated with implementation of the Proposed Action. The environmental analysis undertaken by the Navy included formal consultations with the National Marine Fisheries Service (NMFS), a cooperating agency for the EIS/OEIS, and the United States (U.S.) Fish and Wildlife Service (USFWS). Public awareness and participation were integral components of this EIS/OEIS process. The Navy ensured that Native American Indian Tribes and Nations, federal agencies, state agencies, local entities, other organizations and members of the public 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 environmental issues included in the Final EIS/OEIS. Native American Indian Tribes and Nations were invited to participate in Government to Government consultation. The Navy representatives met with tribal staff to resolve comments and concerns; therefore no formal Government to Government consultation was required.

Alternative 2, also referred to as the Preferred Alternative, is designed to meet Navy and Department of Defense current and near-term operational training requirements. Under Alternative 2, the Navy will accommodate training activities currently conducted, increase training activities, accommodate changes in basing locations for ships, aircraft, and personnel (force structure changes), and provide for range enhancements. The NWTRC will support an increase in most training activities, to include force structure changes associated with the introduction of new weapon systems, vessels, and aircraft into the Fleet. Under Alternative 2, most baseline training activities will be increased. In addition, training activities associated with force structure changes will be implemented for the EA-18G Growler, Guided Missile

Submarine, P-8A Poseidon Multimission Maritime Aircraft, and Unmanned Aerial Systems (UASs). Force structure changes associated with new weapons systems will include air-to-air missiles and sonobuoys.

Although most activities in the in-shore area will increase under Alternative 2, mine countermeasure activities will decrease. Under Alternative 2, no more than two underwater detonations per year (a decrease of 56 detonations) will take place at Crescent Harbor, and no more than two underwater detonations per year will take place at Floral Point, for a maximum of four detonations per year. The charges will be no larger than 2.5 pounds at Crescent Harbor and 1.5 pounds at Floral Point.

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SUPPLEMENTARY INFORMATION: Pursuant to section 102 of the National Environmental Policy Act (NEPA) of 1969, section 4321, *eq. seq.* of Title 42, U.S. Code (U.S.C.), Council on Environmental Quality regulations (parts 1500-1508 of Title 40 Code of Federal Regulations [CFR]), and Department of Navy regulations (part 775 of Title 32 CFR), the Navy announces its decision to continue current training and RDT&E activities conducted within the NWTRC, increase training tempo from baseline conditions, conduct new types of training, accommodate force structure changes, and optimize range capabilities by implementing range enhancements, as set out in Alternative 2 and described in the Final EIS/OEIS as the Preferred Alternative. The decision will enable the Navy to improve the availability and quality of training opportunities within NWTRC to achieve required levels of operational readiness. The Navy considered applicable executive orders, including an analysis of the environmental effects of its actions outside the United States or its territories under Executive Order 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* and Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks.*

BACKGROUND AND ISSUES: The Navy's mission is to organize, train, equip, and maintain combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. This mission is mandated by Federal law (Title 10 U.S.C. § 5062), which charges the Chief of Naval Operations with responsibility for ensuring the readiness of the United States' naval forces. The Chief of Naval Operations meets that directive, in part, by establishing and executing training programs, including at-sea training and exercises, including mid-frequency active (MFA) and high-frequency active (HFA) sonar activities, and ensuring naval forces have access to the ranges, operational areas, and airspace needed to develop and maintain skills for conducting naval activities. Activities involving RDT&E for naval systems are an integral part of this readiness mandate.

The existing NWTRC plays a vital part in the execution of this naval readiness mandate. The NWTRC is a backyard range for those units homeported in the Pacific Northwest area, including those aviation, surface ship, submarine, and Explosive Ordnance Disposal (EOD) units homeported at Naval Air Station (NAS) Whidbey Island, Naval Station (NAVSTA) Everett, Puget Sound Naval Shipyard, Naval Base Kitsap-Bremerton, and Naval Base Kitsap-Bangor (formerly known as SUBASE Bangor).

NWTRC includes ranges, operating areas, and airspace that extend west to 250 nautical miles (nm) (463 kilometers [km]) from the coast of Washington, Oregon, northern California and to the east just beyond the Washington/Idaho border. All of these areas have been in use and continue to be used by Navy forces for regular and routine training. The components of the NWTRC encompass 122,400 nm^2 (420,163 km^2) of surface/subsurface ocean operating areas, 46,048 nm^2 (157,928 km^2) of special use airspace, and 875 acres (354 hectares) of land. For range management and scheduling purposes, the NWTRC is divided into numerous sub-component ranges or training areas used to conduct training and RDT&E activities. The NWTRC consists of two primary components: the Offshore Area and the Inshore Area. The Offshore Area includes surface and subsurface operating areas extending generally west from the coastline of Washington, Oregon, and Northern California for a distance of approximately 250 nm (463 km) into international waters. Although this area extends to the coastline of these states, no training that involves live explosives is conducted within 3 nm of shore. The Inshore Area includes all air, land, sea, and undersea ranges and operating areas inland of the coastline including the Puget Sound routinely used by the Navy for a variety of surface and underwater activities. Training activities in the Puget Sound involving the use of mid-frequency active sonar were not proposed in this EIS/OEIS.

The NWTRC currently provides strategically vital training attributes. Nevertheless, certain shortfalls constrain its ability to support required training. Correcting these shortfalls will enhance the NWTRC to provide the minimum acceptable training environment required by naval forces that utilize the Range Complex. Current shortfalls include an inadequate number and type of effective targets, inadequate training environments for “opposition forces”, and insufficient instrumentation systems for conducting training. The capabilities of the NWTRC must be sustained, upgraded, and modernized to address these shortfalls. Moreover, Range Complex personnel must have the flexibility to adapt and transform the training environment as new weapons systems are introduced, new threat capabilities emerge, and new technologies offer improved training opportunities.

PURPOSE AND NEED: Given the vital importance of the NWTRC to the readiness of U.S. naval forces, the unique training environment provided by the Range Complex and the shortfalls in the Range Complex that affect the quality of training, the Navy proposes to take actions for the purposes of achieving and maintaining Fleet readiness using the NWTRC to support and conduct current, emerging, and future training and RDT&E activities; expanding warfare missions supported by the NWTRC, consistent with Navy requirements; and upgrading and

modernizing existing range capabilities to address shortfalls and deficiencies in current training ranges.

The Proposed Action is needed to provide a training environment consisting of ranges, training areas, and range instrumentation with the capacity and capability to fully support required training tasks for operational units and military schools. The Navy developed a set of criteria that satisfy the purpose and need for the Proposed Action. These criteria are discussed below in the discussion of alternatives considered.

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 (NOI) for this project was published in the Federal Register (FR) on July 31, 2007 (72 FR 41712), and in seven local newspapers (Seattle Times, Kitsap Sun, Whidbey News-Times, Peninsula Daily, Daily World, The News Guard, Times-Standard). The NOI and newspaper notices included information regarding the procedure for submitting comments, a list of information repositories (public libraries), the project website address (http://www.NWTRangeComplexEIS.com), and the dates and locations of the scoping meetings.

Scoping is an early and open process for developing the scope of issues to be addressed in the EIS/OEIS and for identifying significant issues related to a proposed action. The five scoping meetings for this EIS/OEIS (held in Oak Harbor, WA; Pacific Beach, WA; Grays Harbor, WA; Depoe Bay, OR; and Eureka, CA) helped the Navy define and prioritize the issues and concerns expressed by the public. As a result of the scoping process, the Navy received comments from the public, as well as agencies, special interest groups, and federally recognized Native American Tribes and Nations, which were considered in the preparation of the Draft EIS/OEIS.

The Draft EIS/OEIS was prepared to assess the potential effects of the Proposed Action and alternatives on the human environment incorporating public input from the scoping process. The Draft EIS/OEIS was then provided to the U.S. Environmental Protection Agency (EPA) for review and comment. A notice of availability was published in the Federal Register on December 29, 2008 (73 FR 79473) and notices were placed in seven local newspapers (Seattle Times, Kitsap Sun, Whidbey News-Times, Peninsula Daily, Daily World, The News Guard, Times-Standard) announcing the availability of the Draft EIS/OEIS. The Draft EIS/OEIS was made available for general review and was circulated for review and comment (available at: Jefferson County Rural Library, Kitsap Regional Library, Oak Harbor Public Library, Timberland Regional Library, Port Townsend Public Library, Lincoln City Public Library, and Humboldt County Library). A notice of public hearings was published in the Federal Register (73 FR 79856) the next day, December 30, 2008. The notices of availability and public hearings announced a 45-day comment period scheduled to end on February 11, 2009. Following public requests that the comment period be extended, the Navy agreed and extended the period three times, ultimately providing a 105-day comment period that ended on April 13, 2009. The three extensions were published in the Federal Register on February 11 (74 FR 6859), February 25 (74 FR 8514), and March 18, 2009 (74 FR 11532). Public hearings in Washington and California

were held in the same geographic locations as the scoping meetings to receive public comments on the Draft EIS/OEIS. The Oregon public hearings were held in Newport and Tillamook, OR.

The Final EIS/OEIS was prepared in response to all public comments received on the Draft EIS/OEIS. Responses to public comments may take various forms such as correction of data, clarifications of and modifications to analytical approaches, and inclusion of additional data or analyses. The Notice of Availability of the Final EIS/OEIS was published in the Federal Register on September 10, 2010 (75 FR 55326). Notification of the availability of the Final EIS/OEIS was also made through various newspapers and media outlets, including the Seattle Times, Whidbey News-Times, Peninsula Daily, Daily World, The Oregonian, Times-Standard, Daily Astorian, Tillamook Headlight Herald, Newport News-Times, South Lincoln County News, Suislaw News, Curry County Reporter, and The World. In addition, press releases were sent to 97 media outlets, including television, radio, and newspapers. The Final EIS/OEIS was distributed to those individuals, agencies, and associations who requested copies during the public comment period for the Draft EIS/OEIS, as well as members of Congress, local officials, and Native American Tribes and Nations. 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 Final EIS/OEIS was made available for general review at 16 public libraries and on the project website (http://www.NWTRangeComplexEIS.com). Due to public requests, additional notifications were published in seven newspapers and copies of the Final EIS/OEIS were sent to 9 additional libraries.

ALTERNATIVES CONSIDERED: Alternatives considered in this EIS/OEIS were developed by the Navy after careful assessment by subject-matter experts, including units and commands that utilize the ranges, range management professionals, and Navy environmental managers and scientists. The Navy developed a set of criteria for use in assessing whether a possible alternative meets the purpose of and need for the Proposed Action. Each criterion assumes implementation of mitigation measures for the protection of natural resources as appropriate. Any alternative considered for future analysis should support or employ the following criteria: all requirements of the Fleet Response Training Plan as they apply to training conducted in the NWTRC; achievement of training tempo requirements based on Fleet deployment schedules; joint training events; basic and intermediate training of Navy forces across all applicable Navy Primary Mission Areas; training requirements of formal military schools located at Navy installations throughout the Northwest Pacific region; Navy RDT&E activities associated with UAS; allied military training activities; alignment of the NWTRC infrastructure with Naval Force structure, including training with new weapons, systems, and platforms (vessels and aircraft) as they are introduced into the Fleet; sustainable range management practices that protect and conserve natural and cultural resources; and preservation of access to training areas for current and future training requirements, while addressing potential encroachments that threaten to impact range capabilities.

National Environmental Policy Act regulations require that the federal action proponent study means to mitigate adverse environmental impacts when going forward with a proposed action or an alternative (40 CFR § 1502.16). Additionally, an EIS is to include a study of appropriate mitigation measures not already included in a proposed action or the alternatives (40 CFR § 1502.14). Each of the alternatives, including Alternative 2 (Preferred Alternative) considered in this EIS/OEIS, includes mitigation measures intended to reduce the environmental effects of Navy activities. Mitigation measures, such as current requirements and practices are discussed throughout this EIS/OEIS.

1. Alternatives Eliminated from Further Consideration: When developing a reasonable range of alternatives, the Navy identified and eliminated three alternatives from further consideration: (1) use alternate training complex locations; (2) substitute simulated training for live training; and (3) reduce training levels. The alternatives were not reasonable because they could not meet the purpose and need. Furthermore, these alternatives could not meet specific NWTRC requirements to accommodate training activities currently conducted, increase training activities, accommodate changes in basing locations for ships, aircraft, and personnel (force structure changes), and provide for range enhancements.

2. Alternatives Considered: Three alternatives are analyzed in this EIS/OEIS: 1) The No Action Alternative – Current Activities; 2) Alternative 1 – Increase Training Activities and Accommodate Force Structure Changes; and 3) Alternative 2 – Increase Training Activities, Accommodate Force Structure Changes, and Implement Range Enhancements.

a. No Action Alternative: For proposals involving changes to ongoing activities, Council on Environmental Quality guidance describes "no action" as "'no change' from management direction or level of intensity" and "continuing with the present course of action until the action is changed." Consequently, the No Action Alternative would continue baseline training activities. The Navy has been operating in the NWTRC since before World War II, and naval training activities currently conducted in the NWTRC have been ongoing at present levels and frequencies for approximately 10 years. Under the No Action Alternative, the NWTRC would not accommodate an increase in training activities or implement proposed force structure changes, nor would it implement range enhancements as necessary by the Navy. Evaluation of the No Action Alternative in this EIS/OEIS provides a baseline for assessing environmental impacts of Alternative 1 and Alternative 2 (Preferred Alternative).

b. Alternative 1: Alternative 1 is a proposal designed to meet Navy and Department of Defense current and near-term operational training requirements. If Alternative 1 were to be selected, in addition to accommodating training activities currently conducted, the NWTRC would support an increase in most training activities to include force structure changes associated with the introduction of new weapon systems, vessels, and aircraft into the Fleet. Under Alternative 1, most baseline-training activities would be increased. In addition, training activities associated with force structure changes would be implemented for the EA-18G Growler, Guided Missile Submarine, P-8A Poseidon Multimission Maritime Aircraft, and UASs.

Force structure changes associated with new weapons systems would include air-to-air missiles and sonobuoys.

c. Alternative 2: Implementation of Alternative 2, the Preferred Alternative, will include all elements of Alternative 1 (accommodating training activities currently conducted, increasing training activities, and accommodating force structure changes). In addition, under Alternative 2, training activities of the types currently conducted will be increased and range enhancements will be implemented, to include new electronic combat threat simulators/targets, development of a small scale underwater training minefield, development of a Portable Undersea Tracking Range, and development of air and surface target services. Alternative 2 is the preferred alternative because it will optimize the training capability of the NWTRC and meet Navy minimum required capabilities as documented in the Navy Ranges Required Capabilities Document of September 8, 2005. Alternative 2 fully meets the alternative selection criteria and meets the purpose and need of the Proposed Action.

3. Environmentally Preferred Alternative: Regulations implementing NEPA require the identification of the environmentally-preferred alternative. The environmentally-preferred alternative for this EIS/OEIS is the No-Action Alternative, in which current training activities would continue to be conducted at present levels and frequencies. While the environmentally-preferred alternative would have less adverse environmental impact than Alternative 2, it would not accommodate an increase in training activities or implement proposed force structure changes, nor would it implement range enhancements as necessary by the Navy. The environmentally-preferred alternative, therefore, would not meet the purpose and need of the Proposed Action.

ENVIRONMENTAL IMPACTS: The Navy analyzed the impacts of the Proposed Action for the following resource areas: Geology and Soils; Air Quality; Hazardous Materials; Water Resources; Acoustic Environment (Airborne Sound); Marine Plants and Invertebrates; Fish; Sea Turtles; Marine Mammals; Birds; Terrestrial Biological Resources; Cultural Resources; Traffic; Socioeconomics; Environmental Justice, and Protection of Children; and Public Safety. The potential for environmental impacts throughout the NWTRC Study Area associated with each alternative was analyzed and documented in Chapter 3 of the Final EIS/OEIS. This Record of Decision summarizes the potential impacts associated with implementation of Alternative 2, the Preferred Alternative, under both NEPA and Executive Order 12114 by capturing whether there are significant impacts under NEPA and significant harm for areas beyond twelve nautical miles offshore under Executive Order 12114.

1. Geology and Soils: No significant impacts to geology and soils from inshore training activities in the Study Area are expected. Potential geology and soils impacts to offshore areas are addressed in the water resources section of the Final EIS/OEIS. There were no significant impacts.

2. Air Quality: Although Alternative 2 will result in increases in emissions of air pollutants above the No Action Alternative, associated emissions will not exceed air quality standards within U.S. Territory and emissions outside U.S. territorial waters will not adversely affect offshore air quality; therefore, no significant impacts or significant harm will occur.

3. Hazardous Materials: No significant impacts and no significant harm from hazardous materials from inshore or offshore training activities in the Study Area are expected.

4. Water Resources: No significant impacts or significant harm to water resources from inshore or offshore training activities in the Study Area are expected.

5. Acoustic Environment (Airborne Sound): No significant impact and no significant harm to noise receptors from surface ship noise, aircraft noise, weapon and target noise, and explosive ordnance disposal are expected.

6. Marine Plants and Invertebrates: No significant impact and no significant harm to marine plants and invertebrates from expended materials and detonations are expected.

7. Fish: No significant impact or significant harm to fish populations from aircraft overflight, weapons firing disturbance, expended materials, sonar, or non-explosive ordnance is expected. Explosive ordnance use may result in injury or mortality to individual fish but would not result in significant impact or significant harm to fish populations.

Endangered Species Act (ESA) Species: There are 8 fish species designated as threatened and one species designated as endangered under the ESA with known or potential occurrence in the NWTRC. The threatened species include: Chinook salmon *(Oncorhynchus tshawytscha),* coho salmon *(Oncorhynchus kisutch)*, chum salmon *(Oncorhynchus keta)*, steelhead trout (*Oncorhynchus mykiss)*, bull trout *(Salvelinus confluentus)*, green sturgeon *(Acipenser medirostris),* canary rockfish *(Sebastes pinniger)*, and yelloweye rockfish *(Sebastes ruberrimus)*. The bocaccio *(Sebastes paucispinus)* is an endangered species.

The only ESA designated fish species under USFWS jurisdiction is the bull trout. The USFWS biological opinion and incidental take statement (12 August 2010) concluded that the Navy's Proposed Action will have adverse affects but it is not likely to jeopardize the continued existence of the bull trout. The terms and conditions of the biological opinion are described in the mitigation section of this Record of Decision.

All other ESA designated fish species in the NWTRC are under NMFS jurisdiction. NMFS determined that the Navy's proposal to conduct activities are likely to affect but are not likely to jeopardize the continued existence of Chinook salmon, coho salmon, chum salmon, steelhead trout, green sturgeon, bocaccio, yelloweye rockfish, and canary rockfish.

Essential Fish Habitat: In the EIS/OEIS, the Navy determined there would be no adverse effects on EFH based on the limited extent, duration, and magnitude of potential impacts from

NWTRC training activities. NMFS initiated EFH consultation with the Navy, by letter dated May 20, 2010, by providing conservation recommendations based on NMFS's separate determination that the Navy's activities will adversely affect EFH. The Navy received the letter and responded in writing to NOAA. Two of the three recommendations were deemed to be impracticable. The Navy concurred with the third recommendation, agreeing to coordinate with NMFS on the placement of any underwater training minefield.

8. Sea Turtles: There are four species of sea turtles, all listed as either threatened or endangered under the ESA, that have been sighted in the NWTRC. Of those however, only the leatherback sea turtle occurs with any regularity. Presence of sea turtles in the Study Area, other than the leatherback (*Dermochelys coriacea)* is extremely unlikely due to the normal range of temperatures in the Study Area.

Activities will have temporary and spatially limited short-term impacts; therefore, there will be no significant impact or significant harm to sea turtles from the Proposed Action.

The NMFS biological opinion (June 15, 2010) concluded that the Navy's proposal to conduct activities are likely to adversely affect but are not likely to jeopardize the continued existence of the leatherback sea turtle.

9. Marine Mammals: NWTRC training activities analyzed in the Final EIS/OEIS involve the use of MFA and HFA sonar and underwater detonations. Thirty-two species of marine mammals including whales, dolphins, seals, sea lions, and the sea otter occur in the NWTRC Study Area. The Final EIS/OEIS concluded that there will be no short- or long-term impact or significant harm to marine mammals from implementing Alternative 2. The NWTRC EIS/OEIS presented 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 active sonar activities analyzed in the Final EIS/OEIS.

Mid- and High-Frequency Active 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 training activities within the action areas on marine mammals used methods that were developed in cooperation with NMFS for the Navy's 2008 Undersea Warfare Training Range Draft EIS/OEIS, 2007 Undersea Warfare Training Exercise Programmatic Environmental Assessment (EA)/Overseas EA (OEA), the 2006 Supplement to the 2002 Rim of the Pacific Exercise Programmatic EA/OEA, and the 2007 Composite Training Unit Exercise/Joint Task Force Exercise EA/OEA. The approach to estimating potential behavioral effects of active sonar use within the NWTRC 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/OEISs for the Hawaii Range

Complex, the Southern California Range Complex, and the for Atlantic Fleet Active Sonar Training.

a. 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) are the most appropriate biological indicators of physiological effects that equate to the onset of injury (Level A harassment under the Marine Mammal Protection Act [MMPA]) and non-injurious 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 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. This EL measure was used 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 received 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 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 cetaceans are 195 decibels (dB) re 1 μPa^2-s (micro Pascal squared per second) received EL for TTS and 215 dB re 1 μPa^2-s received EL for PTS. Unlike cetaceans, the TTS and PTS thresholds used for exposure modeling for pinnipeds vary by species. California sea lions, Steller sea lions, and northern fur seals have thresholds of 206 dB re 1 μPa^2-s for TTS and 226 dB re 1 μPa^2-s for PTS. Harbor seals have thresholds of 183 dB re 1 μPa^2-s for TTS and 203 dB re 1 μPa^2-s for PTS. Northern elephant seals have thresholds of 204 dB re 1 μPa^2-s for TTS and 224 dB re 1 μPa^2-s 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. 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 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. Unfortunately, this data is sparse. 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 would weaken 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," 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, this data provides the best available data for assessing the relationship between behavioral reactions and sound exposure.

b. Behavioral Effects Analysis: The Final EIS/OEIS concluded that the information (i.e., variable and context specific behavioral responses, as well as causal factors of marine mammal stranding events associated with MFA sonar) necessary 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 training and RDT&E 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 Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active (LFA) Sonar

Final OEIS/EIS and relied on in the Supplemental SURTASS LFA Sonar EIS 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 the Hawaii Range Complex Final EIS/OEIS provided the impetus for the selection of the parameters for the acoustic risk function curves. Two NMFS scientists, one from the NMFS Office of Science and Technology and one from the Office of Protected Resources, summarized the reviews of 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: 1) TTS experiments conducted at SPAWAR Systems Command (SSC) and documented in Finneran, et al., (2001, 2003, and 2005) and Finneran and Schlundt (2004); 2) reconstruction of sound fields produced by the USS SHOUP associated with the behavioral responses of killer whales observed in Haro Strait and documented by the Department of Commerce (NMFS 2005), U.S. Department of the Navy (2004), and Fromm (2004); and 3) observations of the behavioral response of North Atlantic right whales exposed to alert stimuli containing mid-frequency components documented in Nowacek et al. (2004). 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 being most sensitive to the 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 data sets detailed in the Final EIS/OEIS are the 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 the data sets detailed in the Final EIS/OEIS represent the only known data that specifically relate 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 critiques 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 critiques 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 MFA 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 NWTRC Study Area, having a lower basement value would not result in any significant number of additional takes. This is demonstrated in Table 3.5-2 of the Final EIS/OEIS which shows that less than 1 percent of the predicted number of takes resulted from exposures below 150 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 NWTRC 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 1µPa 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 1µPa 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 1µPa", 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 1µPa. 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 MFA 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. Criticism 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 C 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 MFA sonar, including MFA 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 data sets that should have been considered by NMFS and the Navy, 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 activities nor the sound exposures resulting from those activities. 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 NWTRC Study Area. In a similar manner, the example from noise used in drive fisheries is not applicable to Navy testing. Navy training 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 in 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 air guns used in seismic research or other activities associated with the oil industry are also not applicable to MFA sonar, because the sound or noise source, its frequency, source level, and manner of use is fundamentally different.

Specific Consideration for Harbor Porpoises: The information currently available regarding these inshore species that inhabit shallow and coastal waters suggests a very low threshold level of response for both captive and wild animals. Threshold levels at which both captive (e.g. Kastelein et al. 2000, 2005, 2006a) and wild harbor porpoises (*Phocoena phocoena)* (e.g. Johnston 2002) responded to sound (e.g. acoustic harassment devices), acoustic deterrent devices, or other non-pulsed sound sources is very low (e.g. ~120 dB SPL), although the biological significance of the disturbance is uncertain. Therefore, the Navy did not use the risk function curve as presented but applied a step function threshold of 120 dB SPL to estimate take of harbor porpoises (i.e., assumes that all harbor porpoises exposed to 120 dB or higher MFAS/HFAS will respond in a way NMFS considers behavioral harassment).

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 mortality of marine mammals as a result of exposure to the active sonar activities as set forth under the 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 acoustic sources that NMFS would classify as Level A harassment under the MMPA. The Final EIS/OEIS estimates 128,818 non-injurious effects annually, as a result of exposure to active sonar activities, that NMFS would classify as Level B harassment under the MMPA. The modeling also indicates 573 annual exposures that represent temporary, non-injurious physiological effects resulting from the onset of TTS. Of the 128,818 Level B exposures, 119,215 are exposures to the harbor porpoise estimated using the step function criteria described above. Exposure modeling does not take mitigation measures into account; therefore, it is possible that actual marine mammal exposures may be lower.

Effects Estimates for Underwater Detonations: Behavioral effects modeling for underwater detonations indicate 262 annual exposures for Alternative 2 that exceed the energy flux density threshold and potentially result in behavioral harassment. The modeling indicates 197 annual exposures under Alternative 2 from underwater detonations that could result in TTS (Level B Harassment). The modeling indicates 12 annual exposures under Alternative 2 to pressures from underwater detonations that could cause slight injury (Level A harassment) and one annual exposure under Alternative 2 that could cause severe injury. These exposure modeling results are estimates of marine mammal underwater detonation sound exposures without consideration of standard mitigation procedures. The implementation of the mitigation procedures presented in Chapter 5 will reduce the potential for marine mammal exposure and harassment through range clearance procedures.

Non-Acoustic Impacts: The Final EIS/OEIS assessed other potential impacts of NWTRC activities on marine mammals. The Final EIS/OEIS concluded there will be no significant impacts or significant harm to marine mammals from non-acoustic activities, e.g., vessel movement, aircraft overflight, and non-explosive ordnance. These non-acoustic impacts associated with Alternative 2 are not expected to result in Level A or Level B harassment.

ESA Species: There are nine marine mammal species listed as either endangered or threatened under the ESA with confirmed or possible occurrence in the NWTRC Study Area. These include the blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae)*, North Pacific right whale (*Eubalaena japonica*), sei whale (*Balaenoptera borealis*), sperm whale (*Physeter macrocephalus*), southern resident killer whale (*Orcinus orca)*, Steller sea lion (*Eumetopias jubatus*), and sea otter (*Enhydra lutris*). Except for the sea otter and the southern resident killer whale (which could be considered locally more common), these species are uncommon to very rare in the NWTRC Study Area. All of these species are under the jurisdiction of NMFS except for the sea otter.

NMFS determined that the North Pacific right whale is not likely to be exposed to the activities conducted under Alternative 2; therefore, after initial evaluation it was not discussed in greater detail in the biological opinion.

Based on the effects of the activities the Navy plans to conduct on the NWTRC and the cumulative effects, it is NMFS' biological opinion (15 June 2010) that the Navy's proposal to conduct activities in the NWTRC are likely to adversely affect but are not likely to jeopardize the continued existence of these threatened and endangered species under NMFS jurisdiction.

The USFWS determined that Alternative 2 may affect but is not likely to adversely affect the sea otter (specifically the listed southern sea otter).

10. Birds: The NWTRC encompasses important foraging and breeding habitats for birds. Migratory birds utilize the productive offshore waters associated with the Pacific coast upwelling to forage during wintering and migratory movements. Coastal development, loss of habitat, commercial fishing, and introduced invasive species, has caused the population of many seabird species to decline in recent decades. Navy activities in the NWTRC are not expected to increase current effects on bird populations. Based on the analysis of the proposed alternatives, it is concluded that effects to protected and migratory birds will be minimal. The size of the Range Complex, as well as the temporal and spatial variability of activities, in combination with temporal and seasonal distributions of seabird species poses minimal effect potential to seabird populations. Therefore no significant impact and no significant harm to birds are expected from Navy activities.

ESA Species: As part of the EIS/OEIS process, the Navy prepared a biological evaluation for the NWTRC for use, as appropriate, in agency consultations. The ESA-listed birds analyzed in the EIS/OEIS are the short-tailed albatross (*Phoebastria albatrus*), northern spotted owl (*Strix*

occidentalis caurina), marbled murrelet (*Brachyramphus marmoratum*), California brown pelicans (*Pelecanus occidentalis californicus*), and the western snowy plover (*Charadrius alexandrinus nivosus*). Shortly after the Navy initiated formal consultations, the California brown pelican was removed from the list of threatened or endangered species. Accordingly, the consultation made no conclusions regarding this species. The USFWS biological opinion (12 August 2010) concluded that Alternative 2 may affect but is not likely to adversely affect the short-tailed albatross, northern spotted owl, or western snowy plover. The USFWS biological opinion and incidental take statement (12 August 2010) concluded that the Navy's Proposed Action will have adverse affects but it is not likely to jeopardize the continued existence of the marbled murrelet. The terms and conditions of the biological opinion are described in the mitigation section of this Record of Decision.

Under Alternative 2, NWTRC activities will not destroy or adversely modify critical habitat for the marbled murrelet or the western snowy plover.

Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act: Implementation of Alternative 2 will not adversely affect the bald eagle as defined by the Bald and Golden Eagle Protection Act, or Migratory Bird Treaty Act (MBTA) regulations applicable to military readiness activities. Alternative 2 will have no significant impact on the bald eagle or migratory birds on land or in territorial waters. Harm to bald eagles from Alternative 2 will be unlikely in non-territorial waters. Alternative 2 is not expected to disturb, or result in take of bald eagles as defined by the Bald and Golden Eagle Protection Act.

11. Terrestrial Biological Resources: Terrestrial areas within the NWTRC that may be affected by activities include the eastern portion of the NAS Whidbey Island Seaplane Base, Indian Island, Naval Outlying Landing Field (OLF) Coupeville, Naval Base Kitsap-Bangor, and the land areas underlying the special use airspace over central and eastern Washington. Activities within these areas may affect resources that occur on land and in near shore areas. Activities under Alternative 2 that may affect the terrestrial resources are those that are most likely to result in land disturbance, such as aircraft overflight, detonations, personnel training, and materials expended during training. There will be minor, short-term, and localized disturbance to terrestrial vegetation and wildlife from foot traffic, light vehicular use, aircraft overflight, and ordnance and pyrotechnics under Alternative 2; however, there will be no long-term population-level effects. Wetlands will not be affected under Alternative 2. There will be temporary displacement and minor disturbance of terrestrial wildlife in the areas adjacent to the two land-based Demolition Training Ranges (DTRs) in the NWTRC. Wildlife would exhibit short-term physiological response but would return to normal behaviors shortly after disturbance; therefore, no long-term population level effects are expected. Vegetation and wetlands will not be affected by EOD actions in established DTRs.

Alternative 2 will have no significant impact on terrestrial vegetation, wetlands, and wildlife.

ESA Species: The Navy consulted under Section 7 of the ESA on four terrestrial species with the potential to occur within the NWTRC's military operation areas (MOAs) – the Canada lynx (*Lynx Canadensis*), grizzly bear (*Ursus arctos horribilus*), gray wolf (*Canis lupis*), and woodland caribou (*Rangifer tarandus caribou*). The USFWS concluded in their biological opinion (12 August 2010) that Alternative 2 may affect but is not likely to adversely affect grizzly bears, Canada lynx, gray wolf, or woodland caribou.

12. Cultural Resources: In the Final EIS/OEIS, cultural resources are divided into three groups: archaeological resources (both historic and prehistoric), architectural resources, and traditional cultural resources.

Because of the continued use of protective measures currently in place, such as identification of cultural sites, shipwrecks, and submerged resource locations prior to exercises, and avoidance of known cultural sites, EOD training and detonations from bombing, missiles, and gunnery exercises will have few if any direct adverse effects on shipwrecks or other archaeological resources. Land-based training and near shore activities will increase and could disturb archaeological resources, but effects will be minor due to the small number of activities or covert nature of the activities that limit the amount of disturbance. A slight increase in land-based EOD training will have minimal impact on historic sites or archaeological resources due to the confined nature of the detonations and the distance of activities from historic sites. There will be a substantial decrease in underwater EOD activities which will reduce the potential for impacts to archaeological resources and historic sites. There will be few, if any, effects to shipwrecks or other archaeological resources from a slight increase in detonations at sea from bombing, missile, and gunnery exercises with implementation of mitigation measures. Small quantities of expended materials that sink to the ocean bottom will not affect the historic properties of the shipwreck, and eventually all such expended materials will be covered by sediments. Alternative 2 will have a negligible to minor adverse effect ("no adverse effect" under Section 106), and negligible effects to historic structures.

Under Alternative 2, two of the range enhancements, Portable Undersea Tracking Range and the underwater training minefield, have the potential to cause a negative impact to usual and accustomed fishing by Native American tribes.

Through consultation and coordination, the Navy will ensure that effects on traditional cultural practices, archaeological and ethnographic sites, as well as resources valued by tribes will change very little from those described for the No Action Alternative.

13. Traffic: There will be no significant impact to transportation and circulation from ground or vessel transportation.

14. Socioeconomics: There will be no significant impact to socioeconomics from the Proposed Action. The Navy considered impacts to all economic concerns along the Pacific coast, and specifically to commercial and recreational fishing. Regarding access to fishing grounds, it is

important to note that there are no restricted areas in the NWTRC. Normal right of way for fishing boats and all other vessels is honored throughout the range complex. In fact, to facilitate safety and to prevent interference during the conduct of their activities, Navy ships and aircraft intentionally seek areas clear of all other vessel traffic for conducting their training.

The Navy also considered impacts to fisheries from its proposed activities. Section 3.7.2 of the Final EIS/OEIS provides detailed analysis of the potential of impacts from vessel movement, aircraft overflights, underwater detonations and explosive ordnance, active sonar, non-explosive ordnance use, weapons firing disturbance, and expended materials. After a thorough review of the latest relevant science, the Navy concluded that its proposed activities would have little impact on fish, and in no case would have community or population level effects.

15. Environmental Justice and Protection of Children: There will be no disproportionately high and adverse human health or environmental effects of Alternative 2 on minority populations, low-income populations, or Indian tribes. There will be no disproportionate environmental health and safety risks specific to children expected under Alternative 2.

16. Public Safety: There will be no significant impact to public safety from the Proposed Action.

MITIGATION AND PROTECTIVE MEASURES: The Navy will continue to implement all current mitigation and protective measures identified in the Final EIS/OEIS. In addition to identification of current mitigation and protective measures, the EIS/OEIS also identifies, in compliance with 40 CFR 1502.14 (h), further measures not currently being undertaken that would mitigate environmental impacts to a given resource. The following new mitigation and protective measures will be adopted as part of the Navy's decision to move forward with the Proposed Action.

Fish Mitigation and Protective Measures: The USFWS, in its biological opinion, stated that it would be reasonable and prudent for the Navy to design and conduct monitoring for the bull trout (*Salvelinus confluentus*) to ensure that the amount or extent of incidental take is not exceeded. To implement the reasonable and prudent measures, the USFWS issued the following terms and conditions: 1) prior to conducting any EOD training and in cooperation with the USFWS, design a post-detonation fish monitoring plan to be implemented after each EOD detonation in Crescent Harbor; 2) within 30 days after each detonation, the Navy shall submit a report to the USFWS detailing the results of the monitoring; and 3) any bull trout recovered after the detonation will be immediately frozen and submitted to the USFWS or directly to an agreed upon laboratory for necropsy. The cost of the necropsy will be borne by the Navy, and results will be provided as soon as possible to the USFWS.

Marine Mammal and Sea Turtle Mitigation and Protective Measures: Mitigation measures and monitoring and reporting for marine mammals were specified in NMFS Final Rule (October 25, 2010) in order to obtain a Letter of Authorization for the proposed activities in the NWTRC.

The Navy will comply with these requirements. The Final Rule under the Marine Mammal Protection Act does not address sea turtles; however, many of the measures created for marine mammals will also benefit sea turtles.

Numerous existing mitigation measures are described in the EIS/OEIS. As stated above, these mitigation measures will be adopted as part of this Record of Decision. The current mitigation measures for marine mammals and sea turtles include: personnel training (watchstanders and look outs); operating procedures; collision avoidance; measures for specific training events including MFA sonar activities, surface-to-surface gunnery, surface-to-air gunnery, air-to-surface gunnery, air-to-surface at-sea bombing exercises, air-to-surface missile exercises, sinking exercise, explosive source sonobuoys; Integrated Comprehensive Monitoring Program; adaptive management; research; NWTRC Marine Species Monitoring Plan; and coordination with and reporting to NMFS.

Bird Mitigation and Protective Measures: In its biological opinion, the USFWS stated that it would be reasonable and prudent for the Navy to design and conduct monitoring for the marbled murrelet to ensure that the amount or extent of incidental take is not exceeded. To implement the reasonable and prudent measures, the USFWS issued the following terms and conditions: 1) prior to conducting any EOD training, the Navy shall design a monitoring plan in cooperation with the USFWS and 2), within 30 days after each detonation, the Navy shall submit a report to the USFWS detailing the results of the monitoring.

AGENCY CONSULTATION AND COORDINATION: The Navy consulted with the Washington Department of Archaeology and Historic Preservation, NMFS, USFWS, Washington Department of Ecology, Oregon Department of Land Conservation and Development, and the California Coastal Commission in conjunction with actions addressed in the NWTRC EIS/OEIS. A summary of the results from each consultation and coordination process is included below:

National Historic Preservation Act: The Navy submitted a request for concurrence with its determination of "No Adverse Effect" under the Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470f), and its implementing regulation, 36 CFR 800, to the Washington Department of Archaeology and Historic Preservation on October 29, 2009. The Navy received concurrence with their determination of "No Adverse Effect" on November 5, 2009.

Marine Mammal Protection Act: In support of the Proposed Action, in October 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 March 11, 2009 (74 FR 10557). 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 Letter of Authorization and published a Proposed Rule in the Federal Register on

July 13, 2009 (74 FR 32828). Publication of the Proposed Rule initiated another 30-day public comment period, which ended on August 12, 2009. The Final Rule was issued by NMFS on October 25, 2010. The Final Rule is effective on the date it is published in the Federal Register.

Endangered Species Act: There were previously two existing biological opinions, one from NMFS and one from USFWS, which covered limited activities (underwater detonations) within the NWTRC. These two biological opinions have been superseded by new biological opinions based on the information provided in the Biological Evaluation that the Navy completed which included all activities in the NWTRC. A summary of the consultation history and outcome of the consultations are provided below.

NMFS: The Navy requested early consultation with NMFS, in accordance with Section 7(a)(3) of the ESA, on April 21, 2008. The Navy subsequently submitted a biological evaluation and requested formal consultation with NMFS in accordance with Section 7(a)(2) of the ESA, by letter addressed to NMFS dated November 14, 2008. NMFS issued a Programmatic Biological Opinion on the NWTRC, dated June 15, 2010, which concludes that the Navy's proposal to conduct activities in the NWTRC are likely to affect but are not likely to jeopardize the continued existence of the threatened and endangered species under NMFS jurisdiction, and are not likely to result in the destruction or adverse modification of critical habitat that has been designated for those species. The Programmatic Biological Opinion also analyzed activities proposed for the NAVSEA NUWC Keyport Range Complex, for which Navy has completed its own EIS and ROD.

The Navy consulted on 21 federally-listed species known to occur within the NWTRC. The species that were consulted on include blue whale; fin whale; humpback whale; sei whale; southern resident killer whale; sperm whale; Steller sea lion (eastern population)*;* leatherback sea turtles, green sturgeon, Chinook salmon, including Puget Sound Chinook salmon, lower Columbia river Chinook salmon, and California coastal Chinook salmon; chum salmon*,* including Columbia river chum salmon and Hood Canal chum salmon; coho salmon, including central California coast coho salmon, coho Southern Oregon-Northern Coastal California salmon, and lower Columbia River coho salmon; steelhead, including lower Columbia River steelhead, northern California steelhead, central California coastal steelhead, and Puget Sound steelhead.

An annual biological opinion is required to support the letter of authorization permit under the MMPA. The Navy received a draft annual biological opinion from NMFS on October 12, 2010. In this draft biological opinion NMFS changed its conclusions for the bocaccio, yelloweye rockfish, and canary rockfish from the previous conclusion of "not likely to be exposed" in the Final Programmatic Biological Opinion (15 June 2010) to a conclusion of "likely to adversely affect but not likely to jeopardize the continued existence" of the species. The Navy will comply with any forthcoming terms and conditions.

USFWS: The Navy submitted a request for formal consultation with the USFWS in accordance with Section 7 of the ESA, by letter addressed to the USFWS, dated December 19, 2008. The Navy received notification from the USFWS, by letter dated February 19, 2009, that the Navy's BE was insufficient to initiate formal consultation. Between February 2009, and November 2009, USFWS and Navy staff attended meetings and exchanged electronic mail (email) and telephone calls to develop information sufficient to initiate formal consultation. Formal consultation was then initiated by the USFWS with official correspondence to the Navy, dated November 18, 2009.

The Navy consulted on 12 federally-listed resources known to occur within the NWTRC: 11 species and one critical habitat, including short-tailed albatross, California brown pelican, western snowy plover , sea otter, marbled murrelet, bull trout, bull trout critical habitat, northern spotted owl, Canada Lynx, grizzly bear, gray wolf, and woodland caribou. The California brown pelican was removed from the list of Threatened and Endangered Wildlife on December 17, 2009.

On August 12, 2010, the USFWS issued a Final Biological Opinion. The Biological Opinion concluded that the Proposed Action may affect, but is not likely to adversely affect short-tailed albatross, western snowy plover, sea otter, bull trout or its critical habitat, northern spotted owl, Canada Lynx, grizzly bear, gray wolf, or woodland caribou. The USFWS also concluded that the Navy's activities are likely to adversely affect but not likely to jeopardize the continued existence of bull trout or marbled murrelet for the 5 years proposed, beginning in 2010.

The USFWS issued an incidental take statement for bull trout and marbled murrelets. They anticipate ten adult or sub adult bull trout could be taken as a result of the Alternative 2. The incidental take is expected to be in the form of harm leading to mortality due to EOD training activities at Crescent Harbor. The level of incidental take for murrelets is difficult to quantify because the area of potential take is too large to monitor; any incidental take will be limited to those murrelets foraging under water at the time of a given detonation, making detection difficult; and not all individuals under water at the time of a detonation will be harmed in the same manner due to the high variability in received sound pressure levels. Recognizing the difficulty in quantifying murrelet take, the USFWS used the ensonified area as a tools for estimation purposes and concluded that they expect all murrelets that are underwater within approximately 96 km^2 of the EOD range at Crescent Harbor and 60 km^2 of the EOD range at Floral Point will be harmed by exposure to blast overpressure waves of less than 41 pa Sec and more than 180 dB peak. This incidental take is expected to occur during each EOD training exercise for up to a maximum of 20 EOD exercises (a maximum of 4 EOD exercises each year) involving underwater detonations, ending 5 years after the signature date for the Record of Decision implementing the action. The USFWS anticipates that take will occur in the form of harm.

Magnuson-Stevens Fishery Conservation and Management Act: As is described above, the Navy engaged in EFH consultation with NMFS pursuant to their letter dated May 20, 2010. In that letter, NMFS provided the Navy with conservation recommendations based on NMFS's separate determination that the Navy's activities will adversely affect EFH. The Navy received the letter on June 11, 2010, initiating the required 30-day response period. Per section 305(b)(4)(B) of the Magnuson-Steven Fishery Conservation and Management Act, the Navy responded in writing to NOAA.

Coastal Zone Management Act: In accordance with the Coastal Zone Management Act (CZMA), the Navy reviewed the enforceable policies of the California, Oregon, and Washington Coastal Zone Management Plan. Pursuant to 15 CFR Part 930, Subpart C, the Navy prepared a consistency review under each state's coastal zone management program enforceable policies.

A Consistency Determination was submitted to the Washington Department of Ecology on October 19, 2009. The Navy determined that the Proposed Action is consistent to the maximum extent practicable with the enforceable policies of the Washington Coastal Management Program, pursuant to the requirements of CZMA. In a letter dated December 14, 2009, the Washington Department of Ecology concurred with the Navy's Consistency Determination that the Proposed Action is consistent to the maximum extent practicable with the enforceable policies of Washington's Coastal Zone Management Program and will not result in any significant impacts to the State's coastal resources.

A Negative Determination was submitted to the Oregon Department of Land Conservation and Development on October 29, 2009. Pursuant to Section 307 (c)(1) of the federal CZMA, the Navy determined that the Proposed Action will have no reasonably foreseeable effects to Oregon's coastal uses or resources. In a letter dated November 3, 2009, the Oregon Department of Land Conservation and Development concurred with the Navy's Negative Determination.

A Negative Determination was submitted to the California Coastal Commission on October 29, 2009. Pursuant to Section 307 (c)(1) of the federal CZMA, the Navy determined that the Proposed Action will have no reasonably foreseeable effects to California's coastal uses or resources. In a letter dated December 22, 2009, the California Coastal Commission agreed with the Navy's Negative Determination.

National Marine Sanctuaries Act: The Olympic Coast National Marine Sanctuary (OCNMS) expressed concern that Navy activities (in particular, military expended materials) could harm Sanctuary resources, and that formal consultation under the National Marine Sanctuaries Act (NMSA) was thus required. There are no new activities proposed in this Action which will be undertaken within OCNMS, nor are there any activities likely to "destroy, cause the loss of, or injure" OCNMS resources. As a result, consultation is not required under the NMSA. The Navy and OCNMS have agreed to continue ongoing discussions regarding Navy activities in and around OCNMS, including certain Reasonable and Prudent Alternatives (RPAs) contained in a letter from OCNMS to Navy on October 22, 2010.

RESPONSES TO COMMENTS ON THE FINAL EIS/OEIS: The Notice of Availability of the NWTRC Final EIS/OEIS was published in the *Federal Register* on September 10, 2010 (75 FR 55326), in 13 newspapers, and on the NWTRC EIS/OEIS website. Release of the NWTRC 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. During the Final EIS/OEIS 30-day wait period, a total of 132 comments were received from federal and state agencies, elected officials, nongovernmental organizations, and individuals. The majority of comments can be characterized as falling into four main categories, all of which were previously addressed in the Final EIS/OEIS or in this ROD:

1. Misunderstanding of the Proposed Action/geographic scope of project;
2. Requests for seasonal and geographic exclusionary zones/excluding training from biologically sensitive areas;
3. Concerns about military expended materials; and
4. Concerns about commercial and recreational fishing.

These issues were previously raised in earlier comments on the Draft EIS/OEIS and were addressed in the Final EIS/OEIS. They are summarized below.

Comments on the Proposed Action/geographic scope: Several comments stated concerns about the Navy "increasing training in the Northwest," "expansion of the Northwest Training Range Complex," and "testing of weapons."

First, concerning the level of training in the NWTRC, while the Proposed Action includes potential increases in the number of certain individual training activities while aircraft are airborne and ships are at sea, it does not necessarily correspond to an increase in either aircraft flights or flight hours, or at-sea time for the ships. In short, the level of activities in the NWTRC will remain generally consistent with the levels over the past several years. For the residents of coastal Oregon and Northern California that voiced a concern, the anticipated levels of training will remain low in those waters, less than 10% of the total at-sea activities. In addition, the activities off the coast of Oregon and Northern California would occur well out to sea, greater than 12 nautical miles from the coast for air activities and approximately 50 nautical miles for vessel transits.

Regarding the concerns over the geographic expansion of the NWTRC, the Navy's Proposed Action as described in Chapters 1 and 2 of the Draft and Final EIS/OEIS, does not include expanding the geographic boundaries of the range complex. Training will continue in the same areas used since World War II.

Comments on geographic/seasonal training restrictions: Several comments requested that the Navy restrict training during certain times of the year or exclude certain areas from all training and testing activities. This issue was fully explained in Chapter 5 of the Final EIS/OEIS in the

discussion on "Seasonal and/or Geographic Limitations." The Navy does not conduct sinking or bombing exercises in the Olympic Coast National Marine Sanctuary. As stated in the Final EIS/OEIS, "if marine mammals are only known to prefer certain types of areas (as opposed to specific areas) for certain functions (such as beaked whales use of seamounts or marine mammal use of productive areas like fronts), which means that they may or may not be present at any specific time, it may be less effective to require avoidance or limited use of that type of area all of the time." Instead of restricting entire areas from training, the Navy avoids marine mammals when they are detected regardless of their location. In the Inshore Area of the NWTRC, where the Southern Resident killer whale critical habitat is located, the Navy has no plans to conduct sonar training, and only very minimal underwater explosive training (4 events annually). As a protective measure for the underwater explosive training, the Navy conducts area surveys by boat prior to training and only proceeds if the area is clear of marine mammals and sea birds. Additionally, the Navy has reduced explosive charge sizes for all underwater explosive training events and relocated the training proposed off of Naval Magazine Indian Island, where there is a higher potential occurrence of killer whales, other marine mammals, sea birds and protected fish species.

Finally, the concept of geographic and seasonal (or temporal) limitations is inconsistent with the Title 10 responsibilities of Department of Defense to assure a fully trained and ready military force. The training area locations utilized in the NWTRC were very carefully chosen by planners based on training requirements and the ability of ships, aircraft, and submarines to operate safely.

Comments on military expended materials: Some of the comments received expressed a concern for military expended materials that remain in the ocean following their use in training. Specific concern was voiced for the chemicals and chemical byproducts that may result.

Both the Draft and Final EIS/OEIS thoroughly analyzed the impacts of expended materials used during Navy training activities. Section 3.3 of the EIS/OEIS describes the impacts from the perspective of potentially hazardous materials such as explosives constituents. Section 3.4 describes the impacts of expended materials in terms of water and sediment quality. Potentially hazardous materials including heavy metals, chemicals, and explosives were analyzed in Section 3.3.1.1. This analysis included the fate and transport of these materials, bioavailability, trophic transfer, and bioaccumulation. Due in part to the existing properties of seawater and the rate at which these expended materials decompose, the best available science supports the conclusion that the Navy's use of military expended materials will have no significant impact to the environment.

In addition the Navy has also implemented hazardous materials management programs to ensure compliance and to provide guidance on handling and disposing of hazardous materials. Navy instructions include stringent discharge, storage, and pollution prevention measures and require facility managers to reduce, to the extent possible, quantities of toxic substances released into the environment. All Navy vessels and facilities have comprehensive programs in place that

implement responsible stewardship, hazardous materials management and minimization, pollution prevention, recycling, and spill prevention and response. Also, National Marine Sanctuaries (which includes the Olympic Coast National Marine Sanctuary) are Prohibited Discharge Zones for U.S. Navy shipboard wastes.

Other Comments: It should be noted that the U.S. Environmental Protection Agency commented positively on the Navy's responsiveness to their comments on the Draft EIS/OEIS.

Although the Final EIS/OEIS wait period ended on October 12, 2010, the Navy continued to accept additional comments received through October 24, 2010. A total of 48 comments were received during this additional period from elected officials, nongovernmental organizations, and individuals. Most of these comments raised issues previously submitted and addressed in the Final EIS/OEIS or in this ROD. Representative Thompson (D-1-CA) submitted comments that are addressed below.

Comment: Navy should consider avoiding or even limiting activities in specific areas to reduce impacts on marine mammals or other species or habitats.

Response: NOAA was a cooperating agency on the EIS/OEIS. Navy engaged in consultations with NOAA under the MMPA and ESA to ensure Navy activities reduce impacts on marine mammals and other species. Authorizations under both of these laws contain mitigation, monitoring, and reporting requirements which are designed to protect marine mammals and other species. MMPA and ESA authorizations are subject to annual reviews, at which time NMFS may modify or augment the existing mitigation or monitoring measures (after consulting with the Navy regarding the practicability of the modifications).

Comment: Navy should create an inventory of NWTRC training and testing activities, listing any requirements that pose geographic constraints (ocean space, bathymetry, etc.) and modify the EIS/OEIS and its alternatives analysis to avoid or restrict activities within sensitive habitats identified by NOAA's working group on marine mammal hotspots. Navy should commit to producing a Supplemental EIS that incorporates these alternatives.

Response: As noted in the previous comment response, Navy consulted with NOAA with regard to potential impacts to marine mammals. We note that MMPA authorizations are subject to yearly review and are therefore sufficiently flexible to incorporate any new scientific information developed by NOAA's working group. Therefore, Navy does not believe that a Supplemental EIS is warranted at this time. As stated in the Final EIS, the NWTRC is a unique national range asset that derives its primary value from its diverse and extensive training capabilities and its location close to the Fleet concentration area in the Puget Sound. There are over twenty-three military shore commands, twenty-one aviation squadrons, and twenty-one ships based around the Puget Sound that depend on the NWTRC and associated offshore areas to meet basic and intermediate training requirements in order to achieve readiness prior to deployment. The NWTRC is the only Northwestern United States Range Complex capable of supporting Navy readiness training for these commands, squadrons and ships without requiring that they be removed from their homeports for substantial periods of time to achieve and maintain readiness levels. Regarding current proposals for geographic constraints, NOAA specifically addressed

such proposals in its MMPA Rulemaking, concluding that: ". . . the impracticability of designating . . . additional . . . protective areas identified by . . . commentors outweighs the likely benefits;" and that ". . . we cannot definitively predict that avoiding these areas would necessarily result in a decrease in takes." Marine mammals and other sea creatures are mobile resources which do not abide by geographic designations. Arbitrarily avoiding certain areas and re-concentrating activities elsewhere is not only an ineffective means of mitigating, but one which is, potentially, more harmful to the very creatures such measures would be designed to protect. In the face of such uncertainties, the best and most effective means of mitigation are the extensive suite of measures required by NOAA wherever and whenever the Navy trains. These carefully crafted measures provide maximum protection to sea life, without unnecessarily hampering the Navy's ability to realistically train in areas with varying bathymmetry, sea-states, and geography. In an unpredictable and volatile world where there is no way to accurately predict the source or location of future threats to national security, the Navy must retain the ability and flexibility to train under the same conditions which its crews will face when sent into harm's way.

Comment: Navy should report to NOAA general information about the time and location of exercises conducted in the NWTRC.

Response: Per the MMPA Final Rule (October 25, 2010), the Navy is required to submit an Annual Report every year. That report will contain, among other things, the location, time and date of permitted exercises.

CONCLUSION: Alternative 2, the Navy's Preferred Alternative, will fully meet the purpose of and need for the Proposed Action as this alternative will accommodate training activities currently conducted, increasing training activities, and force structure changes, as well as provide for range enhancements. Under Alternative 2, mitigation and management measures will also be implemented to protect the environment.

There will be no significant adverse environmental impacts or significant harm associated with implementing the Alternative 2. Implementation of mitigation measures and adherence to management plans and monitoring requirements developed in conjunction with Alternative 2 during consultations with NMFS and USFWS will minimize the potential for impacts to environmental resources in the NWTRC EIS/OEIS 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.

Based on the environmental impacts 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, I select Alternative 2 to implement the Proposed Action.

10/25/10
Date

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