

ES 1 EXECUTIVE SUMMARY

ES 1.1 INTRODUCTION

This Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) analyzes the potential environmental impacts to the human environment that may result from the United States (U.S.) Navy's Proposed Action and Alternatives, which address ongoing and proposed naval activities within most of the Navy's existing Northwest Training Range Complex (NWTRC). The proposed naval activities would continue for an indefinite period of time but this EIS/OEIS will be reviewed every five years for substantive changes and permits updated/renewed from regulatory agencies as necessary.

This Final EIS/OEIS (hereafter referred to as "EIS/OEIS") has been prepared by the Department of the Navy in compliance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] § 4321 et seq.); the Counsel on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (Title 40 Code of Federal Regulations [CFR] §§ 1500-1508); Department of the Navy Procedures for Implementing NEPA (32 CFR § 775); and Executive Order (EO) 12114 *Environmental Effects Abroad of Major Federal Actions* (44 Fed. Reg. 1957, Jan 4, 1979). This EIS/OEIS satisfies the requirements of NEPA and EO 12114, and will be filed with the U.S. Environmental Protection Agency (USEPA) and made available to appropriate Federal, State, local, and private agencies, organizations, and individuals for review and comment.

The Navy is the lead agency for the EIS/OEIS, pursuant to 40 CFR § 1508.16; the National Marine Fisheries Service (NMFS) is a cooperating agency, pursuant to 40 C.F.R. Section 1508.5.

The NWTRC consists of two primary components: the Offshore Area and the Inshore Area. The NWTRC includes ranges, operating areas (OPAREAs), and airspace that extend west to 250 nautical miles (nm) (463 kilometers [km]) beyond the coasts of Washington, Oregon, and Northern California; and east into Idaho. The components of the NWTRC encompass 122,440 square nautical miles (nm²) (420,163 square kilometers [km²]) of surface/subsurface ocean OPAREAs, 46,048 nm² (157,928 km²) of special use airspace¹ (SUA), 367 nm² (1,258 km²) of Restricted Airspace and 875 acres (354 hectares) of land.

The Offshore Area of the Range Complex includes surface and subsurface operating areas extending generally west from the coastline of Northern California, Oregon, and Washington for a distance of approximately 250 nm (463 km) into international waters (Figure ES-1).

The Inshore Area includes all air, land, sea, and undersea ranges and OPAREAs inland of the coastline and including Puget Sound. None of the Inshore Area extends into Oregon or California. There are several areas within 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 are not proposed in this EIS/OEIS. These Inshore Areas are depicted on Figures ES-1 and ES-2.

For range management and scheduling purposes, the NWTRC is divided into numerous sub-component ranges or training areas used to conduct training and Research, Development, Test, and Evaluation (RDT&E) activities (Unmanned Aerial Systems [UASs] only), as described in detail in Chapter 2 of this EIS/OEIS. Figures ES-1 and ES-2 depict the training areas to be analyzed in this EIS/OEIS.

¹ Special use Airspace (SUA) is airspace of defined dimensions wherein activities, such as military aircraft activities, must be confined because of their nature. Restrictions or limitations are typically imposed on non-participants. SUA includes restricted areas, alert areas, military operating areas (MOAs), and over-water warning areas.

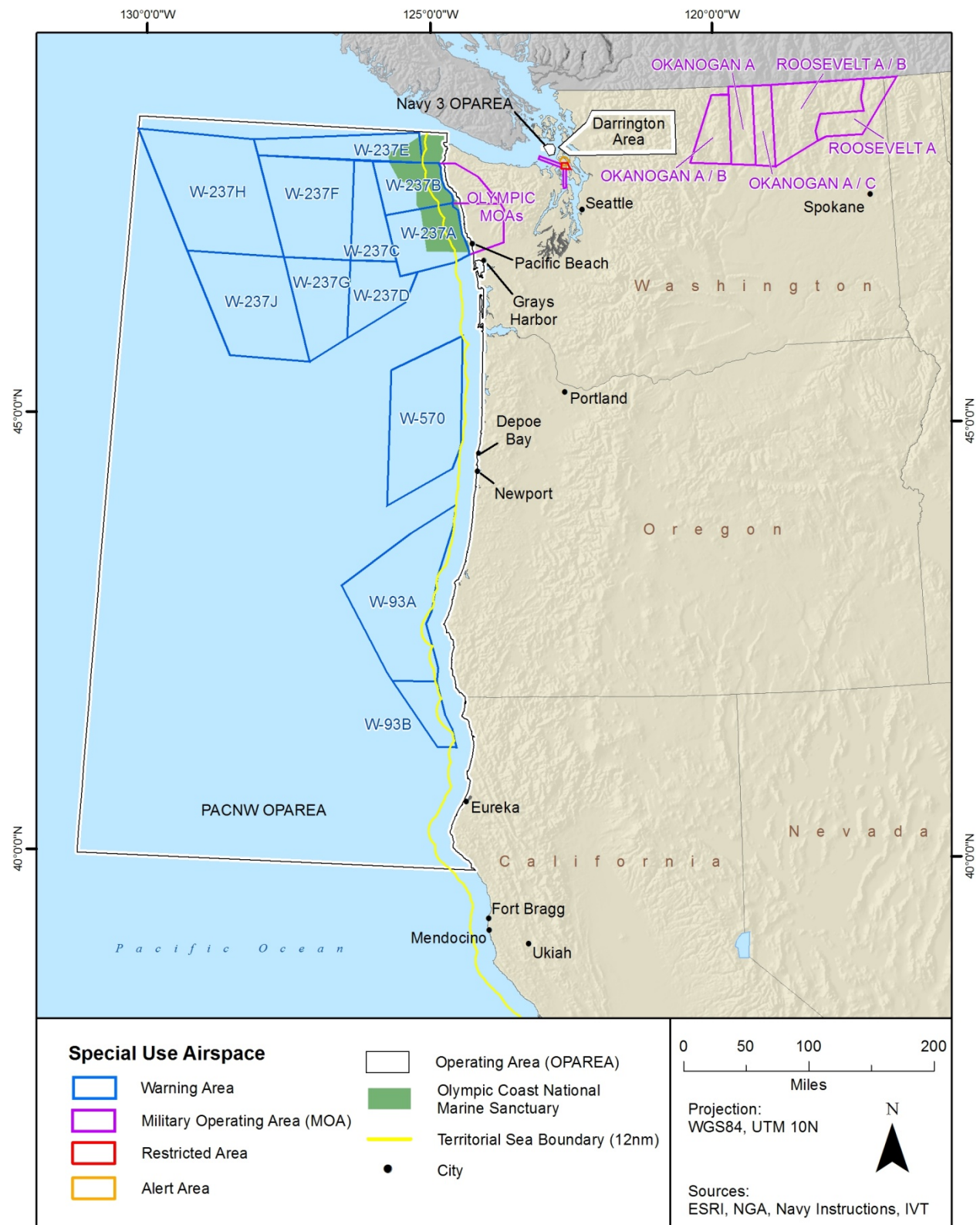


Figure ES-1: NWTRC EIS/OEIS Study Area

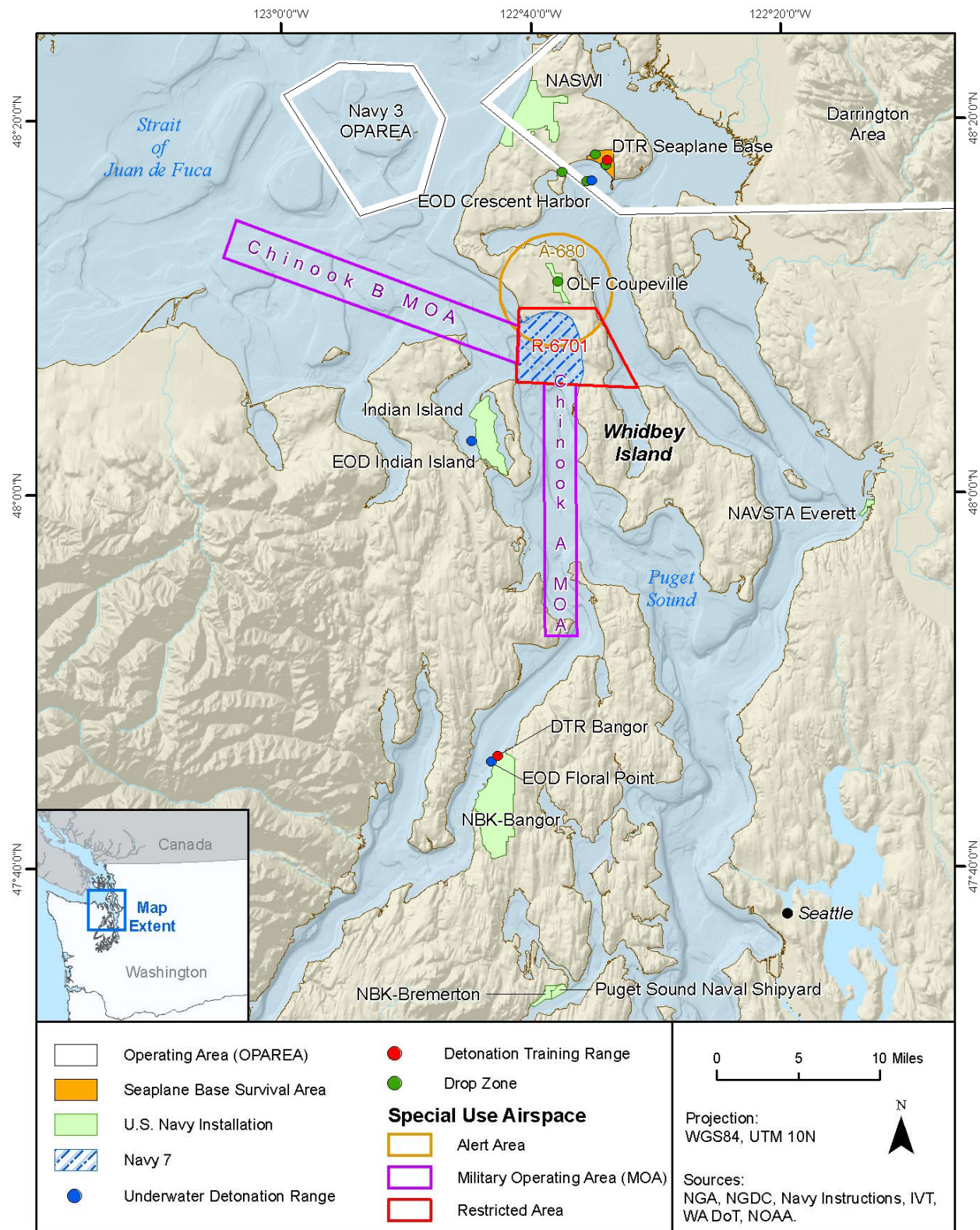


Figure ES-2: Puget Sound Training Areas of the NWTRC

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. Code [U.S.C.] § 5062), which charges the Chief of Naval Operations (CNO) with responsibility for ensuring the readiness of the Nation's naval forces.² The CNO meets that directive, in part, by establishing and executing training programs, including at-sea training and exercises, including mid-frequency active (MFA) sonar activities, and ensuring naval forces have access to the ranges, OPAREAs, 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 NWTRC plays a vital part in the execution of this naval readiness mandate. The NWTRC serves as the principle "backyard" training 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 (NBK) Bremerton, and NBK-Bangor, formerly known as Submarine Base (SUBASE) Bangor. Additionally, the NWTRC supports other non-resident Navy users and their training requirements to include Naval Special Warfare (NSW) units. The Navy's Proposed Action is a step toward ensuring the continued vitality of this essential naval training resource.

ES 1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The NWTRC provides a unique training environment for naval forces (see Section 1.2.3³ for a detailed discussion of the strategic importance of the NWTRC). Nevertheless, shortfalls exist in the Range Complex that affect the quality of training (see Section 1.3.3). 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 (Unmanned Aerial Systems [UASs] only);
- Expanding warfare missions supported by the NWTRC, consistent with the requirements of the Fleet Response Training Plan (FRTTP), described in Section 1.2.1; and
- Upgrading and modernizing existing range capabilities to address shortfalls and deficiencies in current training areas and operating areas.

The Proposed Action is needed to provide a training environment consisting of ranges, training areas, and range instrumentation with the capacity and capabilities to fully support required training tasks for operational units and military schools such as the Electronic Attack Weapons School, located at NAS Whidbey Island. The Navy has developed alternatives criteria based on this statement of the purpose and need for the Proposed Action (see Section 2.3.1).

The NWTRC supports and promotes the Navy's execution of its roles and responsibilities under Title 10 (Title 10 U.S. Code [USC] § 5062). To comply with its Title 10 mandate, the Navy needs to:

- Maintain current levels of military readiness by training in the NWTRC;

² Title 10, Section 5062 of the United States Code provides: "The Navy shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations at sea. It is responsible for the preparation of Naval forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with Integrated Joint Mobilization Plans, for the expansion of the peacetime components of the Navy to meet the needs of war."

³ In this Executive Summary, cross-references are to sections of the EIS/OEIS.

- Accommodate future increases in operational training tempo in the NWTRC and support the rapid deployment of individual naval units or Strike Groups;
- Achieve and sustain readiness of ships, submarines, aviation squadrons, and other units using the NWTRC so that the Navy can quickly surge significant combat ready forces in the event of a national crisis or contingency operation, consistent with the F RTP;
- Support the acquisition and implementation into the Fleet of advanced military technology using the NWTRC to conduct training events for new platforms and associated weapons systems (EA-18G Growler aircraft, Guided Missile Submarines [SSGN], P-8 Multimission Maritime Aircraft [MMA]), and RDT&E for several types of UASs;
- Identify shortfalls in range capabilities, particularly training infrastructure and instrumentation, and address corrective options through range enhancements; and
- Maintain the long-term viability of the NWTRC as a premiere Navy training and testing area while protecting human health and the environment, and enhancing the quality, capabilities, and safety of the Range Complex.

ES 1.3 SCOPE AND CONTENT OF THE EIS/OEIS

The Navy includes areas of the NWTRC that lie within 12 nm (22 km), or the territorial seas, in its analysis under NEPA [Proclamation No. 5928 of December 27, 1988, 54 Fed. Reg. 777, titled ‘Territorial Sea of the United States’]. Environmental effects in the areas outside of U.S. territorial seas are analyzed under EO 12114 and associated implementing directives. The basis for extending the coverage of EO 12114 inside of 12 nm (22 km) is described in Section 1.5 of this EIS/OEIS. The Navy is the lead agency for the EIS/OEIS; NMFS is a cooperating agency, pursuant to 40 C.F.R. Section 1508.5.

This EIS/OEIS provides an assessment of environmental effects associated with current and proposed training activities, changes in force structure (to include new weapons systems and platforms), and range enhancements in the Range Complex.

The first step in the NEPA process is the preparation of a notice of intent (NOI) to develop the EIS/OEIS. The NOI provides an overview of the Proposed Action, Alternatives, and the scope of the EIS/OEIS. The NOI for this project was published in the *Federal Register* on July 31, 2007, and in seven (7) 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 to define, prioritize, and convey issues and concerns from the public to the Navy. As a result of the scoping process, the Navy received comments from the public (see Appendix F), as well as agencies (governmental and non-governmental), special interest groups, and federally recognized Native American Tribes and Nations which were considered in the preparation of the Draft EIS/OEIS.

Incorporating public input from the scoping process, the Draft EIS/OEIS was prepared to assess the potential effects of the Proposed Action and Alternatives on the human environment. It was then provided to the U.S. 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 the aforementioned newspapers announcing the availability of the 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, P.O. Box 990

620 Cedar Ave, Port Hadlock, WA 98399-0990; Kitsap Regional Library, 1301 Sylvan Way, Bremerton, WA 98310; Oak Harbor Public Library, 1000 SE Regatta Dr., Oak harbor, WA 98277; Timberland Regional Library, 420 7th St., Hoquiam, WA 98550; Port Townsend Public Library, 1220 Lawrence St., Port Townsend, WA 98368-6528; Lincoln City Public Library, 801 SW Highway 101, Lincoln City, OR 97367; and Humboldt County Library, 1313 3rd St., Eureka, CA 95501). Public meetings were held in the same geographic locations as the scoping meetings to receive public comments on the EIS/OEIS. The Oregon public hearings were held in Newport and Tillamook, whereas one scoping meeting took place in Depoe Bay, OR.

This 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, including correction of data, clarifications of and modifications to analytical approaches, and inclusion of additional data or analyses.

Finally, a Record of Decision (ROD) will be issued no less than 30 days after the Final EIS/OEIS is made available to the public. The ROD will summarize the Navy's decision and identify the selected alternative, describe the public involvement and agency decision-making processes, and include commitments to specific mitigation measures.

Comments received from the public during the scoping process are categorized and summarized in Table ES-1. This summary is not intended to provide a complete listing, but to show the extent of the scope of comments and the variety of parties making comments. A more thorough summary of the public scoping process is presented in Appendix F of this EIS/OEIS.

Public comments received on the Draft EIS are responded to in Appendix G of this EIS/OEIS. Appendix H contains a copy of all written comments, and Appendix I contains the formal transcripts of the public hearings, including the comments received during the hearings.

ES 1.3.1 Executive Order (EO) 12114

EO 12114 directs Federal agencies to provide for informed decision-making for major Federal actions outside the U.S. territorial sea. This includes actions within the Exclusive Economic Zone (EEZ) of a foreign nation, but excludes the territorial sea of a foreign nation. For purposes of this EIS/OEIS, areas outside U.S. territorial sea are areas beyond 12 nm (22.2 km) from shore. This EIS/OEIS satisfies the requirements of EO 12114, analysis of training activities or impacts occurring, or proposed to occur, beyond the U.S. territorial sea border of 12 nm.

For the majority of resource sections addressed in this EIS/OEIS, projected impacts outside of U.S. territorial waters would be similar to those within territorial waters. The 12 nm (22 km) distinction is simply a jurisdictional boundary and is not delineated for purposes of scheduling or management of military training activities. In addition, the baseline environment and associated impacts to the various resource areas analyzed in this EIS/OEIS are not substantially different within or outside the 12 nm (22 km) jurisdictional boundary. Therefore, for these resource sections, the impact analyses contained in the main body of the EIS/OEIS is comprehensive and follow both NEPA and EO 12114 guidelines. The description of the affected environment addresses areas both within and beyond U.S. territorial sea.

ES 1.3.2 Coastal Zone

The *Coastal Zone Management Act* (CZMA) of 1972 (16 U.S.C. § 1451) encourages coastal States to be proactive in managing coastal uses and coastal resources in the coastal zone. The CZMA is a voluntary program; participating States submit a Coastal Management Plan (CMP) to the National Oceanographic and Atmospheric Administration (NOAA) for approval. Activities of Federal agencies affecting the coastal zone must be consistent to the maximum extent practicable with the enforceable policies of NOAA-approved CMPs. Washington, Oregon, and California participate in the CZMA through approved

CMPs. The coastal zone is defined in the CZMA (at 16 U.S.C. § 1453) as extending 3 nm (5.5 km) seaward from the shoreline (i.e., “to the outer limit of State title and ownership under the Submerged Lands Act”). The coastal zone extends inland from the shorelines only to the extent necessary to control the shorelines; however, excluded from the coastal zone are lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government (16 U.S.C. § 1453).

Table ES-1: Summary of Comments Received During Scoping

Category	Commentator	Comment Summary
Alternatives	Olympic Coast National Marine Sanctuary (OCNMS) Advisory Council Private Citizens Olympic Coast Alliance	Concerns about: <ul style="list-style-type: none"> Navy consideration of a broader analysis of alternatives within the OCNMS and outside the Study Area. Alternatives to clean up Puget Sound. Alternative that includes reducing training.
Marine Life	Private Citizens California Coastal Commission	Concerns about: <ul style="list-style-type: none"> Potential impacts to marine life and habitat from sound, hazardous materials, pollution. Endangered Species Act (ESA)-listed species.
Airborne Noise	Private Citizens	Concerns about: <ul style="list-style-type: none"> Noise from aircraft.
Sonar, Sound in the Water	California Coastal Commission Private Citizens	Concerns about: <ul style="list-style-type: none"> Mid- and low-frequency sound sources, ranges, power settings, etc. Underwater detonations.
Birds and Terrestrial Species	OCNMS Advisory Council California Coastal Commission Environmental Protection Agency (EPA)	Concerns about: <ul style="list-style-type: none"> Noise disturbance of nesting or migratory waterfowl, shore birds, or other avian species within the OCNMS. Bird strike hazards. Habitat fragmentation from land use.
Cultural Resources	OCNMS Advisory Council EPA, Olympic Coast Alliance	Concerns about: <ul style="list-style-type: none"> Damage to cultural and historical resources, interference with tribal fishing and tribal ceremonial harvesting. Consultation with native tribes.
Economic Impacts	Private Citizens	Concerns about: <ul style="list-style-type: none"> Potential impacts to commercial and recreational fishing.

Washington became the first State to achieve a federally-approved State coastal management program in 1976. As defined by the Washington Department of Ecology (DOE) (Washington Administrative Code 173- 18; 20; 22; 27), Washington’s coastal zone is comprised of the following fifteen counties: Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, and Whatcom. Each of these counties is bounded by saltwater, either by the Pacific Ocean, Strait of Juan de Fuca, or Puget Sound. Because the Columbia River contains measurable quantities of salt water upstream to Pillar Rock, Wahkiakum County is included as a coastal zone county. The coastal zone includes all non-federal lands and waters from the coastline seaward for 3 nm (5.5 km). For the areas that abut the ocean, the coastline is defined as the position of ordinary low water. The

coastline along the inland marine waters is located at the seaward limit of rivers, bays, estuaries, or sound (Washington State Department of Ecology 2001).

The Oregon Coastal Management Program (OCMP) was federally-approved in 1977 (Oregon Revised Statutes 197.628- 197.650; Oregon Administrative Rules Chapter 660). The Oregon Department of Land Conservation and Development (DLCD) is the State's designated coastal management agency and is responsible for reviewing projects for consistency with the OCMP and issuing coastal management decisions. DLCD's reviews involve consultation with local governments, State agencies, Federal agencies, and other interested parties in determining project consistency with the OCMP.

As defined by the OCMP, Oregon's coastal zone extends from the Washington border on the north to the California border on the south, seaward to the extent of State jurisdiction as recognized by Federal law (the Territorial Sea, extending 3 nm [5.5 km] offshore), and inland to the crest of the coastal mountain range. There are three exceptions where the coastal boundary is different. These are where the basins of the Columbia, Umpqua, and Rogue Rivers lie predominantly inland of the crest of the coastal mountains. In these cases the coastal zone boundary crosses these rivers and extends to Bradwood, Scottsburg, and Agness, respectively.

Per the CZMA, Federal agencies are required to comply with the State of Oregon's "mandatory enforceable policies," including goal requirements, various State authorities, and local comprehensive plan and zoning ordinance requirements. The enforceable policies of the OCMP include the following:

- Oregon's 19 Statewide Planning Goals. Goal 19-Ocean Resources is the primary goal that is applicable to the proposed action (Oregon Administrative Rule [OAR] 660-015-0014[4]). Other goals potentially applicable to the proposed action include: Goal 16-Estuarine Resources (OAR 660-015-010[1]), Goal 17-Coastal Shorelands (OAR 660-015-010[2]), and Goal 18-Beaches and Dunes (OAR 660-015-010[3]).
- Land use plans by cities and counties approved by DLCD. Most are not likely to be applicable to the proposed action based on lack of land-based activities in Oregon's coastal zone. DLCD consults with local government during the Federal Consistency Review process.
- State laws such as Oregon Beach Bill and Removal/Fill Law. Most are not likely to be applicable to the proposed action based on lack of land-based activities in Oregon's coastal zone.
- Oregon Territorial Sea Plan (1987 c.576 §6; 1991 c.501 §2; 2003 c.744 §1).

The California Coastal Act (CCA) of 1976 (California Public Resources Code, § 30000 et seq.) implements California's CZMA program. The CCA includes policies to protect and expand public access to shorelines, and to protect, enhance and restore environmentally sensitive habitats including intertidal and nearshore waters, wetlands, bays and estuaries, riparian habitat, certain wood and grasslands, streams, lakes, and habitat for rare or endangered plants or animals.

Coastal zones that fall under the CCA include that land and water area of the State of California from the Oregon border to the border of the Republic of Mexico, extending seaward to the State's outer limit of jurisdiction (out to 3 nm [5.5 km]), including all offshore islands, and extending inland generally 1,000 yards from the mean high tide line of the sea. In significant coastal estuarine, habitat, and recreational areas it extends inland to the first major ridgeline paralleling the sea or five miles from the mean high tide line of the sea, whichever is less, and in developed urban areas the zone generally extends inland less than 1,000 yards.

For the activities covered in this EIS/OEIS, the Navy will initiate the Federal consistency process under the CZMA with the States of Washington, Oregon, and California pursuant to Subpart C of 15 CFR Part 930. For the State of Washington, the Navy has determined that its Proposed Action may have coastal

effects but is consistent, to the maximum extent practicable, with the States' enforceable policies, and accordingly will submit its consistency determination to the States in due course. For the States of Oregon and California, the Navy has determined that its Proposed Action will have no coastal effects. Accordingly, a Negative Determination was provided for both Oregon and California. The coastal consistency determination process, by law, requires the States to afford public comment and involvement on Federal consistency determinations.

ES 1.3.3 Other Environmental Requirements Considered

The Navy must comply with a variety of other Federal environmental laws, regulations, and EOs. These include (among other applicable laws and regulations):

- Marine Mammal Protection Act (MMPA);
- Endangered Species Act (ESA);
- Migratory Bird Treaty Act (MBTA);
- Bald and Golden Eagle Protection Act of 1940;
- Rivers and Harbors Act (RHA);
- Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) for Essential Fish Habitat (EFH);
- Clean Air Act (CAA);
- National Marine Sanctuaries Act (NMSA);
- Federal Water Pollution Control Act (Clean Water Act);
- National Historic Preservation Act (NHPA);
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations;
- EO 13045, Environmental Health and Safety Risks to Children; and
- EO 13175, Consultation and Coordination with Indian Tribal Governments

In addition, laws and regulations of the States of Washington, Oregon, and California appropriate to Navy actions are identified and addressed in this EIS/OEIS. This EIS/OEIS will facilitate compliance with applicable, appropriate State laws and regulations.

ES 1.4 PROPOSED ACTION AND ALTERNATIVES

ES 1.4.1 Alternatives Development

NEPA implementing regulations provide guidance on the consideration of alternatives in an EIS. These regulations require the decision-maker to consider the environmental effects of the Proposed Action and a range of alternatives to the Proposed Action (40 C.F.R. § 1502.14). The range of alternatives includes reasonable alternatives, which must be rigorously and objectively explored, as well as other alternatives that are eliminated from detailed study. To be "reasonable," an alternative must meet the stated purpose of and need for the Proposed Action.

The purpose of including a No Action Alternative in environmental impact analyses is to ensure that agencies compare the potential impacts of the proposed Federal action to the known impacts of maintaining the status quo. The current level of range management activity is used as a benchmark. By using the status quo as the No Action Alternative here, the Navy compares the impacts of the original proposal and preferred alternative to the impacts of continuing to operate, maintain, and use the NWTRC in the same manner and at the same levels as for current activities.

For the purposes of this EIS, the No Action Alternative serves as the baseline level of activities on the NWTRC, representing the regular and historical level of training and testing activity necessary to maintain Navy readiness. This baseline level of training activity has been relatively constant for several years, while the types of activities have been occurring in the area since before World War II. Consequently, the No Action Alternative stands as no change from current levels of training and testing usage. This interpretation of the No Action Alternative is consistent with guidance provided by CEQ (40 Questions #3), which indicates that where ongoing programs continue, even as new plans are developed, "no action" is "no change" from current management direction or level of management intensity. The potential impacts of the current level of training and RDT&E activity on the NWTRC (defined by the No Action Alternative) are compared to the potential impacts of activities proposed under Alternative 1 and Alternative 2.

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 has developed a set of criteria for use in assessing whether a possible alternative meets the purpose of and need for the Proposed Action. Each of these criteria 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:

1. All requirements of the FRTP as they apply to training conducted in the NWTRC;
2. Achievement of training requirements based on Fleet deployment schedules;
3. Joint training events;
4. Basic and Intermediate-level training⁴ of Navy forces in a training environment that replicates the dynamic nature of modern naval warfare;
5. Training requirements of formal military schools located at Navy installations throughout the Pacific Northwest (PACNW) region;
6. Navy RDT&E activities associated with unmanned aerial systems (UASs);
7. Allied military training activities;
8. 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;
9. Sustainable range management practices that protect and conserve natural and cultural resources; and
10. Preservation of access to training areas for current and future training requirements, while addressing potential encroachments that threaten to impact range capabilities.

NEPA regulations require that the Federal action proponent study means to mitigate adverse environmental impacts by virtue of going forward with the Proposed Action or an alternative (40 C.F.R. § 1502.16). Additionally, an EIS is to include study of appropriate mitigation measures not already included in the Proposed Action or alternatives (40 C.F.R. § 1502.14 [h]). Each of the alternatives, including the Proposed Action/Preferred Alternative considered in this EIS/OEIS, includes protective measures intended to reduce the environmental effects of Navy activities. Protective measures, such as current requirements and practices are discussed throughout this EIS/OEIS.

⁴ Training doctrine and procedures are based on operational requirements for deployment of naval forces. Training proceeds on a continuum, from teaching basic and specialized individual military skills, to intermediate skills or small unit training, to advanced, integrated training events, culminating in multi-service (Joint) exercises or pre-deployment certification events.

ES 1.4.2 Alternatives Considered

Three alternatives are analyzed in this EIS/OEIS: 1) The No Action Alternative – Current Level of 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. Alternative 2 is the Preferred Alternative.

The purpose of the Proposed Action is to achieve and maintain Fleet readiness using the NWTRC to support current and future training activities. The Navy proposes to:

- 1) Conduct training and RDT&E (UASs only) activities of the same types, and at the same levels of training intensity as currently conducted, without change in the nature or scope of military activities in the EIS/OEIS Study Area;
- 2) Increase training activities from current levels as necessary in support of the FRTP;
- 3) Accommodate force structure changes (new platforms and weapons systems); and
- 4) Implement range enhancements associated with the NWTRC.

The components that make up the proposed alternatives are discussed in the following sections.

ES 1.4.3 No Action-Current Training Activities within the NWTRC

The Navy has been operating in the NWTRC since before World War II. Under the No Action Alternative, training activities and major range events would continue at current levels. The NWTRC would not accommodate an increase in training activities required to execute the FRTP 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).

Training activities currently conducted in the NWTRC are described in detail in Chapter 2 of this EIS/OEIS, including a description of each type of event, the number of events conducted or proposed to be conducted, and the location within the Range Complex where the events occur. Each military training activity described in this EIS/OEIS meets a requirement that can be ultimately traced to requirements from the National Command Authority⁵. Training activities in the NWTRC vary from basic individual or unit level training events of relatively short duration involving few participants to integrated training activities, which may involve hundreds of participants over several days.

Over the years, the tempo and type of activities have fluctuated within the NWTRC due to changing requirements, the dynamic nature of international events, the introduction of advances in warfighting doctrine and procedures, and force structure changes. Such developments have influenced the tempo, duration, intensity, and location of required training. The factors influencing tempo and types of activities are fluid in nature and will continue to cause fluctuations in training activities within the NWTRC. Accordingly, training activity data used throughout this EIS/OEIS are a representative baseline for evaluating impacts that may result from the proposed training activities.

⁵ National Command Authority (NCA) is a term used by the United States military and government to refer to the ultimate lawful source of military orders. The term refers collectively to the President of the United States (as Commander-in-Chief) and the United States Secretary of Defense.

With reference to criteria identified above in ES 1.4.1, the No Action Alternative supports criteria 3, 6, 7, and 9, while only partially satisfying criteria 1 and 5. The No Action Alternative does not support criteria 2, 4, 8, and 10.

ES 1.4.4 Alternative 1: Increase Training Activities and Accommodate Force Structure Changes

Alternative 1 is a proposal designed to meet Navy and Department of Defense (DoD) 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 (SSGN), P-8 Multimission Maritime Aircraft (MMA), and unmanned aerial systems (UASs). Force structure changes associated with new weapons systems would include new air-to-air missiles, and new sonobuoys.

While Alternative 1 would meet the Navy's purpose and need, it does not meet established Navy minimum range capability requirements nor does it optimize the training capabilities of the Range Complex. With reference to the criteria identified in ES 1.4.1, Alternative 1 supports criteria 3 and 6-9, while only partially satisfying criteria 1, 2, and 5. Alternative 1 does not support criteria 4 and 10.

ES 1.4.5 Alternative 2: Increase Training Activities, Accommodate Force Structure Changes, and Implement Range Enhancements (Preferred Alternative)

Implementation of Alternative 2 would 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 would be increased over levels identified in Alternative 1;
- Range enhancements would 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 (PUTR), and development of air and surface target services.

Alternative 2 is the preferred alternative, because it would optimize the training capability of the NWTRC and meet Navy minimum required capabilities as documented in the Navy Ranges Required Capabilities Document (RCD) of September 8, 2005. Alternative 2 fully meets the criteria identified in ES 1.4.1.

ES 1.5 SUMMARY OF EFFECTS ANALYSIS

Chapter 3 of the EIS/OEIS describes existing environmental conditions for resources potentially affected by the Proposed Action and Alternatives described in Chapter 2. This chapter also identifies and assesses the environmental consequences of the Proposed Action and Alternatives. The affected environment and environmental consequences are described and analyzed according to categories of resources. The categories of resources addressed in this EIS/OEIS and the location of the respective analyses are identified in Table ES-2.

In the environmental impact analysis process, the resources analyzed are identified and the expected geographic scope of potential impacts for each resource, known as the resource's region of influence (ROI), is defined. The discussion and analysis, organized by resource area, covers the Offshore Area and the Inshore Area of the NWTRC, to the extent affected resources or potential impacts are present.

Analysis of potential impacts of Navy activities on marine mammals is particularly complex. Therefore, the Navy has provided a comprehensive discussion of the approach to and results of the impacts analysis relating to marine mammals in Section 3.9 Marine Mammals and Appendix D Marine Mammal Modeling.

Table ES-2: Categories of Resources Addressed, and EIS/OEIS Chapter 3 Analysis Guide

Geology and Soils (3.1)	Air Quality (3.2)
Hazardous Materials (3.3)	Water Resources (3.4)
Acoustic Environment – Airborne Sound (3.5)	Marine Plants & Invertebrates (3.6)
Fish (3.7)	Sea Turtles (3.8)
Marine Mammals (3.9)	Birds (3.10)
Terrestrial Biological Resources (3.11)	Cultural Resources (3.12)
Traffic (3.13)	Socioeconomics (3.14)
Environmental Justice & Protection of Children (3.15)	Public Safety (3.16)

ES 1.5.1 Geology and Soils

ES 1.5.1.1 Offshore Area

Marine water and sediment quality of the Offshore Area are discussed in ES Section 1.5.4. There is no analysis in Geology and Soils for the Offshore Area.

ES 1.5.1.2 Inshore Area

The most likely sources of impacts to soils under all alternatives arise from detonations, the by-products of exploded materials, and the movement of personnel and equipment. However, impacts from these activities under the Proposed Actions would be negligible. Therefore, no significant impacts would occur. Detonations are limited to land Demolition Training Ranges (DTRs), which are specifically designed to contain the debris from the detonations. As such, the amount of potentially hazardous by-products from such detonations is small and quickly evaporates or dissipates. Also, soils outside the DTRs are not disturbed, thus preventing soil run-off and erosion. Personnel and equipment movements are infrequent, the numbers of detonations and the net explosive weights involved are small, and the locations dispersed. A summary of impacts is provided in Table ES-3.

Table ES-3: Summary of Effects – Geology and Soils

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> Activities would have temporary and spatially-limited, short-term impacts. Negligible long-term effects would occur. 	<ul style="list-style-type: none"> Not Applicable
Alternative 1	<ul style="list-style-type: none"> Impacts generally the same as No Action Alternative. 	<ul style="list-style-type: none"> Not Applicable
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> Impacts generally the same as No Action Alternative. 	<ul style="list-style-type: none"> Not Applicable

ES 1.5.2 Air Quality

The EIS Study Area encompasses the Pacific Northwest Ocean surface and subsurface ocean operating area (PACNW OPAREA), over-ocean military airspace, the Darrington Area located within the Puget Sound, and onshore military operating areas (Okanogan, Roosevelt, and Olympic MOAs). The EIS Study Area includes areas that are under the jurisdiction of the Washington Department of Ecology (WDOE) (onshore MOAs and the Darrington Area). Coastal waters within 3 nautical miles (nm) (5.5 kilometers [km]) of a shoreline are part of the same air quality jurisdiction as the contiguous land area. Therefore, the waters within 3 nm (5.5 km) of the states of Washington, Oregon, and California are within the jurisdiction of the WDOE, Oregon Department of Environmental Quality (ODEQ), and the California Air Resources Board (CARB)/North Coast Unified Air Quality Management District, respectively. Portions of the OPAREAS that lie outside coastal waters and beyond 3 nm (5.5 km) of a coastline are not within any air quality jurisdiction. As shown in Table ES-4 emissions associated with implementation of Alternatives 1 and 2 would result in increases in air emissions above baseline (No Action Alternative) conditions. While there might be an increase above baseline levels, air quality standards would not be exceeded. Because all areas affected by Northwest Training Range Complex (NWTRC) activities are in attainment of all NAAQS, the Navy's actions are not subject to the CAA.

Table ES-4: Summary of Effects – Air Quality

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> The No Action Alternative involves maintaining activities at the baseline levels. Emissions for the No Action Alternative reflect baseline levels that are currently occurring. There is no increase in emissions above the baseline within U.S. Territory under the No Action Alternative. All areas are in attainment. 	<ul style="list-style-type: none"> The No Action Alternative involves maintaining activities at the baseline levels. Emissions for the No Action Alternative reflect baseline levels that are currently occurring. There is no increase in emissions above the baseline outside the U.S. Territory under the No Action Alternative.
Alternative 1	<ul style="list-style-type: none"> Within U.S. Territory, emission increases are associated with increased marine vessel activities, aircraft activities, ground vehicles, and ordnance use. Emission increases over baseline for Alternative 1 would result from increased activities. Emission increases would not be considered major and would not result in a significant impact on the air quality. Under Alternative 1, emissions within U.S. Territory would not be expected to result in an exceedance of an air quality standard. All areas are in attainment. 	<ul style="list-style-type: none"> Outside U.S. Territory, emission increases are mainly associated with increased surface vessel activities, with additional contributions from aircraft activities. Although Alternative 1 would result in increases in emissions of air pollutants over the No Action Alternative, emissions outside U.S. territorial waters would not be expected to adversely affect offshore air quality and emissions would not exceed air quality standards within U.S. Territory.
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> Impacts generally the same as Alternative 1. All areas are in attainment. 	<ul style="list-style-type: none"> Impacts generally the same as Alternative 1.

ES 1.5.2.1 Offshore Area

Although the Offshore Area includes the coastal waters within 3 nm of the shoreline, air quality impacts for this area, as well as those onshore, will be discussed as Inshore Area impacts in the following section. Outside U.S. Territory, emission increases are mainly associated with increased surface vessel activities, with additional contributions from aircraft activities. Although Alternative 1 and Alternative 2 would

result in increases in emissions of air pollutants above the No Action Alternative, associated emissions would not exceed air quality standards within U.S. Territory; therefore, no significant impacts would occur

ES 1.5.2.2 Inshore Area

Within U.S. Territory, emission increases are mainly associated with increased activities of aircraft, surface vessels, and ordnance use. In conclusion, although Alternatives 1 and 2 would result in increases in emissions of air pollutants, it is not anticipated that emissions would exceed air quality standards, as discussed in Section 3.2; therefore, no significant impacts would occur.

ES 1.5.3 Hazardous Materials

ES 1.5.3.1 Offshore Area

Due to the increased number of training activities, the overall amount of hazardous materials used during training under Alternatives 1 and 2 would be more than that used under the No Action Alternative. (Hazardous materials addressed in this document are broadly defined as substances that pose a substantial hazard to human health or the environment by virtue of their chemical properties.)

All hazardous materials would continue to be managed in compliance with applicable federal and state regulations, and DoD guidelines. No substantial changes in hazardous materials management practices are anticipated under any of the alternatives.

Expendable materials include the nonreactive materials that are not recovered following their use in a training activity. While these items represent persistent seabed litter, their strong resistance to degradation and their chemical composition mean that they do not chemically contaminate the surrounding environment by leaching heavy metals or organic compounds. Expendable material that sinks to the sea floor would gradually degrade, be overgrown by marine life, or incorporated into the sediments. Floating nonhazardous expendable material may be lost from targets and would either degrade over time or wash ashore as flotsam.

As summarized in Table ES-5, no significant harm to resources would occur under the No Action Alternative, Alternative 1, and Alternative 2 (the Preferred Alternative). Training materials would be expended in offshore areas or become buried in the sea floor sediments, and would have no substantial environmental effects. The overall volume of expended training items would increase in Alternative 1 and Alternative 2, the Preferred Alternative, in correlation to changes in training activities.

ES 1.5.3.2 Inshore Area

Activities involving expended hazardous materials include land demolition training conducted at DTR Seaplane Base and DTR Bangor, and underwater detonation training at EOD Crescent Harbor, EOD Floral Point, and EOD Indian Island. In the case of the land demolition training, the facilities for detonating explosives at these locations previously have been cleared of vegetation and combustible materials (i.e., disturbed). EOD training would not occur outside of the DTRs. The majority of blast debris is contained by the structure walls. All of the byproducts of detonations will dissipate or evaporate in the open air and would not be considered hazardous under those circumstances; therefore, no significant impacts would occur.

For underwater detonation training, high-order detonations result in almost complete conversion of explosive materials (99.997 percent). The majority of these byproducts (water, carbon dioxide, hydrogen, carbon monoxide, nitrogen, and ammonia), which represent 98 percent of all byproducts produced, are commonly found in seawater. The remaining byproducts are either gases or liquids that will dissipate,

evaporate, or dilute to undetectable or insignificant levels, or they react with constituents of salt water in the existing currents to form harmless substances; therefore, no significant impacts would occur.

Table ES-5: Summary of Effects – Hazardous Material

Alternative and Stressor	Summary of Effects and Impact Conclusion	
	NEPA (Territorial Waters, 0 to 12 nm)	Executive Order 12114 (Non-territorial Waters, >12 nm)
No Action		
Expended Materials	<ul style="list-style-type: none"> Long-term, minor, and localized accumulation of expended materials on the ocean floor. 	<ul style="list-style-type: none"> Long-term, minor, and localized accumulation of expended materials on the ocean floor.
Hazardous Material	<ul style="list-style-type: none"> Negligible effects. 	<ul style="list-style-type: none"> No significant harm to resources from hazardous materials would occur.
Alternative 1		
Expended Materials	<ul style="list-style-type: none"> Increase in expended materials compared to No Action. Long-term, minor, and localized accumulation of expended materials on the ocean floor. Most materials inert. 	<ul style="list-style-type: none"> Increase in expended materials compared to No Action Alternative. Long-term, minor, and localized accumulation of expended materials on the ocean floor. Most materials inert.
Hazardous Material	<ul style="list-style-type: none"> Negligible effects. 	<ul style="list-style-type: none"> No significant harm to resources from hazardous materials would occur.
Alternative 2 (Preferred Alternative)		
Expended Materials	<ul style="list-style-type: none"> Increase in expended materials compared to No Action. Long-term, minor, and localized accumulation of expended materials on the ocean floor. Most materials inert. 	<ul style="list-style-type: none"> Increase in expended materials compared to No Action. Long-term, minor, and localized accumulation of expended materials on the ocean floor. Most materials inert.
Hazardous Material	<ul style="list-style-type: none"> Negligible effects. 	<ul style="list-style-type: none"> No significant harm to resources from hazardous materials would occur.

ES 1.5.4 Water Resources

In the Study Area, water bodies that could be affected by the Proposed Action include:

- marine waters off the coasts of Washington, Oregon, and northern California, the Strait of Juan de Fuca, coastal waters, and estuaries;
- northern portions of Puget Sound;
- freshwater streams, lakes, ponds and wetlands; and
- man-made impoundments, ditches, and storage facilities.

Activities under the Proposed Action that may affect water resources are those materials expended during training that may affect water and sediment quality, such as petroleum products, heavy metals, and combustion byproducts. Factors considered in evaluating impacts on marine water and sediment quality include the extent or degree to which:

- deposition of expended training materials would directly affect bottom sediment quality or indirectly affect water quality;
- concentrations of potentially hazardous materials produced by the Proposed Action or alternatives that exceed established standards or violate existing laws or regulations; or
- the alternative would affect existing or future beneficial uses of existing water resources.

Table ES-6 summarizes the effects of the alternatives.

Table ES-6: Summary of Effects – Water Resources

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> Releases of ordnance constituents from explosives and ordnance used during training exercises have no substantial impacts. No long-term degradation of marine, surface, or ground water quality. 	<ul style="list-style-type: none"> Ordnance constituents and other materials (batteries, fuel, and propellant) from training devices have minimal effect; are below standards; or result in local, short-term impacts. No long-term degradation of marine water quality.
Alternative 1	<ul style="list-style-type: none"> Ordnance constituents (explosives, ordnance) from training devices and training exercises would have little effect or result in short-term impacts. No long-term degradation of marine, surface, or ground water quality. 	<ul style="list-style-type: none"> Ordnance constituents and materials (batteries, fuel, and propellant) from training devices would have minimal effect; would be below standards; or would result in local, short-term impacts. No long-term degradation of marine water quality.
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> Impacts to Alternative 2 would be substantially the same as Alternative 1. 	<ul style="list-style-type: none"> Impacts to Alternative 2 would be substantially the same as Alternative 1.

ES 1.5.4.1 Offshore Area

Under the Proposed Action, approximately 190,000 items would be expended annually. Assuming an even distribution of these items within the PACNW OPAREA, the concentration of expended items would be less than 1.6 per nm² (0.46 per km²). More than 60 percent of these materials would be small caliber rounds. Many of these items are inert, would settle to the sea bottom and become encrusted by chemical processes and marine organisms, and pose no hazard to ocean water resources. The number of vessel sinkings would also increase from one to two compared to the No Action Alternative. No significant harm to water resources would occur as a result of this level of deposition in the Offshore Area.

ES 1.5.4.2 Inshore Area

Under all alternatives, activities in nearshore habitats in Puget Sound would occur during mine countermeasure training at EOD Crescent Harbor, EOD Floral Point, and EOD Indian Island. Due to force structure changes that involve the move of EOD personnel out of the NWTRC, mine countermeasure training under Alternatives 1 and 2, underwater detonations would be reduced to four per year with a maximum charge size of 2.5 lb. Impacts from this level of activity would be negligible because of relatively low level of activity and standard site investigation and clean up procedures. The vast majority—98 percent—of detonation byproducts are normal constituents of seawater. Turbidity resulting from detonation would dissipate rather quickly depending on the site conditions at the time, such as wind speed and tidal currents.

None of the Proposed Action Alternatives would have long-term or significant impacts on marine or fresh water resources in the Study Area. Short-term effects on water quality would be related to ordnance use and expended materials, and would not be anticipated to be measurable given the large area over which activities occur and the dynamic nature of the marine environment of Puget Sound. Most residual materials that settle to the seafloor after their use in training activities will slowly dissolve and become diluted by ongoing ocean and tidal currents. Other materials are coated with plastic, which reduces corrosion and provides an effective barrier to water exchange. Given the mobility characteristics of the

soluble constituents, and the plastic coatings of others components, there is low potential for substantial accumulation of constituents in sediments. Therefore, no significant impacts on water resources would occur in the Inshore Area.

ES 1.5.5 Acoustic Environment – Airborne

Significant noise sources of the Proposed Action include aircraft activities and ordnance use.

ES 1.5.5.1 Offshore Area

Under the Proposed Action, the majority of Navy training and testing activities would increase, as discussed in Chapter 2. Activities that include or could include aircraft make up a large portion of Alternative 2 activities. Although a small proportion of flights and ordnance use would be inshore, many of these air activities take place far out to sea over the Pacific Ocean, out of range of human receptors. These activities in the Offshore Area would not result in significant harm to resources from airborne noise.

ES 1.5.5.2 Inshore Area

Under the Proposed Action, approximately 109 annual aircraft activities would involve helicopters at low-altitude flight, typically between Naval Air Station Whidbey Island (NASWI), Crescent Harbor Seaplane Base, and OLF Coupeville. The Proposed Action also includes approximately 112 unmanned aerial system (UAS) aircraft activities, usually in the vicinity of R-6701 (see Figure ES-2). Finally, on land and underwater detonations will occur as a result of EOD training near Crescent Harbor, Naval Base Kitsap-Bangor, and Indian Island.

Airborne noise level impacts currently generated by the No-Action Alternative are less than significant and those proposed under Alternatives 1 and 2 would not result in significant impacts for the following reasons:

- Noise from training activities in the PACNW OPAREA would be dispersed and intermittent, which would not contribute substantially to long-term noise levels, and few or no sensitive receptors (non-participants) would be exposed to these noise events.
- Noise from aircraft training activities over-land in MOAs would typically take place at high altitude and over relatively sparsely populated areas. Few sensitive receptors (non-participants) would be exposed to these noise events.
- Noise associated with EOD on or near shore would take place in areas currently used for EOD training. Underwater explosives are not likely to impact the airborne noise environment.
- Noise would be generated in training areas that have been in similar use for more than 50 years, so no new public areas would be exposed to noise from training and testing activities.
- Although Alternative 1 includes potential increases in the number of certain individual training activities while aircraft are airborne, these additional activities alone do not correspond to an increase in either aircraft flights or flight hours. The incremental increases in the numbers of range events would not cause any increase in long-term average noise levels. Hourly average equivalent noise levels are, and would remain, relatively low.

Table ES-7 summarizes the airborne noise effects for the No Action, Alternative 1, and Alternative 2.

Table ES-7: Summary of Effects – Airborne Noise

Alternative and Stressor	Summary of Airborne Noise Effects	
	NEPA (On Land and Territorial Waters out to 12 nm)	Executive Order 12114 (Non-Territorial Waters, >12 nm)
No Action		
Surface ship noise	<ul style="list-style-type: none"> Minor localized engine noise. Few to no sensitive receptors present. 	<ul style="list-style-type: none"> Minor at-sea noise. Few to no sensitive receptors present.
Aircraft noise	<ul style="list-style-type: none"> Short-term noise impacts during transits to and from range areas. 	<ul style="list-style-type: none"> Short-term noise impacts, including sonic booms. Few to no sensitive receptors present.
Weapon and target noise	<ul style="list-style-type: none"> Very short-term noise impacts. Few to no sensitive receptors present. 	<ul style="list-style-type: none"> Very short-term noise impacts. Few to no sensitive receptors present.
EOD	<ul style="list-style-type: none"> Short-term minor noise impacts from on or near shore EOD activities which would occur infrequently. Underwater EOD would have no airborne noise effects. 	<ul style="list-style-type: none"> There are no EOD activities in non-territorial waters.
Alternative 1		
Surface ship noise	<ul style="list-style-type: none"> Minor localized engine noise. Few to no sensitive receptors present. 	<ul style="list-style-type: none"> Minor at-sea noise. Few to no sensitive receptors present.
Aircraft noise	<ul style="list-style-type: none"> Short-term noise impacts during transits to and from range areas. 	<ul style="list-style-type: none"> Short-term noise impacts, including sonic booms. Few to no sensitive receptors present.
Weapon and target noise	<ul style="list-style-type: none"> Very short-term noise impacts. Few to no sensitive receptors present. 	<ul style="list-style-type: none"> Very short-term noise impacts. Few to no sensitive receptors present.
EOD	<ul style="list-style-type: none"> Short-term minor noise impacts from on or near shore EOD activities which would occur infrequently. Underwater EOD would have no airborne noise effects. 	<ul style="list-style-type: none"> There are no EOD activities in non-territorial waters.
Alternative 2 (Preferred Alternative)		
Surface ship noise	<ul style="list-style-type: none"> Minor localized engine noise. Few to no sensitive receptors present. 	<ul style="list-style-type: none"> Minor at-sea noise. Few to no sensitive receptors present.
Aircraft noise	<ul style="list-style-type: none"> Short-term noise impacts during transits to and from range areas. 	<ul style="list-style-type: none"> Short-term noise impacts, including sonic booms. Few to no sensitive receptors present.
Weapon and target noise	<ul style="list-style-type: none"> Very short-term noise impacts. Few to no sensitive receptors present. 	<ul style="list-style-type: none"> Very short-term noise impacts. Few to no sensitive receptors present.
EOD	<ul style="list-style-type: none"> Short-term minor noise impacts from on or near shore EOD activities which would occur infrequently. Underwater EOD would have no airborne noise effects. 	<ul style="list-style-type: none"> There are no EOD activities in non-territorial waters.

ES 1.5.6 Marine Plants and Invertebrates

Activities that may affect marine communities include materials expended during training and detonations.

ES 1.5.6.1 Offshore Area

Expended Materials

The effect of materials expended during training on open ocean communities in the Study Area is assessed by the number of expended items per unit area. Of approximately 190,000 items expended under Alternative 2 (the preferred alternative), more than 60 percent are small caliber gunnery rounds, all seven to 15 centimeters in size (smaller if broken apart during water or target impact). The remaining 40 percent include items ranging from 5 inch gun rounds to 2,000-lb bombs. Spread out over the entire Offshore Area, the annual level of expended materials in the NWTRC amounts to less than four items per square nautical mile for the No Action Alternative, less than five items for Alternative 1, and less than eight items for Alternative 2.

To evaluate impacts to marine plants and invertebrates more specifically, two exercises were selected: 1) the one with the most objects dispensed – surface-to-surface gunnery exercises (S-S GUNEX); and 2) the one with the largest objects dispensed – ship-sinking exercises (SINKEX). During each S-S GUNEX, approximately 850 rounds of small arms fire and several sizes of gunshells would be dispensed (see Table 2-9). The S-S GUNEX training area is approximately one square nautical mile in size (3.43 km²). Thus, during each exercise, approximately 250 rounds per km² would impact the surface and sink to the ocean floor (one round per acre). During each SINKEX, approximately 725 objects would be dispensed, including large bombs, missiles, larger gun shells, and one or two target vessels (see Table 2-9). The SINKEX training area is approximately two square nautical miles in size (6.9 km²). Thus, during each exercise, approximately 105 objects per km² would impact the surface and sink to the ocean floor (0.4 object per acre). Due to the widespread and sparse distribution of expended materials, no significant harm to marine plants and invertebrates are anticipated for the Proposed Action.

Detonations

The underwater detonations analyzed in the Proposed Action have the potential to kill or harm individual animals and plants in the immediate area of the detonation. The shock waves from such detonations attenuate quickly (see Section 3.6.2). Their distribution also tends to be patchy rather than uniform. In situations where a detonation occurred in an area with a high concentration of individuals, the extent of death or harm would be substantially greater than in a more barren area.

Because the detonations in the Offshore Area take place at or near the surface, the impacts are not expected to reach the deep benthic habitats (seafloor greater than 200 meters), therefore no significant harm to marine plans and invertebrates are expected. See discussion in Section 3.6.2.

ES 1.5.6.2 Inshore Area

Expended Materials

The only expended materials in the Inshore Area are from underwater detonations in which small pieces of simulated mine targets may separate from the target. Following underwater detonation training, EOD personnel retrieve larger pieces. The nonhazardous material that is not recovered settles to the seafloor and eventually becomes covered by sediment. No significant impacts would occur.

Detonations

In nearshore habitats, underwater detonations take place in designated training areas both near the water's surface and near the bottom. Under all alternatives, the only activities in the Inshore Area that involve detonations and impacts would occur at EOD Crescent Harbor, EOD Floral Point, and EOD Indian Island. Under both Alternative 1 and Alternative 2, the number of underwater detonations would decrease significantly from the No Action Alternative (from 60 to 4 annual detonations). This decrease is due to the relocation of a significant component of EOD personnel currently based at Whidbey Island. Because eelgrass and kelp beds do not occur within the underwater detonation training areas, Alternatives 1 and 2

would not result in any adverse effects on these plants and the communities they support. Detonations at or near the surface or the bottom could harm invertebrates. The degree of harm, including death, would depend on the organism's proximity to the detonation. Given that the training sites are generally disturbed from past training activities, the large decrease in the number of exercises and detonations, and the small area in which the exercises are concentrated, impacts would be negligible.

Because of these factors and the very low number of detonations that would be associated with the Proposed Action, no significant impacts would occur to marine plants and invertebrates. Table ES-8 summarizes potential effects.

Table ES-8: Summary of Effects – Marine Plants and Invertebrates

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> Releases of munitions constituents from explosives and ordnance used during training exercises have no significant impacts. 	<ul style="list-style-type: none"> Munitions constituents and other materials from training activities have negligible effects.
Alternative 1	<ul style="list-style-type: none"> Impacts generally the same as under the No Action Alternative. 	<ul style="list-style-type: none"> Impacts generally the same as under the No Action Alternative.
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> Impacts generally the same as under the No Action Alternative. 	<ul style="list-style-type: none"> Impacts generally the same as under the No Action Alternative.

ES 1.5.7 Fish

ES 1.5.7.1 Offshore Area

Relatively small numbers of fish would be killed by shock waves from inert bombs, and intact missiles and targets hitting the water surface. These and several other types of activities common to many exercises or tests have minimal effects on fish: aircraft, missile, and target overflights; muzzle blast from 5 inch naval guns, release of munitions constituents, falling debris, and small arms rounds. Underwater detonations may result in disturbance, injury, or mortality to ESA-listed salmonid species, but any negative effect to the species is considered unlikely; therefore, the Proposed Action may affect, but is not likely to adversely affect ESA-listed salmonid species. No significant harm to fish populations (including forage fish consumed by ESA-listed salmonid species) or habitat would occur as a result of implementation of any of the alternatives. Navy training activities will not occur in the freshwater components of green sturgeon critical habitat areas and will not adversely affect the designated estuarine, nearshore marine, and offshore marine primary constituent elements.

Because only a few species of fish may be able to hear the relatively higher frequencies of mid-frequency sonar, effects of sonar used during Navy exercises on fish are minimal (see Section 3.7). ESA-listed salmonid species are not among the fish species that may hear mid-frequency sonar. The Proposed Action does not include the use of low-frequency sonar. Table ES-9 summarizes impacts to fish species and fish habitat.

ES 1.5.7.2 Inshore Area

The only stressor to fish in the Inshore Area results from underwater detonations, which are limited to three specific training areas; Crescent Harbor Underwater EOD range, Floral Point Underwater EOD Range, and Indian Island Underwater EOD Range.

Table ES-9: Summary of Effects – Fish and Essential Fish Habitat

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> • Aircraft overflight, weapons firing disturbance, and expended materials associated with the No Action Alternative would result in minimal effects to fish. • Because only a few species of fish may be able to hear the relatively higher frequencies of mid-frequency sonar, effects of sonar used in Navy exercises on fish are minimal. • Effects of non-explosive ordnance use on fish populations would be minimal. • Explosive ordnance use may result in injury or mortality to individual fish but would not result in impacts to fish populations. • The No Action Alternative would not result in adverse effects to fish populations or EFH as defined under the MSFCMA. • Underwater detonations may affect but are not likely to adversely affect ESA-listed fish species. Baseline environmental conditions of critical habitat would remain the same. 	<ul style="list-style-type: none"> • Aircraft overflight, weapons firing disturbance, and expended materials would result in minimal harm to fish. • Because only a few species of fish may be able to hear the relatively higher frequencies of mid-frequency sonar, sonar used in Navy exercises would result in minimal harm to fish. • Non-explosive ordnance use would result in minimal harm to fish populations. • Explosive ordnance use may result in injury or mortality to individual fish but would not result in impacts to fish populations. Baseline environmental conditions of critical habitat would remain the same. • The No Action Alternative would not result in adverse effects to fish populations or EFH as defined under the MSFCMA. • No effect to threatened and endangered species or critical habitat.
Alternative 1	<ul style="list-style-type: none"> • Impacts similar to those described in the No Action Alternative. Environmental conditions of critical habitat would be improved compared to current baseline conditions, since underwater detonations would be reduced from current conditions by greater than 90 percent. • Underwater detonations may affect but are not likely to adversely affect ESA-listed fish species. Baseline environmental conditions of critical habitat would remain the same. 	<ul style="list-style-type: none"> • Impacts similar to those described in the No Action Alternative. • No effect to threatened and endangered species or critical habitat.
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> • Impacts similar to those described in the No Action Alternative. Environmental conditions of critical habitat would be improved compared to current baseline conditions, since underwater detonations would be reduced from current conditions by greater than 90 percent. • Underwater detonations may affect but are not likely to adversely affect ESA-listed fish species. Baseline environmental conditions of critical habitat would remain the same. 	<ul style="list-style-type: none"> • Impacts similar to those described in the No Action Alternative. • No effect to threatened and endangered species or critical habitat.

There were previously two existing biological opinions (BOs), one from NMFS and one from U.S. Fish and Wildlife Service (USFWS), that covered limited activities (underwater detonations) within the NWTRC. These two BOs have been superseded by new BOs based on the Biological Evaluation that the Navy has completed that included all activities in the NWTRC.

These earlier BOs covered a significantly greater number of underwater detonations (up to 40 annual detonations) than the four annual detonations now required for Navy training. Additionally, the previous BOs considered the Navy's use of up to 20-lb underwater detonation charges. The new BOs consider only 2.5-lb charges as the Navy's training needs have changed.

As discussed in Section 3.7.1.1.1, there are several species of ESA-designated salmonids with known or potential occurrence in the NWTRC. As part of this EIS/OEIS process, the Navy prepared and updated a biological evaluation. Following consultation, the Navy received separate biological opinions from NMFS and the USFWS.

The USFWS biological opinion concludes that the effects of the Navy's proposed action is not likely to jeopardize the continued existence for species within the USFWS jurisdiction.

The NMFS biological opinion concludes that the Navy's proposal to conduct activities are likely to affect but are not likely to jeopardize the continued existence of these threatened and endangered species under NMFS jurisdiction. The incidental take statement from NMFS will be issued once the Final Rule is complete.

Considering ESA-listed species, the Crescent Harbor and Floral Point Underwater EOD Ranges are outside the major migration corridor for river systems in the area. The Indian Island Underwater EOD Range lies on a migration corridor for Chinook, chum, and other salmon species in the Hood Canal system. As such, the Indian Island Underwater EOD Range area is expected to support larger numbers of adult salmon than Crescent Harbor Underwater EOD Range area. Resident Chinook (blackmouth) may occur in low densities. At any time of the year, small numbers of adult salmon are expected to occur within the injury distances of the detonation sites at the time of detonation. Therefore, juvenile and adult salmon could be injured or killed by EOD detonations. Effects to steelhead or bull trout would be similar to those described for salmon. During consultations with the USFWS, the Navy agreed to relocate the one annual underwater EOD event at Indian Island to Floral Point.

Impacts to fish from detonations would be possible, but have a low potential for occurrence. While serious injury and/or mortality to individual fish would be expected if they were present in the immediate vicinity of underwater detonations and high explosive ordnance use, detonations under the No Action Alternative would not result in impacts to fish populations based on the low number of fish that would be affected. Due to force structure changes that involve the move of EOD personnel out of the NWTRC, annual underwater detonations are decreasing from 60 to 4, and the likelihood of harm to any fish species is even further reduced.

ES 1.5.8 Sea Turtles

ES 1.5.8.1 Offshore Area

There are no formal density studies for sea turtles in the PACNW OPAREA, but use of the area by sea turtles other than the leatherback are extremely unlikely to occur due to temperature restrictions. Leatherbacks have been reported in the Study Area, but their occurrence is not common. This EIS/OEIS analyzes potential effects to the leatherback sea turtle in the context of the ESA, NEPA, and EO 12114. For purposes of ESA compliance, effects of the action were analyzed to make the Navy's determination of effect for listed species (that is, no effect or may affect). The Navy completed ESA Section 7 consultation with NMFS to ensure that unavoidable significant effects to sea turtles do not result from implementation of the proposed action. The low occurrence of leatherback sea turtles, limited number of stressors from Navy activities and routine implementation by the Navy of current requirements and practices combine to produce a low potential for effects to leatherback sea turtles under all the alternatives. Therefore, the Navy concluded that impacts from the Proposed Action may affect, but are not likely to adversely affect leatherback sea turtle populations in the NWTRC Study Area. In their biological opinion related to the Navy's proposed activities, NMFS determined that the Navy's activities are likely to adversely affect but are not likely to jeopardize the continued existence of leatherback sea turtles. Table ES-10 summarizes the effects of the alternatives.

ES 1.5.8.2 Inshore Area

All discussion of sea turtle impacts in this Executive Summary is contained in the Offshore Area section above.

Table ES-10: Summary of Effects – Sea Turtles

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> Activities would have temporary and spatially limited short-term impacts. No long-term effects would occur. No Action Alternative is likely to adversely affect but not likely to jeopardize the continued existence of leatherback sea turtles. 	<ul style="list-style-type: none"> Activities would have temporary and spatially limited short-term impacts. No long-term effects would occur. No Action Alternative is likely to adversely affect but not likely to jeopardize the continued existence of leatherback sea turtles.
Alternative 1	<ul style="list-style-type: none"> Impacts generally the same as No Action Alternative. Alternative 1 is likely to adversely affect but not likely to jeopardize the continued existence of leatherback sea turtles. 	<ul style="list-style-type: none"> Impacts generally the same as No Action Alternative. Alternative 1 is likely to adversely affect but not likely to jeopardize the continued existence of leatherback sea turtles.
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> Impacts generally the same as No Action Alternative. Alternative 2 is likely to adversely affect but not likely to jeopardize the continued existence of leatherback sea turtles. 	<ul style="list-style-type: none"> Impacts generally the same as No Action Alternative. Alternative 2 is likely to adversely affect but not likely to jeopardize the continued existence of leatherback sea turtles.

ES 1.5.9 Marine Mammals

The ESA and MMPA prohibit the unauthorized harassment of marine mammals and endangered species, and provide the regulatory processes for authorizing any such harassment that might occur incidental to an otherwise lawful activity. These two acts establish the context for determining potentially adverse impacts to marine mammals from military activities. Because acoustic modeling and analysis of impacts to marine mammals made no distinction between effects within territorial waters and those outside territorial waters, this section does not structure the analysis based on Offshore and Inshore Areas. See Section 3.9.2.1 of this EIS/OEIS for a more complete description of both the MMPA and the ESA.

Endangered Species Act

The Navy is consulting with NMFS under Section 7 of the ESA regarding its determination of effect for federally-listed marine mammals and critical habitat. A biological evaluation of potential effects to listed species resulting from implementation of the Proposed Action of this EIS/OEIS was prepared for use in the Section 7 consultation process. On June 15, 2010, NMFS completed their 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 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. Table ES-11 provides a summary of the Navy's determination of acoustic effects for federally-listed marine mammals that potentially occur in the Study Area.

The analysis presented in Section 3.9.2 indicates that all seven ESA-listed species of marine mammals may be affected by one or more stressors resulting from training activities associated with the alternatives. All species may be affected by exposures to sonar emissions.

Table ES-11: Summary of the Navy's Determination of Effect for Federally Listed Marine Mammals that May Occur-- Preferred Alternative (Alternative 2)

Stressor	Blue Whale	Fin Whale	Humpback Whale	North Pacific Right Whale	Sei Whale	Sperm Whale	Southern Resident Killer Whale (SP/CH) ^{b/}	Stellar Sea Lion (SP/CH) ^{b/}	Sea Otter
Vessel Movements									
Vessel Disturbance	MA ^{a/}	MA	MA	MA	MA	MA	MA/NE	MA/NE	MA
Vessel Collisions	MA	MA	MA	MA	MA	MA	NE/NE	NE/NE	NE
Aircraft Overflights									
Aircraft Disturbance	MA	MA	MA	MA	MA	MA	MA/NE	MA/NE	MA
Non-Explosive Practice Munitions									
Weapons Firing Disturbance	MA	MA	MA	NE	MA	MA	MA/NE	MA/NE	NA
Non-Explosive Ordnance Strikes	MA	MA	MA	NE	MA	MA	MA/NE	MA/NE	NA
High Explosive Ordnance									
Underwater Detonation	NA	NA	MA	NA	NA	NA	MA	MA	NA
Explosive Ordnance	MA	MA	NE	NA	NE	MA	NE	MA	NA
Active Sonar									
Mid- and High-Frequency Sonar	MA	MA	MA	NA	MA	MA	MA	MA	NA
Expended Materials									
Ordnance Related Materials	NE	NE	NE	NE	NE	MA	NE/NE	NE/NE	NE
MK-58 Marine Markers	MA	MA	MA	MA	MA	MA	MA/NE	MA/NE	MA
Target Related Materials	NE	NE	NE	NE	NE	MA	NE/NE	NE/NE	NE
Chaff	MA	MA	MA	MA	MA	MA	MA/NE	NE/NE	NE
Sonobuoys	MA	MA	MA	MA	MA	MA	MA/NE	MA/NE	MA

a/ MA = May Affect; NE = No Effect

b/ SP/CH = Species effect/critical habitat effect determination made only for species with listed critical habitat

The Study Area contains designated critical habitats for the southern resident killer whale population in the Puget Sound and Straits of Juan de Fuca areas of northwest Washington and breeding rookeries for Steller sea lion at several locations along the coast of Oregon and northern/central California. The critical habitat analysis examined the potential effects of training and testing activities on the primary constituent elements of critical habitat considered essential to the conservation of each species. None of the Navy activities were determined to either destroy or adversely modify critical habitat for either species. Therefore, it was concluded that training and testing activities under the proposed action would have no effect on either species' habitat.

This assessment focused on four aspects of the proposed NWTRC exercises — ship traffic, mid-frequency sonar, aircraft overflights, and underwater detonations. Potential risks associated with the ship traffic were assessed by estimating the probability of a ship striking a marine mammal. Potential risks associated with sonars that are likely to be employed during anti-submarine warfare exercises were assessed by treating the acoustic energy produced by those sonar as a pollutant introduced into the ocean environment. The sonar analysis evaluated the likelihood of listed species being exposed to sound pressure levels associated with mid-frequency sonar, which includes estimating the intensity, duration, and frequency of exposure. The analysis assumed that mid-frequency sonar posed no risk to listed species if they were not exposed to sound pressure levels from the mid-frequency sound sources. The analysis assumed that the potential consequences of exposure to mid-frequency sonar on individual animals would be a function of the intensity (measured in both sound pressure level in decibels and frequency), duration, and frequency of the animal's exposure to the mid-frequency transmissions.

Potential risks associated with underwater detonations that are likely to be employed during warfare exercises were assessed by treating the impulse energy produced by underwater detonations as an energy force introduced into the ocean environment. The underwater detonation analysis evaluated the likelihood of listed species being exposed to sound pressure levels associated with underwater detonations, which includes estimating the intensity, duration, and frequency of exposure. The analysis assumed that underwater detonations posed no risk to marine mammal species if they were not exposed to sound pressure levels from the detonations.

Aircraft overflights are not expected to result in stress to marine mammals because it is extremely unlikely that individual animals would be repeatedly exposed to low altitude overflights. Limited research in this area has been primarily focused on aerial scientific surveys in which aircraft fly low and slow. In these studies, whale reactions have been inconsistent (Smultea et al. 2001). Most aircraft flights proposed in the alternatives are at high altitudes where the sound is greatly reduced at the surface of the ocean.

Marine Mammal Protection Act

The analysis presented above indicates that several species of marine mammals could be exposed to impacts associated with underwater detonations and explosive ordnance use under the No-Action Alternative, Alternative 1, or Alternative 2 (Preferred Alternative) that could result in Level A or Level B harassment as defined by the MMPA. Exposure estimates are provided in Section 3.9.2. Other stressors associated with the Proposed Action are not expected to result in Level A or Level B harassment. Accordingly, the Navy is working with NMFS through the MMPA permitting process. When the rulemaking process is complete, the Letter of Authorization provided by NMFS in their final rule will authorize the Navy to "take" marine mammals pursuant to the MMPA.

National Environmental Policy Act and Executive Order 12114

As summarized in Table ES-12, statements regarding impacts on marine mammals under the No Action Alternative, Alternative 1, and Alternative 2 are provided in accordance with both NEPA and EO 12114. Based on acoustic modeling and analysis, impacts to marine mammals in non-territorial waters were not discernable from those in territorial waters.

Table ES-12: Summary of Effects – Marine Mammals

Alternative and Stressor	Summary of Effects and Impact Conclusion
	NEPA and Executive Order 12114
No Action	
Vessel Movements	Short-term behavioral responses from general vessel disturbance. Potential for injury or mortality from vessel collisions.
Aircraft Overflights	Potential for short-term behavioral responses to overflights. No long-term population-level effects.
Non-Explosive Practice Munitions	Extremely low probability of direct strikes due to the nature of operations, spatial distribution of marine mammals in the Study Area and implementation of mitigation and monitoring measures.
High-Explosive Ordnance	Short-term behavioral responses; TTS, slight injury, or mortality from ordnance use and underwater detonations.
Active Sonar	Short-term behavioral responses, TTS, or PTS from sonar use.
Expendable Materials	Low potential for ingestion of ordnance related materials.
Alternative 1	
Vessel Movements	Short-term behavioral responses from general vessel disturbance. Potential for injury or mortality from vessel collisions. Slight increase compared to No Action Alternative.
Aircraft Overflights	Potential for short-term behavioral responses to overflights. Slight increase compared to No Action Alternative. No long-term population-level effects.
Non-Explosive Practice Munitions	Extremely low probability of direct strikes due to the nature of operations, spatial distribution of marine mammals in the Study Area and implementation of mitigation and monitoring measures. Slight increase compared to No Action Alternative.
High-Explosive Ordnance	Short-term behavioral responses; TTS or injury from ordnance use and underwater detonations. Reductions in underwater EOD training would result in no effects to marine mammals from EOD activities.
Active Sonar	Short-term behavioral responses; TTS or PTS from sonar use. Slight increase compared to No Action Alternative.
Expendable Materials	Low potential for ingestion of ordnance related materials. Slight increase compared to No Action Alternative.
Alternative 2 (Preferred Alternative)	
Vessel Movements	Short-term behavioral responses from general vessel disturbance. Potential for injury or mortality from vessel collisions. Slight increase compared to No Action Alternative.
Aircraft Overflights	Potential for short-term behavioral responses to overflights. Slight increase compared to No Action Alternative. No long-term population-level effects.
Non-Explosive Practice Munitions	Extremely low probability of direct strikes due to the nature of the operations, spatial distribution of marine mammals in the Study Area and implementation of mitigation and monitoring measures. Slight increase compared to No Action Alternative.
High-Explosive Ordnance	Short-term behavioral responses; TTS, slight injury or mortality from ordnance use. Reductions in underwater EOD training would result in no effects to marine mammals from EOD activities.
Active Sonar	Short-term behavioral responses; TTS or PTS from sonar use. Slight increase compared to No Action Alternative.
Expendable Materials	Low potential for ingestion of ordnance related materials. Slight increase compared to No Action Alternative.

ES 1.5.10 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 developments, loss of habitat, commercial fishing, and introduced species have caused populations of many seabird species to decline in recent decades. Navy activities in the NWTRC would not be expected to increase effects to bird populations. Based on the analysis of the proposed alternatives, it is thought that effects to protected and migratory birds would be minimal. The sheer 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 would occur.

As part of the EIS/OEIS process, Navy prepared a BE for the NWTRC for use, as appropriate, in agency consultations. The ESA-listed birds analyzed in this EIS 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 snowy plover (*Charadrius alexandrinus nivosus*). The BE provides detailed descriptions and analysis of the potential impacts to all threatened and endangered species and critical habitats protected under the ESA. Navy initiated consultation with USFWS in accordance with Section 7 of the ESA. The Navy has concluded consultations with the USFWS and has received a biological opinion. It is the biological opinion of the USFWS that the proposed action is not likely to jeopardize the continued existence of the species under USFWS jurisdiction for the 5 years proposed beginning 2010.

In accordance with ESA, under the No Action Alternative, Alternative 1, or Alternative 2 (Preferred Alternative) at the NWTRC, vessel movements, aircraft overflight, ordnance use, underwater detonations and military expended materials (entanglement) may affect individual short-tailed albatross; however, these activities would not have community or population level effects. Aircraft overflights may affect but are not likely to adversely affect the northern spotted owl. Vessel movements, aircraft overflights and underwater detonations may affect individual marbled murrelets and individual California brown pelicans. Aircraft overflights and underwater detonations may affect individual western snowy plovers, but would not have community or population level effects. Proposed No Action Alternative, Alternative 1, or Alternative 2 (Preferred Alternative) NWTRC activities would not destroy or adversely modify critical habitat for the marbled murrelet or the western snowy plover. Activities associated with any of the alternatives will have no significant adverse effect to these birds.

Implementation of the No Action Alternative, Alternative 1, or Alternative 2 (Preferred Alternative) would not adversely affect the bald eagle as defined by the Bald and Golden Eagle Protection Act (see Section 3.10.1.3), or MBTA regulations (see Section 3.10.3.1) applicable to military readiness activities. In accordance with the NEPA, the No Action Alternative, Alternative 1, or Alternative 2 would have no significant adverse effects on the bald eagle or migratory birds on land or in territorial waters. In accordance with EO 12114, harm to bald eagles from the No Action Alternative, Alternative 1, or Alternative 2 would be unlikely in non-territorial waters. The No Action Alternative, Alternative 1, or Alternative 2 is not expected to disturb, or result in take of bald eagles as defined by the Bald and Golden Eagle Protection Act. Table ES-13 summarizes effects of the alternatives.

ES 1.5.11 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, NBK-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 the Proposed Action and Alternatives that may affect the terrestrial resources discussed in this

section are those that are most likely to result in land disturbance, such as aircraft overflight, detonations, personnel training, and materials expended during training.

Table ES-13: Summary of Effects – Birds

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> • Vessel movements could result in short-term behavioral responses and low potential for injury/mortality from collisions. No long-term population-level effects. • Short-term behavioral response to overflights. Low potential for bird injury from aircraft strikes. No long-term or population-level effects. • Minor, short-term, and localized disturbance due to land-based training and land demolition activities. No long-term or population-level effects. • Low potential for direct and indirect effects to birds from ordnance use. No long-term or population-level effects. • Low potential for direct and indirect effects to birds from underwater detonations and explosives use. No long-term or population-level effects. • Low potential for ingestion or entanglement impacts to birds resulting from military expended materials. No long-term or population-level effects. • No adverse impacts to migratory birds or bald eagles. • Not expected to disturb, or result in take of, bald eagles as defined by the Bald and Golden Eagle Protection Act. • May affect, but not likely to adversely affect threatened and endangered birds; would not destroy or adversely modify critical bird habitat. 	<ul style="list-style-type: none"> • Vessel movements could result in short-term behavioral responses and low potential for injury/mortality from collisions. No long-term population-level effects. • Short-term behavioral response to overflights in non-territorial water areas. Low potential for harm to birds from aircraft strikes. • Low potential for harm to birds from ordnance use in non-territorial water areas. • Low potential for harm to birds from explosives use in non-territorial water areas. • Low potential for harm from military expended materials in non-territorial water areas. • No adverse impacts or harm to migratory birds or bald eagles in non-territorial water areas. • Not expected to disturb, or result in take of, bald eagles in non-territorial water areas. • May affect, but not likely to adversely affect threatened and endangered birds in non-territorial water areas; would not destroy or adversely modify critical bird habitat.
Alternative 1	<ul style="list-style-type: none"> • Impacts generally the same as No Action Alternative. • Impacts from underwater detonations would be further reduced due to decrease in number of training events. • Other impacts slightly higher than the No Action Alternative. 	<ul style="list-style-type: none"> • Impacts generally the same as No Action Alternative. • Impacts from underwater detonations would be further reduced due to decrease in number of training events. • Otherwise, potential for harm is slightly higher than the No Action Alternative.
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> • Impacts generally the same as No Action Alternative. • Impacts from underwater detonations would be further reduced due to decrease in number of training events. • Other impacts slightly higher than the No Action Alternative. 	<ul style="list-style-type: none"> • Impacts generally the same as No Action Alternative. • Impacts from underwater detonations would be further reduced due to decrease in number of training events. • Otherwise, potential for harm is slightly higher than the No Action Alternative.

ES 1.5.11.1 Plant Species

Only one federally-listed threatened species is known to occur in the NWTRC; the golden Indian paintbrush (*Castilleja levisecta*). Based on species distribution information provided in the Naval Air Station Whidbey Island Integrated Natural Resources Management Plan, golden Indian paintbrush is known to occur at Forbes Point on Seaplane Base.

Vehicle and equipment use and foot traffic associated with the continued use of the existing Demolition Training Range (DTR) at Seaplane Base and Bangor by personnel would have a negligible effect on vegetation. These sites have been and continue to be used for demolition training and the areas are considered to be disturbed. There are no significant communities present in these areas and no potential habitat for threatened and endangered plant species.

Naval Special Warfare training on Indian Island could affect terrestrial vegetation because of off-road foot traffic. However, because the covert nature of Special Forces activities requires small numbers of personnel conducting special training and having an overall light footprint, effects on vegetation would be comparatively minimal.

Foot traffic in undisturbed areas has the potential to cause damage to individual plants from trampling or crushing in localized areas. However, there would not be any loss of populations and areas of trampling would be expected to recover in a short time period.

Insertion/extraction activities at OLF Coupeville and Seaplane Base, with additional SAR activities occurring at Seaplane Base Survival Area, occur predominantly in defined drop zones or insertion points. In these designated areas, vegetation would be impacted because of crushing, trampling, and uprooting. In areas such as grasslands and scrub-shrub habitats vegetation could experience long-term effects as soils become compacted and vegetation is removed. However, given the low frequency of these actions and relatively low number of personnel participating, impacts would be less than significant.

At Seaplane Base, helicopter rope suspension training activities occur monthly and involve approximately eight participants. At OLF Coupeville, these covert activities generally consist of four to six people walking through an area and activities occur infrequently; for two to three weeks twice a year. Given the low frequency of these actions and relatively low number of personnel participating, impacts would be less than significant.

Demolition practice on land takes place in the existing DTR Seaplane Base and DTR Bangor, where little vegetation is present. Because of the long-term use of the DTRs and repeated disturbances in these areas, little vegetation is present and the areas are considered disturbed. There would be no significant impacts to vegetation in these areas.

ES 1.5.11.2 Animal Species

As summarized in Table ES-14, the No Action Alternative, Alternative 1, and Alternative 2 would have negligible to minor short-term impacts on terrestrial vegetation, wetlands, and wildlife.

During EOD training activities, the presence of personnel and vehicles and equipment use at established DTRs on Seaplane Base and NBK-Bangor to conduct training would have no effect on wildlife as these areas are disturbed from prior use and provide poor quality habitat for wildlife. They do provide minimal habitat for some small mammals, snakes, and perching birds. Individuals of species present in these areas would be disturbed from feeding, nesting, or resting while personnel were present and equipment were in use. Some may leave the area to more suitable adjacent available habitats. Individual animals may also adjust to the disturbance of equipment noise and people with minimal effect. There would be no change in

populations of animals and no significant impacts to wildlife because of vehicle and foot traffic associated with EOD training activities.

Table ES-14: Summary of Effects – Terrestrial Biological Resources

Alternative and Stressor	Summary of Effects and Impact Conclusion
No Action	
Land Based Training	Minor, short-term, and localized disturbance to terrestrial vegetation and wildlife from foot traffic, light vehicular use, and ordnance and pyrotechnics. No long-term population-level effects. Wetlands would not be affected.
Land Demolitions	Temporary displacement and minor disturbance of terrestrial wildlife in the areas adjacent to DTRs. Wildlife would exhibit short-term physiological response but would return to normal behaviors shortly after disturbance. No long-term population level effects. Vegetation and wetlands would not be affected by EOD actions in established DTRs.
Aircraft Overflights	Short-term behavioral responses of wildlife, including special status species, particularly from helicopters. For grizzly bear, Canada Lynx, gray wolf, and the woodland caribou, aircraft overflights would result in a may affect, not likely to adversely affect finding under Section 7 of the ESA. Due to the infrequent occurrence and short duration of activities, there would be no long-term population-level effects. There would be no impacts to designated critical habitat.
Alternative 1	
Land Based Training	Minor, short-term, and localized disturbance to terrestrial vegetation and wildlife from foot traffic, light vehicular use, and ordnance and pyrotechnics. No long-term population-level effects. Wetlands would not be affected.
Land Detonations	Temporary displacement and minor disturbance of terrestrial wildlife in the areas adjacent to DTRs. Wildlife would exhibit short-term physiological response but would return to normal behaviors shortly after disturbance. No long-term population level effects. Vegetation and wetlands would not be affected by EOD actions in established DTRs.
Aircraft Overflights	Short-term behavioral responses of wildlife, including special status species, particularly from helicopters. For grizzly bear, Canada Lynx, gray wolf, and the woodland caribou, aircraft overflights would result in a may affect, not likely to adversely affect finding under Section 7 of the ESA. Due to the infrequent occurrence and short duration of activities, there would be no long-term population-level effects. There would be no impacts to designated critical habitat.
Alternative 2 (Preferred Alternative)	
Land Based Training	Minor, short-term, and localized disturbance to terrestrial vegetation and wildlife from foot traffic, light vehicular use, and ordnance and pyrotechnics. No long-term population-level effects. Wetlands would not be affected.
Land Detonations	Temporary displacement and minor disturbance of terrestrial wildlife in the areas adjacent to DTRs. Wildlife would exhibit short-term physiological response but would return to normal behaviors shortly after disturbance. No long-term population level effects. Vegetation and wetlands would not be affected by EOD actions in established DTRs.
Aircraft Overflights	Short-term behavioral responses of wildlife, including special status species, particularly from helicopters. For grizzly bear, Canada Lynx, gray wolf, and the woodland caribou, aircraft overflights would result in a may affect, not likely to adversely affect finding under Section 7 of the ESA. Due to the infrequent occurrence and short duration of activities, there would be no long-term population-level effects. There would be no impacts to designated critical habitat.

Four terrestrial species listed under the federal Endangered Species Act have the potential to occur within the NWTRC's military operation areas (MOAs) – the grizzly bear, Canada lynx, gray wolf, and woodland caribou. As part of the EIS/OEIS process, the Navy prepared a biological evaluation (BE) for the NWTRC. The BE provides detailed descriptions and analysis of the potential impacts to all threatened

and endangered species and critical habitats protected under the ESA. The BE is used in inter-agency consultations.

The Navy initiated agency consultations in accordance with Section 7 of the act, resulting in a USFWS biological opinion. In this biological opinion, the USFWS concluded that the Navy's proposed action is not likely to adversely affect grizzly bears, Canada lynx, gray wolf, or woodland caribou.

NSW training on Indian Island could affect terrestrial vegetation which could affect shelter, nesting, and roosting areas. Because of the covert nature of Special Operations Forces, they generally use a small number of personnel, have a light footprint, and cause little noise disruption. As a result, the effects of this training would potentially result in temporary displacement of animals and may cause only brief disruptions to foraging, nesting, and/or roosting activities. The effects would be limited predominantly to wildlife that are typically found on the ground such as mammals, amphibians, reptiles, and ground nesting birds. As these activities are short-term and infrequent, there would not be any population level effects to wildlife. Overall these activities would have no significant impact on wildlife species.

Insertion/extraction activities would occur at Seaplane Base and OLF Coupeville that may affect terrestrial wildlife. Movements of personnel during these training activities would not have significant impact on vegetation or wetlands on the base that provide wildlife habitat. Personnel movements for insertion/extraction activities would not prohibit the use of habitats by birds, mammals, and reptiles once the disturbance ceased. There is significant marsh habitat at Seaplane Base and forest habitat at Seaplane Base and OLF Coupeville for neotropical migratory birds. Although some damage would occur to individual plants because of personnel movement through these areas, there would not be significant impact to these habitats that would interfere with neotropical migratory bird use.

Demolition training on land takes place in the existing DTRs at Seaplane Base and NBK-Bangor. Animals such as small mammals and reptiles in the immediate vicinity of a detonation could be susceptible to lethal injury and birds and mammals on the outer edges of the zone of influence could exhibit a short-term behavioral response. Under the Proposed Action, DTR Seaplane Base would host approximately 6 training events per month. Because of the frequent level of human presence and activity that occurs in this disturbed habitat, animals are most likely to avoid the area or flee prior to detonation. Under the Proposed Action, the number of detonations at Bangor DTR would be much less than at DTR Seaplane Base, approximately 6 per year. The wildlife in the vicinity may elicit a stronger physiological response as the activity is infrequent. While the effects of detonations in the Study Area on wildlife cannot be quantified, lethal injury because of detonations is not expected to mammals and birds that can flee the area. Mortality may occur to reptiles that are less mobile or are found underground. Given the prior use of the DTRs and the poor wildlife quality of the disturbed habitat, there may be loss of individuals with little or no effect at the population level.

Wildlife exposed to low-altitude aircraft overflights could exhibit short-term behavioral and/or physiological responses, but not to the extent where the general health of individuals or populations would be compromised. Aircraft overflights are not expected to result in chronic stress based on the short duration and infrequency of exposure.

ES 1.5.12 Cultural Resources

In this 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 would have few if

any direct adverse effects on shipwrecks or other archaeological resources. Land-based training and nearshore activities would increase and could disturb archaeological resources, but effects would be minor due to the small number of activities and/or covert nature of the activities that limit the amount of disturbance. Slight increase in land-based EOD training would 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 would be a substantial decrease in underwater EOD activities that would reduce the potential for impacts to archaeological resources and historic sites. There would 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 would not affect the historic properties of the shipwreck, and eventually all such expended materials would be covered by sediments. The Proposed Action would have a negligible to minor adverse effect and negligible effects to historic structures.

Under the Proposed Action, two of the range enhancements have the potential to cause a negative impact to usual and accustomed fishing by Native American tribes; the Portable Undersea Tracking Range (PUTR) and the underwater training minefield.

With consultation and coordination, effects on traditional cultural practices and archaeological and ethnographic sites and resources valued by tribes would change very little from those described for the No Action Alternative. For additional information about ongoing consultations, see Section 3.12. Table ES-15 summarizes the potential impacts to cultural resources.

Table ES-15: Summary of Effects – Cultural Resources

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative		
Small Boat Activities	Minor, short-term, and localized disturbance to archaeological resources are possible, but unlikely due to low number and covert nature of small boat activities.	Small boat activities would have no effect on cultural resources beyond 12 nm.
Land-based Training	Helicopter landings at OLF Coupeville and the Seaplane Base Survival Area could potentially disturb soils in the vicinity of archaeological resources, but any effects would be minor.	Land-based activities would have no effect on cultural resources beyond 12 nm.
Land and Underwater Demolition	Confined explosives would have limited concussive or noise impacts to archaeological sites. Nearest historic sites are distant from detonations and are unlikely to suffer effects. Noise effects on traditional cultural resources are possible, but not likely due to current protective measures in place during all detonations.	These land-based and inshore activities would have no effect on cultural resources beyond 12 nm.
Weapons Firing At Sea	Weapons fired at sea have the potential to cause fragments to settle on shipwrecks. However, the small quantities of expended material would not affect the historic properties of any shipwrecks.	Potential impacts would be minor due to the low density of munitions and shipwrecks beyond 12 nm.

Table ES-15: Summary of Effects – Cultural Resources (continued)

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
Alternative 1		
Small Boat Activities	Alternative 1 small boat activities that could impact cultural resources are the same as the No Action Alternative, with no increase in number of activities. Therefore, potential for impact would be the same.	Impacts generally the same as for the No Action Alternative.
Land-based Training	Helicopter landings at OLF Coupeville and the Seaplane Base Survival Area would increase only slightly over No Action levels. No additional impacts are expected.	
Land and Underwater Demolition	Alternative 1 land demolition training will increase, and underwater demolition training will decrease significantly, from 60 annual detonations, to 4. These changes in the level of training activity are expected to have no net effect on impacts to cultural resources.	
Weapons Firing At Sea	Weapons firings will increase under Alternative 1. However, more than half of all rounds that enter the ocean are small caliber. Many of the rest are fragments of their original shells. The resulting increase in small objects entering the water is not likely to affect the historic properties of any shipwrecks.	
Alternative 2 (Preferred Alternative)		
Small Boat Activities	Alternative 2 small boat activities that could impact cultural resources are the same as the No Action Alternative, with no increase in number of activities. Therefore, potential for impact would be the same.	Impacts generally the same as for the No Action Alternative.
Land-based Training	Helicopter landings at OLF Coupeville and the Seaplane Base Survival Area would increase only slightly over No Action levels. No additional impacts are expected.	
Land and Underwater Demolition	Alternative 2 land and underwater demolition training is the same as Alternative 1, therefore, the potential for impacts will be the same.	
Weapons Firing At Sea	Weapons firings will increase from the No Action Alternative under Alternative 2. However, more than half of all rounds that enter the ocean are small caliber. Many of the rest are fragments of their original shells. The resulting increase in small objects entering the water is not likely to affect the historic properties of any shipwrecks.	

ES 1.5.13 Traffic

The majority of training and test activities are located within the charted, designated military operations boundaries; hence, there would be minimal potential for conflict with non-military air and ship traffic. Air and shipping traffic within the offshore areas is sparse enough that Navy ships and aircraft can conduct their activities far from non-participants if required. Therefore, no significant impacts to traffic would occur as a result of implementation of the No Action Alternative, Alternative 1, or Alternative 2. Table ES-16 summarizes the potential impacts to traffic.

Table ES-16: Summary of Effects – Traffic

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> • Hazardous air operation effects are minimal and any possible effects are limited by confining military aircraft to the warning areas to prevent accidental contact. • Activities at Explosive Ordnance Disposal (EOD) locations do not have an appreciable effect on traffic concerns due to the temporary dispersal of traffic and current requirements and practices of safety vessels. • Military use of the offshore ocean does not create a considerable risk to impact traffic because Navy aircraft and vessels are confined to operating areas (OPAREAs) away from shipping lanes and other recreational use areas. 	<ul style="list-style-type: none"> • Impacts would be similar to those described for the No Action Alternative for territorial waters.
Alternative 1	<ul style="list-style-type: none"> • Hazardous air operation effects would be minimal and any possible effects are limited by confining military aircraft to the warning areas to prevent accidental contact. • Activities at EOD locations do not have an appreciable effect on traffic concerns due to the temporary dispersal of traffic and current requirements and practices of safety vessels. (Significant reduction in EOD underwater detonation activities from No Action Alternative.) • Military use of the offshore ocean would not create a considerable risk to impact traffic because Navy aircraft and vessels are confined to OPAREAs away from shipping lanes and other recreational use areas. 	<ul style="list-style-type: none"> • Impacts would be similar to those described for Alternative 1 for territorial waters.
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> • Hazardous air operation effects would be minimal and any possible effects are limited by confining military aircraft to the warning areas to prevent accidental contact. • Activities at EOD locations do not have an appreciable effect on traffic concerns due to the temporary dispersal of traffic and current requirements and practices of safety vessels. (Significant reduction in EOD underwater detonation activities from No Action Alternative.) • Military use of the offshore ocean would not create a considerable risk to impact traffic because Navy aircraft and vessels are confined to OPAREAs away from shipping lanes and other recreational use areas. 	<ul style="list-style-type: none"> • Impacts would be similar to those described for Alternative 2 for territorial waters.

ES 1.5.14 Socioeconomics**ES 1.5.14.1 Offshore Area**

Civilian activities currently conducted in the NWTRC include commercial shipping, commercial fishing, sport fishing/diving, and tourist-related activities. These activities make an appreciable contribution to the Pacific Northwest regional economy (see Section 3.14.1). The Navy's procedures for temporarily clearing an area of non-participants for safety purposes will not adversely affect these economic activities because displacement is of short duration. The Navy has performed military training activities within this region since World War II and has not precluded fishing or recreational uses in the NWTRC, even during peak fishing seasons. When hazardous training needs to be conducted in the Offshore Area, a Notice to

Mariners (NOTMAR) is issued or the activity is conducted within Warning Areas designated for hazardous activities. This measure provides mariners with Navy use areas in advance, which allows non-participants to select an alternate destination without appreciable impact to their activities. To help manage competing demands and maintain public access in the NWTRC, the Navy conducts its offshore activities in a manner that minimizes restrictions to commercial fisherman (Department of the Navy 2007). Similarly, activities performed within the OPAREAs rarely affect divers due to the infrequency of diving in these areas. See Section 3.14.2 for additional information. Table ES-17 summarizes the potential impacts to socioeconomics.

Table ES-17: Summary of Effects – Socioeconomics

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> • Navy activities in the areas around Whidbey Island, the EOD ranges, nearshore OPAREAs, and inland OPAREAs entail range clearance procedures and temporary civilian inconvenience during activities. Only one specific area around Whidbey Island is deemed a Restricted Area. Training activities do not have an effect on socioeconomic interests. • Limitations on recreational use of areas on a regular basis have been chosen as the least restrictive area possible for Navy activities to be conducted. • Fish and marine wildlife populations are currently at healthy population levels; commercial and recreational fishing is not affected by current Navy action. 	<ul style="list-style-type: none"> • Impacts would be similar to those described for the No Action Alternative for territorial waters.
Alternative 1	<ul style="list-style-type: none"> • Impacts generally the same as No Action Alternative. • EOD activities involving underwater demolitions will be decreasing from 60 to 4 activities per year. 	<ul style="list-style-type: none"> • Impacts would be similar to those described for Alternative 1 for territorial waters.
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> • Impacts generally the same as No Action Alternative. • EOD activities involving underwater demolitions will be decreasing from 60 to 4 activities per year. • Portable Undersea Tracking Range (temporary installation) and the permanent underwater training minefield could have negative economic impacts to commercial fishing. 	<ul style="list-style-type: none"> • Impacts generally the same as Alternative 1 for non-U.S. territorial waters.

Under Alternative 2, two of the range enhancements have the potential to cause a negative socioeconomic impact to the Offshore Area; the Portable Undersea Tracking Range (PUTR) and the underwater training minefield.

The Electronic Combat (EC) threat simulators/targets would be part of the Proposed Action in the offshore areas as well. This activity consists of a fixed radio transmitter on land and would not have any effect on socioeconomic interests in the OPAREAs. Additionally, the proposal for commercial air and surface target services would bring some economic benefit to businesses hired to haul targets.

ES 1.5.14.2 Inshore Area

Navy activities in the Inshore Area entail scheduling procedures and temporary civilian inconvenience during activities. The Navy temporarily limits public access to areas where there is a risk of injury or property damage. Locations of all popular dive sites are well documented and the Navy restricts access to certain areas within the range by notifying divers of hazardous activities through the use of NOTMARs. Navy training activities temporarily prevent civilian activities but are not expected to have a significant effect on socioeconomic interests. Only one specific area around Whidbey Island is deemed a Restricted Area. The MOAs entail overflight traffic which has only an aesthetic impact to the areas. The counties of Okanogan, Ferry, Stevens, and Pend Orielle do not have socioeconomic effects associated with Navy activities.

Under the Proposed Action, EOD underwater activities would decrease from 60 to 4. Otherwise, activities would increase by approximately 31 percent over the No Action Alternative. Activities associated with the Proposed Action would not have any new effects on socioeconomic interests; as a result, socioeconomic impacts would not occur.

ES 1.5.15 Environmental Justice and Protection of Children

The Navy is required to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States and its territories and possessions. The Navy is also required to identify and assess environmental health risks and safety risks that may disproportionately affect children. These analyses are conducted in this EIS/OEIS in Section 3.15 – Environmental Justice and Protection of Children. Potential impacts are summarized in Table ES-18.

ES 1.5.15.1 Offshore Area

No permanent human populations exist in the Offshore Area. Therefore, no disproportionate high and adverse human health or environmental effects on children or minority or low-income populations currently occur under the No Action Alternative, nor would occur under Alternative 1 or Alternative 2.

ES 1.5.15.2 Inshore Area

Navy activities occurring in Washington State have possible effects to individuals within a number of nearby counties but no disproportionate effects to minority/low-income populations or populations of children. In addition, no public health or safety impacts have been identified with regard to ongoing activities within the Inshore Area. Navy land activities account for a small percentage of total activities within the NWTRC. Activities within Puget Sound include EOD sites at Crescent Harbor, Indian Island, and NBK-Bangor. None of these activities have impacts which disproportionately affect minority/low-income populations or populations of children. The remaining activities within the Puget Sound areas are air activities, RDT&E activities, and support activities. As previously stated, Navy aircraft conduct training over much of the State of Washington in MOAs. Although the airspace floor in these areas is as low as 300 ft above the ground, most of the activities are conducted at higher altitudes with no discernable impact to the public. Therefore, the counties that lie beneath these areas are not considered for analysis in this EIS/OEIS. Based on these activities, there would be no disproportionately high and adverse human health or environmental effects of the Navy's programs, policies, or activities on minority/low-income populations or populations of children.

Under Alternative 1, the overall increase in activities from baseline (no action) to Alternative 1 would be less than 20 percent. Navy land activities account for a small percentage of total activities within the NWTRC. Activities within Puget Sound include EOD sites at Crescent Harbor, Indian Island, and NBK-

Bangor. Operational tempo from underwater EOD training would decrease significantly (from 60 to 4 annual activities) and no new activities will be added.

Under Alternative 2 (Preferred Alternative), Inshore activities would have all the components of the No Action Alternative, but the training tempo would increase. However, the increases would occur in existing areas, with no disproportionate effect on any minority or low-income groups or children.

Table ES-18: Summary of Effects – Environmental Justice and Protection of Children

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO 12114 (Non-U.S. Territorial Waters)
No Action Alternative	<p>Environmental Justice</p> <ul style="list-style-type: none"> • No permanent human populations exist in the NWTRC Ocean OPAREAs. Therefore, no disproportionate effects on minority or low-income populations currently occur. • Navy activities occurring within Puget Sound OPAREAs have possible effects to populations within a number of nearby counties. Land activities account for a small percentage of total activities within the NWTRC. Activities conducted consist of air activities, undersea EOD activities, RDT&E, and support activities. None of these activities have a disproportionate effect on populations of minority or low-income populations. • Navy activities occurring within Inland OPAREAs have possible effects to populations within a number of nearby counties. None of the proposed activities have a disproportionate effect on populations of minority or low-income populations. <p>Protection of Children</p> <ul style="list-style-type: none"> • No human populations exist in the Ocean OPAREAs. Therefore, no disproportionate risks to children currently occur. • There are no populations of children disproportionately affected by Navy activities within the Puget Sound OPAREAs. Land activities account for a small percentage of total activities within the NWTRC. Activities conducted consist of air activities, undersea EOD activities, RDT&E, and support activities. None of these locations are near populations of children that are disproportionately affected. • There are no populations of children disproportionately affected by Navy activities within the Inland OPAREAs. None of these locations are near populations of children that are disproportionately affected. 	<ul style="list-style-type: none"> • No permanent human populations exist in the NWTRC OPAREAs outside of territorial waters. Therefore, no disproportionate effects on minority or low-income populations or health and safety risks to children would occur.
Alternative 1	<ul style="list-style-type: none"> • Impacts to Environmental Justice and Protection of Children would be the same as in the No Action Alternative 	<ul style="list-style-type: none"> • Impacts to Environmental Justice and Protection of Children would be the same as in the No Action Alternative
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> • Impacts to Environmental Justice and Protection of Children would be the same as in the No Action Alternative 	<ul style="list-style-type: none"> • Impacts to Environmental Justice and Protection of Children would be the same as in the No Action Alternative

ES 1.5.16 Public Safety

Public safety issues include potential hazards inherent in flight activities, vessel movements, underwater detonations, offshore use of sonar, and onshore explosives training. It is Navy policy to prevent personal injury or property damage by observing every possible precaution in the planning and execution of all activities that occur onshore or offshore.

Impacts to public health and safety are assessed in terms of the potential of Navy training activities to injure or compromise civilians in any way. Impacts may arise from physical injury directly from hazardous activities or as an indirect result of hazardous materials expended from a training event. Stressors that would likely impact public health and safety include surface and subsurface ship movements, aircraft movements, use of explosives, torpedoes, missiles and various ordnance, lasers, expended materials, radio frequencies, aircraft noise, and use of offshore sonar that may affect divers. These stressors were identified by conducting a detailed analysis of the warfare areas, geographic location, and specific activities included in the alternatives. Several factors were considered in evaluating the effects of the Navy's activities on public safety, including proximity to the public, ownership, access control, scheduling, public notification of events, frequency of events, duration of events, range safety procedures, operational control of training events, and safety history. Based on all of these factors, the activities associated with the Proposed Action will have no significant impacts on public safety.

ES 1.5.16.1 Offshore Area

Military, commercial, institutional, and recreational activities take place in the NWTRC. The Federal Aviation Administration (FAA) has established Warning Areas (W-) for military aircraft activities; however, most of the airspace and seaspaces is available for co-use most of the time. The PACNW Ocean Surface/Subsurface OPAREA is the only range in the Northwest available for naval surface ship live firing. The PACNW OPAREA also hosts aircraft bombing exercises (not authorized in the Olympic Coast National Marine Sanctuary), several of which involve the use of laser-guided weapons. The PACNW OPAREA is used for the full range of naval ordnance. Only hazardous activities require exclusive use of an area, and these are scheduled and broadcast by the Navy through NOTMARs and Notices to Airmen (NOTAMs).

The public typically accesses the offshore ocean areas for recreational purposes such as sport fishing, sailing, boating, tourist-related activities (sightseeing and whale watching), diving, and swimming. Public access to offshore marine areas is a safety concern for the Navy because its activities occur primarily in international waters. Warning Areas 237, 570, and 93 (W-237, W-570, and W-93) are SUA lying over international waters and special use surface and subsurface training ranges where the Navy conducts hazardous activities, including missile firings, naval gunfire, and air-to-surface ordnance delivery. Commercial and recreational vessels generally are allowed to operate in the OPAREAs. During training events or exercises in these offshore areas, weapons delivery events are delayed or cancelled if range areas are not clear. Prior to issuing a "Green Range," Navy personnel must ensure that the hazard footprint of the ordnance being fired is clear of non-participating surface vessels, divers, and aircraft.

ES 1.5.16.2 Inshore Area

The Inshore Area includes air, surface, and land ranges. Several MOAs, alert areas (A-), and restricted areas (R-) exist throughout the Inshore Area of the NWTRC (Figure 3.16-1, Table 3.16-1). These areas have been identified and described in 33 CFR Parts 110, 165, and 334 as restricted to naval aircraft or vessels (as appropriate) only or as presenting a significant hazard to mariners or aviators.

Other designated surface zones within Puget Sound are not continuously restricted. When not in use by the Navy, these areas are accessible by boaters, divers, and fisherman, with nearshore anchorages available. NOTMARs and NOTAMs are issued about hazards of the operation of vessels and aircraft in

the vicinity of the NWTRC. Among the surface ranges used by the Navy are those in which EOD personnel conduct underwater demolition training. This training takes place at Crescent Harbor Underwater EOD Range, Indian Island Underwater EOD Range, and Floral Point Underwater EOD Range.

In addition to the air and surface areas, several land ranges are in use in the Inshore Area. On-land DTRs are located at Seaplane Base and at NBK–Bangor.

ES 1.5.16.3 Summary of Potential Public Safety Effects

All of the Proposed Action activities, whether resulting from the new range enhancements or an increase of existing activities, have either been conducted previously in the NWTRC, or have been conducted for years in other Navy range complexes. As such, they present no unique safety hazards. The complete analysis of potential public safety issues is presented in Section 3.16 – Public Safety.

Table ES-19: Summary of Effects – Public Safety

Alternative	NEPA (On-Land and U.S. Territorial Waters)	EO12114 (Non-U.S. Territorial Waters)
No Action Alternative	<ul style="list-style-type: none"> Range clearance procedures are implemented prior to activities for both land and water range areas. Activities will not proceed unless the range is clear of non-participants. Therefore, there is no risk to public safety. 	<ul style="list-style-type: none"> Range clearance procedures are implemented prior to activities for range areas in non-U.S. territorial waters. Activities will not proceed unless the range is clear of non-participants. Therefore, there is no risk to public safety.
Alternative 1	<ul style="list-style-type: none"> Impacts to public safety would be the same as the No Action Alternative. 	<ul style="list-style-type: none"> Impacts to public safety would be the same as the No Action Alternative.
Alternative 2 (Preferred Alternative)	<ul style="list-style-type: none"> Impacts to public safety would be the same as the No Action Alternative. 	<ul style="list-style-type: none"> Impacts to public safety would be the same as the No Action Alternative.

ES 1.6 CUMULATIVE IMPACTS

The analysis of cumulative impacts considers the effects of the Proposed Action in combination with other past, present, and reasonably foreseeable future actions taking place in the project area, regardless of what agency or person undertakes these actions. This EIS/OEIS analyzes cumulative impacts associated with implementation of Navy-sponsored activities and other non-Navy activities in the region. Other activities included fishing, commercial and recreational marine traffic, ocean pollution, scientific research, and commercial and general aviation. Potential cumulative impacts resulting from other relevant projects (such as those listed above) combined with the Proposed Action addressed in this EIS/OEIS were determined to be less than significant.

ES 1.7 MITIGATION MEASURES

NEPA regulations require an EIS to include appropriate mitigation measures not already included in the Proposed Action or alternatives (40 C.F.R. § 1502.12(f)). Each of the alternatives, including the Proposed Action considered in this EIS/OEIS, already includes protective or mitigation measures intended to reduce environmental effects of Navy activities. Measures, such as current requirements and practices, are discussed in the resource-by-resource analysis, and also are addressed in detail in Chapter 5 – Mitigation Measures.

As part of its commitment to sustainable use of resources and environmental stewardship, the Navy incorporates measures that are protective of the environment into all of its activities. These include employment of current requirements and practices, adoption of conservation recommendations, and other protective measures that mitigate the impacts of Navy activities on the environment. Some of these measures are generally designed to apply to certain geographic areas during certain times of year or for specific types of Navy training. Conservation measures covering habitats and species occurring in the NWTRC have been developed through various environmental analyses conducted by the Navy for land and sea ranges and adjacent coastal waters. The discussion in Chapter 5 describes mitigation measures applicable to Navy activities in the NWTRC.

ES 1.8 OTHER REQUIRED CONSIDERATIONS

ES 1.8.1 Possible Conflicts with Objectives of Federal, State, and Local Plans Policies and Controls

Based on an evaluation with respect to consistency with statutory obligations, the Navy's alternatives including the Proposed Action for the NWTRC EIS/OEIS do not conflict with the objectives or requirements of Federal, State, regional, or local plans, policies, or legal requirements. Chapter 6, Table 6-1 provides a summary of environmental compliance requirements that may apply.

ES 1.8.2 Relationship between Short-term Uses and Long-term Productivity

The Proposed Action would result in both short-term and long-term environmental effects. However, the Proposed Action would not be expected to result in any impacts that would reduce environmental productivity, permanently narrow the range of beneficial uses of the environment, or pose long-term risks to health, safety or the general welfare of the public. The Navy is committed to sustainable range management, including co-use of the NWTRC with the general public and commercial interests to the extent practicable consistent with accomplishment of the Navy mission and in compliance with applicable law. This commitment to co-use enhances the long-term productivity of the NWTRC.

ES 1.8.3 Irreversible or Irretrievable Commitment of Resources

For the alternatives including the Proposed Action, most resource commitments are neither irreversible nor irretrievable. Most impacts are short-term and temporary. However, implementation of the Proposed Action would require the use of fuels by aircraft, ships, and ground-based vehicles. Total fuel consumption would increase and this nonrenewable resource would be considered irreversibly lost.

ES 1.8.4 Energy Requirements and Conservation Potential

Increased training and testing activities in the NWTRC for the Alternatives, including the Proposed Action, would result in an increase in energy demand over the No Action Alternative. Energy requirements would be subject to established energy conservation practices. The use of energy sources has been minimized wherever possible without compromising safety, training, or testing activities. No additional conservation measures related to direct energy consumption by the proposed activities are identified.

ES 1.8.5 Natural or Depletable Resource Requirements and Conservation Potential

Resources that will be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels. Pollution prevention is an important component of mitigation of the alternatives' adverse impacts. To the extent practicable, pollution prevention considerations are included. Sustainable range management practices are in place that protect and conserve natural and cultural resources, and allow for preservation of access to training areas for current and future training requirements, while addressing potential encroachments that threaten to impact range capabilities.

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