Executive Summary

Supplemental Environmental Impact Statement/ Overseas Environmental Impact Statement Northwest Training and Testing

TABLE OF CONTENTS

List of Figures

List of Tables

ES Executive Summary

ES.1 Introduction

The United States (U.S.) Department of the Navy (Navy) has prepared this Final Supplemental Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) (hereinafter referred to as Supplemental) to supplement the impact analysis contained in the 2015 *Northwest Training and Testing Final Environmental Impact Statement/Overseas Environmental Impact Statement* (U.S. Department of the Navy, 2015) (hereinafter referred to as the 2015 NWTT Final EIS/OEIS) pursuant to 40 Code of Federal Regulations (CFR) Section 1502.9(c). This Supplemental considers ongoing and future activities conducted at sea, updates training and testing requirements, incorporates new information from an updated acoustic effects model, updates marine mammal density data, and incorporates evolving and emergent best available science. It also supports the issuance of federal regulatory permits and authorizations under the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA) using the most current and best available science and analytical methods to assess potential environmental impacts on the species covered by those regulations.

ES.2 Purpose of and Need for Proposed Military Readiness Training and Testing Activities

As identified in the 2015 NWTT Final EIS/OEIS, the purpose of the Proposed Action is to ensure that the Navy meets its statutory mission, which is to maintain, train, and equip combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas.

ES.3 Scope and Content of the Environmental Impact Statement/Overseas Environmental Impact Statement

In this Supplemental, the Navy reanalyzed training and testing activities that could potentially affect the human environment. Since the completion of the 2015 NWTT Final EIS/OEIS, new information has become available and is incorporated in this analysis. New information specifically addressed in this Supplemental includes updates to training and testing requirements, an updated acoustic effects model, updated marine mammal density data, and evolving and emergent best available science. The range of alternatives in this Supplemental includes the No Action Alternative and two action alternatives. In this Supplemental, the Navy analyzes direct, indirect, cumulative, short-term, and long-term impacts, and the irreversible and irretrievable commitment of resources that may result from the Proposed Action. The Navy is the lead agency for the Proposed Action and is responsible for the scope and content of this Supplemental. The U.S. Coast Guard is a cooperating agency as this document assesses potential impacts of U.S. Coast Guard activities that support the Navy and occur in the Study Area. The National Oceanic Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) is serving as a cooperating agency because the scope of the Proposed Action and alternatives involve activities that have the potential to impact protected resources under their jurisdiction by law and special expertise, including marine mammals, threatened and endangered species, and Essential Fish Habitat. In addition, NOAA's Office of National Marine Sanctuaries has the authority to manage the Olympic Coast National Marine Sanctuary under the National Marine Sanctuaries Act (16 United States Code [U.S.C.] 1431 et seq.). NOAA's authorities and special expertise are based on their statutory responsibilities under the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 et seq.), the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 et seq.), the Magnuson-Stevens Fishery Conservation and Management Act, and the National Marine Sanctuaries Act (16 U.S.C. sections 1431-1445c-1). In addition, NMFS, in accordance with 40 CFR 1506.3 and 1505.2, intends to adopt this Supplemental and issue a separate Record of Decision associated with its decision to grant or deny the Navy's request for

an incidental take authorization pursuant to Section 101(a)(5)(A) of the MMPA and the regulatory requirements of 50 CFR section 216 et seq.

In accordance with the Council on Environmental Quality (CEQ) Regulations, 40 CFR part 1505.2, the Navy will issue a Record of Decision (ROD) that provides the rationale for choosing one of the alternatives.

ES.3.1 Final Supplemental Environmental Impact Statement/Overseas Environmental Impact Statement

This Final Supplemental was prepared to assess potential impacts of the Proposed Action on the environment. The Proposed Action in this Supplemental reflects changes to the Proposed Action presented in the 2015 NWTT Final EIS/OEIS, for which a ROD was issued to support training and testing activities. Proposed military readiness activities are generally consistent with those at-sea activities analyzed in the 2015 NWTT Final EIS/OEIS and are representative of activities the military has been conducting in the Study Area for decades. This Final Supplemental assessed potential impacts of all the alternatives (Alternative 1, Alternative 2, and the No Action Alternative).

ES.4 Proposed Action and Alternatives

The Navy proposes to continue conducting military readiness training and testing activities throughout the NWTT Study Area (Figure ES-1). The activities associated with the Proposed Action are to be conducted at sea and select Navy pierside and harbor locations, as they were in the 2015 NWTT Final EIS/OEIS. These proposed activities are generally consistent with those at-sea activities analyzed in the 2015 NWTT Final EIS/OEIS. In order to achieve and maintain Fleet readiness through this Supplemental, the Navy

- analyzes at-sea activities necessary to meet readiness requirements beyond 2020 and into the reasonably foreseeable future, including any changes to those activities previously analyzed, and reflects the most up-to-date compilation of training and testing activities deemed necessary to accomplish military readiness requirements;
- adjusts (both increases and decreases) various military readiness activities from the 2015 NWTT Final EIS/OEIS to the level needed to meet readiness requirements beyond 2020 and into the reasonably foreseeable future;
- re-analyzes potential impacts when needed to incorporate new information or new stressors;
- updates the environmental impact analyses in the 2015 NWTT Final EIS/OEIS and its supporting documents to account for changes to tempo of activity (including discontinuation of some activities assessed in 2015), renaming or combining related types of activities, and assessing new activities, such as those involving high-energy lasers, to enable the Navy to adopt new technology and capabilities;
- updates environmental analyses with the best available science and most current acoustic analysis methods to evaluate the potential effects of military readiness activities on the marine environment; and
- supports reauthorization of incidental takes of marine mammals under the MMPA and incidental takes of threatened and endangered marine species under the ESA.

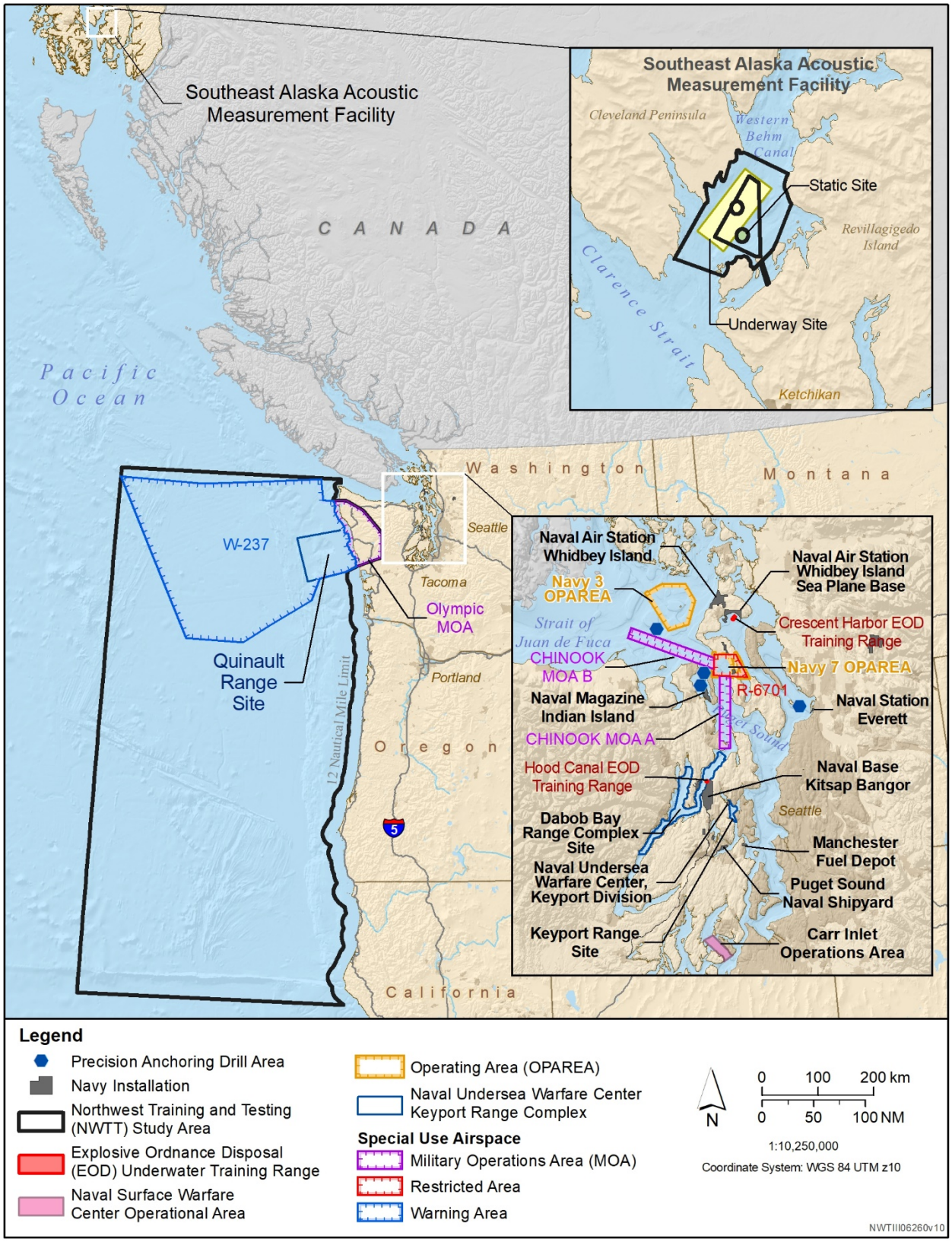

Figure ES-1: Northwest Training and Testing Study Area

ES.4.1 No Action Alternative

The No Action Alternative is required by CEQ regulations as a baseline against which the impacts of the Proposed Action are compared. CEQ guidance identifies two approaches in developing the No Action Alternative (46 *Federal Register* 18026). One approach for activities that have been ongoing for long periods of time is for the No Action Alternative to be thought of in terms of continuing the present course of action, or current management direction or intensity, such as the continuing Navy training and testing at sea in the Study Area at current levels, even if renewed authorizations under the MMPA and ESA are required. Under this approach, which was used in the 2015 NWTT Final EIS/OEIS, the analysis compares the effects of continuing current activity levels (i.e., the "status quo") with the effects of the Proposed Action. The second approach depicts a scenario where no authorizations or permits are issued, in which the Proposed Action does not take place, and the resulting environmental effects from taking no action are compared with the effects of implementing the proposed action. The Navy applied the second approach in this Supplemental.

Cessation of military at-sea training and testing activities in the NWTT Study Area would mean that the Navy would not meet its statutory requirements and would be unable to properly defend itself and the United States from enemy forces, unable to successfully detect enemy submarines, and unable to safely and effectively use its weapons systems or defensive countermeasures. Navy personnel would essentially not obtain the unique skills or be prepared to safely and effectively use sensors, weapons, and technologies in realistic scenarios required to accomplish the overall mission. Consequently, the No Action Alternative is unreasonable because it does not meet the purpose and need.

ES.4.2 Alternative 1 (Preferred Alternative)

This Alternative consists of an adjustment from the level of military readiness activities analyzed in the 2015 NWTT Final EIS/OEIS, accounting for changes in the types and tempo (increases or decreases) of activities necessary to meet current and future military readiness requirements beyond 2020.

- **Adjustments to Tempo of Training and Testing Activities.** This alternative includes changes to training and testing requirements necessary to accommodate current and future readiness requirements, including new at-sea activities as well as activities subject to previous analysis that are currently ongoing and have historically occurred in the Study Area.

Alternative 1 reflects a level of training and testing activities to be conducted, with adjustments from the 2015 NWTT Final EIS/OEIS, that account for changes in the types and tempo of activities necessary to meet current and future military readiness requirements beyond 2020.

ES.4.3 Alternative 2

Alternative 2 consists of all activities and the same type of training and testing activities that would occur under Alternative 1. Alternative 2 also considers an increase in tempo of some training and testing activities. Alternative 2 reflects the maximum number of training and testing activities that could occur every year. This alternative allows for the greatest flexibility for the Navy to maintain readiness when considering potential changes in the national security environment, fluctuations in training and deployment schedules, and anticipated global demands.

ES.5 Summary of Environmental Effects

Environmental effects that might result from the implementation of the Navy's Proposed Action have been analyzed in this Supplemental. Physical resources that were considered for re-evaluation in this

Supplemental are the same as those that were analyzed in the 2015 NWTT Final EIS/OEIS and include sediments and water quality (Section 3.1) and air quality (Section 3.2). Biological resources (including threatened and endangered species) considered include marine habitats (Section 3.3), marine mammals (Section 3.4), sea turtles (Section 3.5), birds (Section 3.6), marine vegetation (Section 3.7), marine invertebrates (Section 3.8), and fishes (Section 3.9). Human resources considered in this Supplemental include cultural resources (Section 3.10), American Indian and Alaska Native traditional resources (Section 3.11), socioeconomic resources and environmental justice (Section 3.12), public health and safety (Section 3.13), protection of children and environmental justice (Section 3.12 and Section 3.13), and cumulative impacts (Chapter 4).

New information specifically addressed in this Supplemental includes updates to military readiness requirements (Chapter 2, Description of Proposed Action and Alternatives), an updated acoustic effects model (U.S. Department of the Navy, 2018), updated marine mammal density data (U.S. Department of the Navy, 2019), and evolving and emergent science.[1] The Navy and NMFS continue to apply the best available science to all impact analyses in this Supplemental. Because of the significance of acoustics and explosives as potential stressors to marine species, and in light of new research and criteria related to acoustics and explosives, the Navy's approach to acoustic and explosives analysis used in this Supplemental is updated. For a discussion on differentiating sound and noise, see Appendix D (Acoustic and Explosive Concepts), Section D.1.2 (Signal Versus Noise). Also, there have been changes in the energy stressors analyzed in this Supplemental (Section 3.0.3.3, Energy Stressors).

Table ES-1 summarizes the potential environmental impacts of the Proposed Action. All sections of the 2015 NWTT Final EIS/OEIS were reviewed to determine if there was relevant new science that needed to be updated/incorporated into this Supplemental. To the extent there was new science, it is reflected in each of the sections in Chapter 3 (Affected Environment and Environmental Consequences). There was also a re-assessment of effects determinations from the 2015 NWTT Final EIS/OEIS in each section of Chapter 3 (Affected Environment and Environmental Consequences).

[1] For the 2015 NWTT Final EIS/OEIS, the Navy used a new modeling system known as the Navy Acoustics Effects Model and marine mammal density information, developed by the Navy in cooperation with NMFS, that applied the best available information at the time. The Navy Acoustics Effects Model has been refined, marine mammal density estimates have been updated, and NMFS published new criteria in 2018 which have been incorporated into the model analysis.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2

Resource Category	Summary of Impacts
Section 3.1 Sediments and Water Quality	The Navy considered all stressors that could potentially impact sediments and water quality as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would result in unchanged or slightly improved sediments and water quality. **Alternative 1 (Preferred Alternative):** • Explosives and explosives byproducts, metals, chemicals, and other materials expended during training and testing described in this Supplemental could result in short-term and long-term impacts on sediments and water quality. Some chemical, physical, or biological changes in sediment or water quality could be measurable, but most would be negligible. Regulatory thresholds and guidelines established for measuring impacts on sediment and water quality would not be exceeded. **Alternative 2:** • The number of training and testing activities with the potential to impact sediments and water quality under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase as compared to Alternative 1 would have no appreciable change on the impact conclusions as summarized above under Alternative 1. Regulatory thresholds and guidelines established for measuring impacts on sediments and water quality would not be exceeded.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.2 Air Quality	The Navy considered all stressors that could potentially impact air quality as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would not measurably improve air quality in the Study Area. **Alternative 1 (Preferred Alternative):** • All of the air emissions sources proposed are mobile sources and do not impact the current attainment status of the Air Quality Control Regions in the Study Area. Therefore, changes to air quality under Alternative 1 would be considered minor and localized; changes to air quality from hazardous air pollutants are not expected to be detectable. **Alternative 2:** • The number of training and testing activities under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase as compared to Alternative 1 would have no appreciable change on the impact conclusions as summarized above under Alternative 1; changes to air quality from hazardous air pollutants are not expected to be detectable.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.3 Marine Habitats	The Navy considered all stressors that could potentially impact marine habitats as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for impacts on marine habitats from training and testing activities, but would not measurably improve the condition of marine habitats throughout the Study Area. **Alternative 1 (Preferred Alternative):** • Under Alternative 1, most explosives would occur at or near the ocean surface, minimizing impacts to benthic habitat. Explosives use at or near the seafloor would occur in previously disturbed soft bottom areas where explosives have been used for decades. Impacts on marine habitats from physical disturbance and strike stressors under Alternative 1 would be minimal and recoverable because (1) the activities that could come into contact with marine habitats would be located in previously disturbed areas; (2) most activities and local disturbances of the surface water are short term in nature, with some temporary increase in suspended sediment in shallow areas; (3) sand substrate would be expected to shift back following a disturbance through tidal energy or storm-generated waves; (4) in-water devices are deployed at depths where they would not likely come in contact with marine habitat; and (5) Navy protective measures are implemented. Most military expended materials would be released in the open ocean, where substrates would primarily be clays and silts. Because of their small total footprint size in the Inland Waters, military expended materials would not be expected to change the habitat structure. Impacts from seafloor devices would be minimal and recoverable because they would be used in previously disturbed areas. Therefore, impacts to marine habitats from explosives, physical disturbance and strike, military expended materials, and seafloor devices would be negligible. **Alternative 2:** • The number of training and testing activities under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase as compared to Alternative 1 would have no appreciable change on the impact conclusions as summarized above under Alternative 1 for marine habitats; impacts to marine habitats from explosives, physical disturbance and strike, military expended materials, and seafloor devices would be negligible.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.4 Marine Mammals	The Navy considered all stressors that could potentially impact marine mammals as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for impacts on marine mammals that may result from training and testing activities. **Alternative 1 (Preferred Alternative):** • The use of sonar and other transducers have the potential to expose marine mammals to sound-producing activities that would present risks to individual marine mammals that could include temporary or permanent hearing threshold shift, auditory masking, physiological stress, or behavioral responses. A small number of minor to moderate behavioral reactions or temporary hearing threshold shifts to an individual animal over the course of a year are unlikely to have any significant costs or long-term consequences for that individual. Exposure to vessel noise, aircraft noise, and weapon noise would be brief and transient in nature. While behavioral reactions are possible, they are unlikely to lead to substantial costs or long-term consequences for individuals or populations. Considering these factors and the mitigation measures that would be implemented as described in Chapter 5 (Mitigation), long-term consequences for the species or stocks would not be expected. • The use of explosive munitions in the water or near the water's surface present a risk to marine mammals located in close proximity to the explosion, because the resulting shock waves can cause injury or result in the death of an animal. If a marine mammal is located farther from an explosion, the impulsive, broadband sounds introduced into the marine environment may cause permanent or temporary hearing threshold shifts, auditory masking, physiological stress, or behavioral responses. Because most estimated impacts from explosions are behavioral responses or temporary hearing threshold shifts, and because the numbers of marine mammals potentially impacted by explosives are small as compared to each species' respective abundance, long-term consequences for the species or stocks would not be expected.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.4 Marine Mammals (continued)	• The use of in-water electromagnetic devices and high-energy lasers have the potential to result in impacts on marine mammals. The likelihood and magnitude of energy impacts depends on the proximity of marine mammals to the activity. Based on the relatively weak strength of the electromagnetic field created by Navy activities, a marine mammal would have to be in close proximity for there to be any effect, and impacts on migrating behaviors and navigation are not anticipated. Statistical probability analyses demonstrate with a high level of certainty that a marine mammal would not be struck by a high-energy laser. Activities using in-water electromagnetic devices or high-energy lasers are temporary and localized in nature, and may result in short-term and minor impacts on individuals, but would not result in long-term impacts on marine mammal populations. • The use of vessels, in-water devices, military expended materials, and seafloor devices have the potential to result in physical disturbance and strike impacts on marine mammals. The potential for impacts mainly depends on the proximity of the vessel, device, or expended material to a marine mammal or group of marine mammals. Since the Navy does not anticipate a substantive change in the level of vessel use for training and testing compared to the level of vessel use over the previous several decades, the potential for striking a marine mammal with a vessel, device, or expended material is considered low. Physical disturbance of individual marine mammals due to vessel movements may also occur, but any stress response associated with avoidance behavior would not be severe enough to have long-term consequences for individual marine mammals. There are no recorded or reported instances of marine mammals being struck or disturbed by in-water devices; therefore, impacts on individuals or long-term consequences to marine mammal populations are not anticipated from the use of in-water devices. Potential impacts from military expended materials and seafloor devices are determined through statistical probability analyses. These analyses suggest a very low potential for marine mammals to be struck by expended materials or seafloor devices. Long-term consequences to marine mammal populations from vessels, in-water devices, military expended materials, and seafloor devices associated with Navy training and testing activities are not anticipated.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.4 Marine Mammals (continued)	• The use of wires, cables, decelerators/parachutes, and biodegradable polymers would have the potential to result in impacts on marine mammals through entanglement. The potential for impacts is dependent on the probability that a marine mammal would encounter an expended item, the physical properties of the item, and the likelihood that a marine mammal could become entangled in a particular item. The physical characteristics (e.g., strength, flexibility, length) of wires and cables and decelerators/parachutes suggest that, although unlikely, it would be possible for a marine mammal to become entangled in these items. However, there have been no known instances of entanglement of any marine mammals involving the use of wires and cables associated with Navy training and testing activities. Unlike other entanglement stressors, biodegradable polymers only retain their strength for a relatively short period of time; therefore, the potential for entanglement by a marine mammal would be limited to a very brief period before the polymer deteriorates. The longer the biodegradable polymer remains in the water, the weaker and more brittle it becomes, making it increasingly likely to break. Short-term impacts on individual marine mammals and long-term impacts on marine mammal populations from entanglement associated with Navy training and testing activities are not anticipated. • Use of military expended materials have the potential to result in impacts on marine mammals due to ingestion of expended materials by marine mammals. Marine mammals that forage along the water surface or within the water column are less likely to encounter ingestion stressors as they sink through the water column to the seafloor. Most expended materials that would remain floating or suspended within the water column are typically too small to pose a risk of intestinal blockage to any marine mammal that encounters them. Bottom-feeding marine mammals would be more likely to encounter expended materials that have already sunk to the seafloor. In the unlikely event that a marine mammal encounters and ingests an expended item, the individual may be negatively affected if the material becomes lodged in the digestive tract. The likelihood that a marine mammal would encounter and then ingest a military expended item associated with Navy training and testing activities is considered low. Short-term impacts on individual marine mammals and long-term consequences to marine mammal populations from expended materials associated with Navy training and testing activities are not anticipated.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.4 Marine Mammals (continued)	• Marine mammals have the potential to be exposed to several secondary impacts associated with Navy training and testing activities in the Study Area. These secondary impacts, which include (1) explosives, (2) explosives byproducts and unexploded ordnance, (3) metals, (4) chemicals, and (5) transmission of marine mammal diseases and parasites, would result from direct impacts on marine mammal habitat or an effect on prey availability in the Study Area. In-water explosions have the potential to injure or kill prey species; however, based on the conclusions in Section 3.3 (Marine Habitats), Section 3.8 (Marine Invertebrates), and 3.9 (Fishes), impacts would not substantially impact prey availability. Explosives byproducts encased in unexploded munitions residing on the seafloor are not expected to result in any impacts on marine mammals. In the event that a marine mammal encounters an unexploded munition on the seafloor that is small enough to ingest, and ingests the item, the animal would likely reject the item, because it is not a familiar prey item. As described in Section 3.1 (Sediments and Water Quality), explosives byproducts and unexploded munitions would have no lasting or meaningful effects on water quality, would therefore not impact marine mammal habitat, and would not constitute a secondary impact on marine mammals. Metals are introduced into the water and sediments from targets, munitions, and other expended materials. Evidence from a number of studies indicate that elevated metal concentrations are localized to the immediate vicinity of the degrading item and that no bioaccumulation of metals was observed in studies specifically designed to look for bioaccumulation of metals. Other types of chemicals (e.g., fuel used by torpedoes and associated combustion products) would be introduced into marine mammal habitat. These chemicals would either quickly become undetectable or would have only a minimal and localized impact on sediments and water quality in the Study Area. As described in Section 3.1 (Sediments and Water Quality), there is no evidence that chemicals originating from Navy activities would alter water quality to an extent that would result in overall habitat degradation for marine mammals. Transmission of marine mammal diseases and parasites from the Navy's trained marine mammals used in training activities analyzed in this document to wild marine mammals in the Study Area is unlikely, because the Navy adheres to strict protocols to prevent these types of impacts. Secondary impacts on marine mammals from Navy training and testing activities in the Study Area are not expected to have short-term or long-term impacts on individual marine mammals or on marine mammal populations. **Alternative 2:** • The number of training and testing activities under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase as compared to Alternative 1 would have no appreciable change on the impact conclusions as summarized above under Alternative 1 for marine mammals.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.5 Sea Turtles	The Navy considered all stressors that could potentially impact sea turtles as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for impacts on sea turtles, but would not measurably improve the status of sea turtle populations. **Alternative 1 (Preferred Alternative):** • The use of sonar and other transducers, explosives, aircraft, vessels, and weapons have the potential for limited impacts on sea turtles because sea turtles have limited hearing abilities. If a sea turtle is close enough to a source using a frequency within a sea turtle's hearing range, the sea turtle may exhibit short-term behavioral reactions or may exhibit no reaction at all. No long-term consequences to sea turtle populations would be expected. • In-water electromagnetic devices are not expected to result in population-level impacts for sea turtles due to the low-intensity, localized potential impact area, and short duration of use. The use of high-energy lasers associated with testing activities are not expected to impact sea turtles as a result of the very low probability of a direct strike by a high-energy laser. • Use of vessels and in-water devices, military expended materials, and seafloor devices may cause short-term disturbance to an individual turtle within the Study Area due to sea turtles striking or being struck by vessels, in-water devices, military expended materials, or seafloor devices. However, due to the low numbers of sea turtles potentially impacted by these activities, population-level effects are unlikely. • Entanglement through the use of wires and cables, and decelerators/parachutes may cause short-term or long-term disturbance to an individual sea turtle. However, due to the physical characteristics of wires, cables and decelerators/parachutes, combined with the behavior of the species, population-level impacts are not expected. Sea turtles do not occur where biodegradable polymer testing would take place, so that activity would not affect sea turtles.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.5 Sea Turtles (continued)	• The use of military expended materials may cause short-term or long-term disturbance to an individual sea turtle due to ingestion of munitions and military expended materials other than munitions used in training activities. However, the potential impacts of exposure to munitions are not expected to result in population-level impacts. • Sea turtles would be exposed to multiple secondary causes of impact associated with Navy training and testing activities in the Study Area. These stressors include (1) explosives and explosives byproducts (including unexploded ordnance), (2) metals, (3) chemicals, and (4) other materials. In addition to directly affecting turtles and turtle habitat, underwater explosions could affect other species in the food web, including prey species upon which sea turtles feed. Any impacts from explosives would be temporary, only occurring during activities involving explosives, with no lasting effect on prey availability or the pelagic food web. Potential impacts from explosives and explosives byproducts, metals, chemicals, or other materials would be inconsequential and not detectable for these training and testing activities. Several Navy training and testing activities introduce potentially harmful chemicals and other materials into the marine environment. Various life stages of sea turtles could be indirectly impacted by chemicals and other materials via sediment near the object (e.g., within a few inches), but these potential effects would diminish rapidly as the chemicals degrade to less toxic elements and compounds. Although sea turtles may be exposed to contaminants in sediments and in the water column, and may have ingested contaminated sediments or prey items that may also have been exposed to contaminants in water and sediments, it is extremely unlikely that sea turtles would be indirectly impacted by explosives and explosives byproducts, metals, chemicals or other materials released during training and testing activities. **Alternative 2:** The number of training and testing activities under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase as compared to Alternative 1 would have no appreciable change on the impact conclusions as summarized above under Alternative 1 for sea turtles.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.6 Birds	The Navy considered all stressors that could potentially impact birds as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for impacts on birds, but would not measurably improve the status of bird populations. **Alternative 1 (Preferred Alternative):** • The use of sonar and other transducers associated with training and testing activities could expose diving bird species to in-water sound sources. Similarly, aircraft noise, vessel noise, and weapons firing noise could impact birds located above the water's surface. Most sonar use, aircraft noise, vessel noise, and weapons firing noise occur offshore, so the chance for an exposure would be low to birds located nearshore, where bird occurrence is more likely. In addition, impacts to individuals, if any, are expected to be minor and limited; therefore, no long-term consequences to individuals are expected. • The use of explosives during training and testing activities could result in a disturbance to a bird's behavior, or lethal or non-lethal injuries. Marbled murrelets may be exposed to explosives during mine countermeasure and neutralization testing proposed in the Offshore Area. Explosives for training activities are used either far offshore where bird occurrence is less likely or on established ranges where the explosive activity is closely monitored. Short-tailed albatross can occur far offshore, but their sparse populations and the low number of offshore explosive activities would make an explosive encounter with a short-tailed albatross unlikely. Marbled murrelet occurrence near shore and in the Inland Waters could expose them to underwater detonation training activities. However, these activities are closely monitored before, during, and after each detonation, with no recorded impact to marbled murrelets. • The use of in-water electromagnetic devices would not impact bird species because of the low strength of the electromagnetic field, the small range of the electromagnetic field, and the short exposure that any bird could experience. Impacts from the use of in-air electromagnetic devices (primarily radar) would be very unlikely due to the dispersed nature of the activities that include radar use. The use of high-energy lasers is extremely unlikely to result in a direct strike of a marine bird.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.6 Birds (continued)	• Birds are unlikely to be impacted by physical disturbance and strike stressors (aircraft, aerial targets, vessels, in-water devices, and military expended materials). • Birds are unlikely to be entangled by guidance wires and fiber optic cables, which would rapidly sink in the water column. Decelerators and parachutes, which have weights and metal clips attached to them that facilitate their descent to the seafloor and minimize the time when entanglement could occur, would be unlikely to entangle a bird. Biodegradable polymers retain their strength for a relatively short period of time; therefore, the potential for entanglement by a marine bird would be limited. Furthermore, the longer the biodegradable polymer remains in the water, the weaker it becomes, making it more brittle and likely to break. • The use of military expended materials and munitions may cause short-term or long-term disturbance to an individual bird due to ingestion of munitions used in training activities. However, the potential impacts of exposure to munitions are not expected to result in population-level impacts. • Stressors from training and testing activities could pose secondary or indirect impacts on birds via habitat, sediment, and water quality. These include (1) impacts on habitats for birds, and (2) impacts on prey availability. Secondary impacts from underwater explosions would be temporary, and no lasting impact on prey availability or the pelagic food web would be expected. Training and testing activities would not result in a decrease in the quantity or quality of bird populations or habitats, or prey species and habitats. Although metals are introduced into seawater and sediments as a result of Navy training and testing activities, it is extremely unlikely that birds would be indirectly impacted by these metals via the water. **Alternative 2:** The number of training and testing activities under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase as compared to Alternative 1 would have no appreciable change on the impact conclusions as summarized above under Alternative 1 for birds.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.7 Marine Vegetation	The Navy considered all stressors that could potentially impact marine vegetation as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for impacts of these training and testing activities on marine vegetation, but would not measurably improve the status of marine vegetation in the Study Area. **Alternative 1 (Preferred Alternative):** • Physical disturbance and strike and the use of underwater explosives could affect marine vegetation by destroying individual plants or damaging parts of plants, but are not expected to result in detectable changes in survival or propagation, and are not expected to result in population-level impacts on marine plant species. Changes in sediment and water quality due to these training and testing activities are not likely to be detectable; thus, no detectable changes are expected in marine vegetation growth, survival, propagation, or population-level impacts. • Neither state or federal standards or guidelines for sediments nor water quality would be violated by proposed training and testing activities. Because of these conditions, population-level impacts on marine vegetation are likely to be inconsequential and undetectable. Therefore, because these standards and guidelines are structured to protect human health and the environment, and the proposed activities do not violate them, no indirect impacts are anticipated on marine vegetation from the training and testing activities proposed by Alternative 1. **Alternative 2:** • The number of training and testing activities under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase as compared to Alternative 1 would have no appreciable change on the impact conclusions as summarized above under Alternative 1 for marine vegetation.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.8 Marine Invertebrates	The Navy considered all stressors that could potentially impact marine invertebrates as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for impacts on marine invertebrates from these training and testing activities, but would not measurably improve the status of invertebrate populations or subpopulations. **Alternative 1 (Preferred Alternative):** • The use of sonar and other transducers, in-water electromagnetic devices, high-energy lasers, wires and cables, parachutes/decelerators, and military expended materials of ingestible size associated with training and testing activities would have a negligible impact on marine invertebrate species. • Use of explosives, vessels and in-water devices, military expended materials and seafloor devices, associated with training and testing activities may impact individual marine invertebrates and groups of marine invertebrates. However, these activities are unlikely to impact populations or subpopulations of marine invertebrates. • Stressors that could pose secondary or indirect impacts on marine invertebrates include (1) explosives and explosives byproducts; (2) metals; (3) chemicals; and (4) other materials such as targets, chaff, and plastics. Indirect impacts of explosives and unexploded ordnance on marine invertebrates via water are likely to be inconsequential and not detectable. Concentrations of metals and chemicals in water are extremely unlikely to be high enough to cause injury or mortality to marine invertebrates; therefore, indirect impacts of metals or chemicals via water absorption are likely to be inconsequential and not detectable. The only other material that could impact marine invertebrates via sediment is plastics. Marine invertebrates are most at risk from potentially harmful chemicals in plastics via ingestion or bioaccumulation. Marine invertebrates could be indirectly impacted by chemicals from plastics but, absent bioaccumulation, these impacts would be limited to ingestion of the material. Because of these conditions, population-level impacts on marine invertebrates attributable to Navy-expended materials are likely to be inconsequential and not detectable. **Alternative 2:** • The number of training and testing activities under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase as compared to Alternative 1 would have no appreciable change on the impact conclusions as summarized above under Alternative 1 for marine invertebrates.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.9 Fishes	The Navy considered all stressors that could potentially impact fishes as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for impacts from these training and testing activities on fishes, but would not measurably improve the status of fish populations or subpopulations. **Alternative 1 (Preferred Alternative):** • The use of sonar and other transducers, explosives, and in-water electromagnetic devices, may affect fishes. Impacts, however, are expected to be temporary and infrequent as most activities would be temporary, localized, and infrequent. More severe impacts such as mortality or injury could lead to permanent or long-term consequences for individuals, but overall long-term consequences for fish populations are not expected. • The use of vessels and in-water devices, aircraft, weapons, military expended materials, seafloor devices, wires and cables, parachutes/decelerators, and military expended materials of ingestible size associated with training and testing activities may affect fishes. However, because the number of fishes potentially impacted by these activities is low, population-level impacts are unlikely. • Navy training and testing activities could pose secondary or indirect impacts on marine invertebrates via habitat, sediment, or water quality. These include (1) explosives and byproducts; (2) metals; (3) chemicals; (4) other materials such as targets, chaff, and plastics; and (5) impacts on fish habitat. Secondary impacts from underwater explosions would be temporary, and no lasting impact on prey availability or the pelagic food web would be expected. Indirect impacts of underwater detonations and explosive ordnance use under the Proposed Action would not result in a decrease in the quantity or quality of fish populations or fish habitats in the Study Area. Metals, chemicals, and other materials are introduced into seawater and sediments as a result of Navy training and testing activities. Indirect impacts of metals to fishes via water involve concentrations that are several orders of magnitude lower than concentrations achieved via bioaccumulation in the sediments. It is extremely unlikely that fishes would be indirectly impacted by toxic metals via sediment or water. Secondary effects on prey and habitat from the release of metals, chemicals, and other materials into the marine environment during training and testing activities are not anticipated.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.9 Fishes (continued)	**Alternative 2:** • The number of training and testing activities under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase as compared to Alternative 1 would have no appreciable change on the impact conclusions as summarized above under Alternative 1 for fishes.
Section 3.10 Cultural Resources	The Navy considered all stressors that could potentially impact cultural resources as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing the training and testing activities would result in fewer stressors within the marine environment where training and testing activities have historically been conducted. Therefore, discontinuing training and testing activities under the No Action Alternative would lessen the potential for impacts on submerged cultural resources. **Alternative 1 (Preferred Alternative):** • Training and testing activities would occur in the same locations and in a similar manner as were analyzed previously. In spite of increases proposed under Alternative 1, and as described in the 2015 NWTT Final EIS/OEIS, these physical disturbance and strike stressors remain unlikely to impact cultural resources. As stated in the 2015 NWTT Final EIS/OEIS, the impact of physical disturbance and strike stressors on cultural resources would be insignificant because (1) the types of activities associated with towed systems are conducted in areas where the sea floor is deeper than the length of the tow lines, and (2) devices are designed and operated within the water column and do not contact the seafloor. Activities involving towed and other in-water devices are not expected to impact submerged cultural resources. In-water crawlers would not disturb the bottom enough to disturb buried or imbedded archaeological resources. For these reasons, physical disturbance and strike stressors in the Study Area would not impact cultural resources.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.10 Cultural Resources (continued)	• There would be no impact of military expended materials on cultural resources under Alternative 1 because (1) most anticipated expended munitions would be small objects and fragments that would slowly drift to the seafloor after striking the ocean surface, (2) expended materials would not alter the archaeological or cultural characteristics of the submerged cultural resource if they should settle on the resource itself or in the vicinity, and (3) it is unlikely these materials would come into contact with or remain on submerged cultural resource. Therefore, activities involving military expended materials are not expected to impact submerged cultural resources. • Mine Neutralization EOD Training activities would remain at the same location and event amount under Alternative 1 as discussed in the 2015 NWTT Final EIS/OEIS. These events would occur in designated and well-established EOD Training Ranges where no cultural resources have been identified. It is unlikely that these resources could be disturbed by the use of seafloor devices. Therefore, activities involving seafloor devices are not expected to impact submerged cultural resources. • There would be no significant impact on the qualifying characteristics or use of historic properties associated with the established air space. The Navy maintains that Day Night Average Sound Levels (DNLs) exceeding 65 decibels (dB) remain the most reliable, tested, and defensible basis for assessing audible effects. The most current noise analysis does not identify any areas in the NWTT study area exceeding 37 dB DNL. Additionally, continuing aircraft flights within the altitude restrictions of established air space will not introduce new atmospheric or visual elements that may indirectly affect historic properties. **Alternative 2:** • The number of activities that would create acoustic and physical disturbance and strike stressors would not increase significantly under Alternative 2 compared to Alternative 1; therefore, impacts on cultural resources under Alternative 2 would be the same as described under Alternative 1.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.11 American Indian and Alaska Native Traditional Resources	The Navy considered all stressors that could potentially impact American Indian and Alaska Native traditional resources as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for impacts from those training and testing activities on American Indian and Alaska Native traditional resources. **Alternative 1 (Preferred Alternative):** • Navy training and testing activities could temporarily impede tribal access to portions of their usual and accustomed fishing grounds in the Inland Waters of the Study Area, but no impacts are expected in the Offshore Area or to Alaska Native protected tribal resources in the Western Behm Canal. Training and testing activities are not expected to have a measurable effect on the availability of marine resources for harvest by tribes. The potential for loss of or damage to fishing gear from Navy training and testing activities is low. **Alternative 2:** • The number of training activities that could impede Tribal access and result in damage to fishing gear would increase slightly under Alternative 2 compared to Alternative 1, resulting in a slight increase in the probability of the Navy's activities impeding access to portions of usual and accustomed fishing grounds or damaging fishing gear.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.12 Socioeconomic Resources and Environmental Justice	The Navy considered all stressors that could potentially impact socioeconomic resources as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for impacts on commercial transportation and shipping, commercial and recreational fishing, and tourism and recreation from the proposed training and testing activities, but ceasing the proposed training and testing activities could have negative impacts on the socioeconomic resources of coastal areas in Washington State, Oregon, and Northern California. **Alternative 1 (Preferred Alternative):** • Impacts on socioeconomic resources are expected to be minor because inaccessibility to areas of co-use would be localized and temporary, the Navy's standard operating procedures would minimize or prevent physical disturbance and strikes of commercial and recreational watercraft, most airborne activities would occur well out to sea far from tourism and recreation locations, aircraft activities in the Olympic MOA are expected to have negligible impacts on socioeconomic resources, and impacts to commercially important marine species are not expected. • There would be no disproportionately high impacts or adverse effects on any low-income populations or minority populations. **Alternative 2:** • The number of many training and testing activities under Alternative 2 would increase slightly over what is proposed for Alternative 1. However, this increase is not expected to appreciably change the potential for impacts on socioeconomic resources over what is analyzed for Alternative 1, as the types of impacts would be the same.

Table ES-1: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2 (continued)

Resource Category	Summary of Impacts
Section 3.13 Public Health and Safety	The Navy considered all stressors that could potentially impact public health and safety as a result of the Proposed Action. The following conclusions have been reached for the project alternatives: **No Action Alternative:** • Discontinuing training and testing under the No Action Alternative would lessen the potential for health and safety impacts from the training and testing activities to the public, but would not measurably improve the public's health and safety. **Alternative 1 (Preferred Alternative):** • The use of sonar, underwater explosives, radar, lasers, aircraft, vessels, in-water devices/targets, munitions, and seafloor devices would not adversely affect public health and safety because standard operating procedures are in place to ensure that there is no overlap between military and non-military activities. In addition, training and testing activities would not appreciably change the water quality in the region. **Alternative 2:** • The number of training and testing activities under Alternative 1 would increase slightly under Alternative 2, but the types of impacts would be the same as under Alternative 1.

Notes: Supplemental = Supplemental Environmental Impact Statement/Overseas Environmental Impact Statement, Navy = United States Department of the Navy, U.S. = United States.

ES.5.1 Cumulative Impacts

The analysis in the 2015 NWTT Final EIS/OEIS stated that impacts to sediments and water quality, air quality, marine habitats, marine vegetation, cultural resources, socioeconomic resources, and public health and safety would be negligible, or at worst short-term and localized. Those conclusions remain valid for this Supplemental, and it remains unlikely that these short-term, localized impacts would overlap in time and space with other present and future actions that produce similar impacts. Therefore, the short-term impacts are not expected to contribute to cumulative impacts.

Regarding marine mammals, sea turtles, birds, fishes, and American Indian and Alaska Native traditional resources, the cumulative impacts analysis for this Supplemental revealed:

- Past human activities have impacted these resources to the extent that several marine mammal, sea turtle, bird, and fish species occurring in the Study Area are ESA listed.
- The use of sonar and other non-impulsive sound sources under Alternative 1 and Alternative 2 has the potential to disturb or injure marine mammals and sea turtles. However, the incremental contribution of Alternatives 1 or 2 to cumulative impacts would be negligible.
- Explosive detonations and vessel strikes under Alternative 1 and Alternative 2 have the potential to disturb, injure, or kill marine mammals, sea turtles, fish, and birds. However, no population-level effects are expected, and the incremental contribution of Alternatives 1 or 2 to cumulative impacts would be negligible.
- Aircraft activities under Alternative 1 and Alternative 2 have the potential to disturb, injure, or kill birds; however, the incremental contribution of Alternatives 1 and 2 to cumulative impacts on bird populations would be low.
- Alternatives 1 and 2 could result in impacts on American Indian protected tribal resources and other traditional resources, because impeding access to areas of co-use such as usual and accustomed fishing grounds, even of short duration, may prevent fishing in limited seasons.

The aggregate impacts of past, present, and other reasonably foreseeable future actions are expected to result in significant impacts on some individual marine mammal and sea turtle species in the Study Area. Alternative 1 or Alternative 2 would contribute to cumulative impacts; however, marine mammal and sea turtle mortality and injury from non-Navy actions associated with commercial fisheries, commercial vessel strikes, and entanglement in marine debris are leading causes of direct mortality to marine mammals and sea turtles.

In summary, based on the analysis presented in Sections 3.4 (Marine Mammals), 3.5 (Sea Turtles), 3.6 (Birds), 3.9 (Fishes), and 3.11 (American Indian and Alaska Native Traditional Resources), the current aggregate impacts of past, present, and other reasonably foreseeable future actions are not significantly different than the assessment in the 2015 NWTT Final EIS/OEIS. For these resource sections Alternatives 1 or 2 would contribute to and increase cumulative impacts, but the relative contribution would be negligible compared to other non-Navy actions.

ES.6 Standard Operating Procedures, Mitigation, and Monitoring

Within the Study Area, the Navy implements standard operating procedures, mitigation measures, and marine species monitoring and reporting. Marine species monitoring and reporting efforts are designed to track compliance with take authorizations, evaluate the effectiveness of mitigation measures, and improve understanding of the effects of training and testing activities on marine resources. These efforts allow activity planners to fulfill activity requirements while minimizing the potential impacts on the environment.

ES.6.1 Standard Operating Procedures

For training and testing to be effective, units must be able to safely use their sensors and weapon systems as they are intended to be used in military missions and combat operations and to their optimum capabilities. Standard operating procedures applicable to training and testing have been developed through years of experience and their primary purpose is to provide for safety (including public health and safety) and mission success. Because they are essential to safety and mission success, standard operating procedures are part of the Proposed Action and are considered in the Chapter 3 (Affected Environment and Environmental Consequences) environmental analysis for applicable resources. As described in Section 2.3.3 (Standard Operating Procedures), there are benefits to environmental and cultural resources resulting from the Navy's standard operating procedures.

ES.6.2 Mitigation

Mitigation measures differ from standard operating procedures because mitigation is designed specifically for the purpose of avoiding or reducing potential impacts from the Proposed Action on environmental and cultural resources, whereas standard operating procedures are designed to provide for safety and mission success. Mitigation measures that the Navy will implement under the Proposed Action are organized into two categories: procedural mitigation and mitigation areas. Procedural mitigation is mitigation that will be implemented whenever and wherever an applicable military readiness activity takes place within the Study Area. Mitigation areas are geographic locations within the Study Area where the Navy will implement additional mitigation during all or part of the year for certain activities.

The Navy coordinated with the appropriate regulators (e.g., NMFS, USFWS) on the mitigation measures detailed in Chapter 5 (Mitigation) and Appendix K (Geographic Mitigation Assessment) through the consultation and permitting processes. The Navy and NMFS Records of Decision, MMPA Regulations and Letters of Authorization, ESA Biological Opinions, and other applicable consultation documents will document all mitigation efforts that the Navy will implement under the Proposed Action.

ES.6.3 Mitigation Measures Considered but Eliminated

A number of possible additional mitigation measures were suggested during the public scoping period and Draft Supplemental EIS/OEIS public comment period of this Supplemental EIS/OEIS, as well as during comment periods of previous Navy environmental documents. Section 5.5 (Measures Considered but Eliminated) and Appendix K (Geographic Mitigation Assessment) contain information on measures that did not meet the appropriate balance between being effective and practical to implement, and therefore will not be implemented under the Proposed Action.

ES.6.4 Monitoring and Reporting

The Navy is committed to demonstrating environmental stewardship while executing its national security mission, complying with the suite of federal environmental laws and regulations, and providing required and relevant reports to appropriate regulatory agencies. Since 2006 across all Navy range complexes (in the Marianas, Pacific, Atlantic, Gulf of Mexico, and Gulf of Alaska), the Navy has produced various reports (Major Exercise Reports, Annual Exercise Reports, and Monitoring Reports) submitted to National Marine Fisheries Service, to further research goals aimed at understanding the Navy's impact on the environment as it carries out testing and training to accomplish its mission. As a complement to the Navy's commitment to avoiding and reducing impacts of the Proposed Action through mitigation, the Navy will undertake monitoring efforts to track compliance with take authorizations, help investigate the effectiveness of implemented mitigation measures, and better understand the impacts of the Proposed Action on marine resources. Taken together, mitigation and monitoring comprise the Navy's integrated approach for reducing environmental impacts from the Proposed Action. The Navy's overall monitoring approach will seek to leverage and build on existing research efforts whenever possible.

Consistent with the cooperating agency agreement with NMFS, mitigation and monitoring measures presented in this Final Supplemental EIS/OEIS focus on the requirements for protection and management of marine resources. Since monitoring will be required for compliance with the Final Rule issued for the Proposed Action under the MMPA, details of the monitoring program are being developed in coordination with NMFS through the regulatory process.

The Navy developed the Integrated Comprehensive Monitoring Program to serve as the overarching framework for coordinating its marine species monitoring efforts and as a planning tool to focus its monitoring priorities pursuant to ESA and MMPA requirements (U.S. Department of the Navy, 2010). The purpose of the Integrated Comprehensive Monitoring Program is to coordinate monitoring efforts across all regions and to allocate the most appropriate level and type of monitoring effort for each range complex based on a set of standardized objectives, regional expertise, and resource availability. Additional information about the U.S. Navy Marine Species Monitoring Program, including an introduction to adaptive management and strategic planning, is provided in Section 5.1.2.2.1 (Marine Species Research and Monitoring Programs).

The Navy is committed to documenting and reporting relevant aspects of training and testing activities in order reduce environmental impact, and improve future environmental assessments. Initiatives include training and testing activity reporting, and incident reporting. Additional information is available on the U.S. Navy Marine Species Monitoring Program website https://www.navymarinespeciesmonitoring.us/.

ES.7 Other Considerations

ES.7.1 Consistency with Other Federal, State, and Local Plans, Policies and Regulations

Based on an evaluation of consistency with statutory obligations, the Navy's proposed training and testing activities would not conflict with the objectives or requirements of federal, state, regional, or local plans, policies, or legal requirements. The Navy consulted with regulatory agencies as appropriate during the National Environmental Policy Act (NEPA) process and would continue to coordinate with these agencies as necessary prior to implementation of the Proposed Action to ensure all legal requirements are met.

ES.7.2 Relationship Between Short-Term Use of the Human Environment and Maintenance and Enhancement of Long-Term Productivity

In accordance with NEPA, this Supplemental provides an analysis of the relationship between a project's short-term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. The Proposed Action may result in both short- 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. See Chapter 3 (Affected Environment and Environmental Consequences) and Appendix J (Airspace Noise Analysis for the Olympic Military Operations Area).

ES.7.3 Irreversible or Irretrievable Commitment of Resources

For both Alternative 1 and Alternative 2, most resource commitments are neither irreversible nor irretrievable. Most impacts are short-term and temporary or, if long lasting, are negligible. No habitat associated with threatened or endangered species would be lost as result of implementation of the Proposed Action. Since there would be no building or facility construction, the consumption of materials typically associated with such construction (e.g., concrete, metal, sand, fuel) would not occur. Energy typically associated with construction activities would not be expended and irreversibly lost.

Implementation of the Proposed Action would require the use of fuels by aircraft, ships, and ground-based vehicles. Since fixed- and rotary-wing flight and ship activities could increase, relative total fuel use could increase. Therefore, if total fuel consumption increased, this nonrenewable resource would be considered irretrievably lost.

ES.7.4 Energy Requirements and Conservation Potential of Alternatives and Mitigation Measures

Resources that will be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of resources. Prevention of the introduction of potential contaminants is an important component of mitigation of the preferred alternative's adverse impacts. To the extent practicable, considerations in the prevention of introduction of potential contaminants are included.

Sustainable range management practices are in place that protect and conserve natural and cultural resources and preserve access to training areas for current and future training requirements while addressing potential encroachments that threaten to impact range and training area capabilities.

ES.8 Public Involvement

The first step in the NEPA process for an EIS is to prepare a Notice of Intent to develop an EIS. The Navy published a Notice of Intent for this Supplemental EIS/OEIS in the *Federal Register* and several newspapers on August 22, 2017. In addition, Notice of Intent/Notice of Scoping Meeting Letters were distributed to federal, state, and local elected officials and government agencies. The Notice of Intent provided an overview of the Proposed Action and the scope of the Supplemental EIS/OEIS, and initiated the scoping process.

ES.8.1 Scoping Process

Scoping is an early and open process for developing the "scope" of issues to be addressed in an EIS and for identifying significant issues related to a proposed action. During scoping, the public helps define and prioritize issues through public meetings and written comments.

The Navy made significant efforts to notify the public to ensure maximum public participation during the scoping process. Notice of Intent and Notice of Scoping Meeting letters were distributed to 56 tribal chairpersons and presidents of American Indian and Alaska Native tribes; and 614 federal, state, and local elected officials and government agencies. Postcards were mailed to 1,655 recipients on the project mailing list, including individuals, nonprofit organizations, and for-profit organizations. The postcards included the dates, locations, and times for the scoping meetings, as well as the website address for more information. Advertisements, which included a description of the Proposed Action, the address of the project website, the duration of the comment period, and information on how to provide comments, were placed in 17 newspapers for three days each. Press releases to announce the scoping meetings, describe the Proposed Action, provide the address of the project website, duration of the comment period, and information on the public meetings were distributed to media.

ES.8.2 Scoping Comments

Scoping participants submitted comments in two ways:

- Written letters (received any time during the public comment period)
- Comments submitted directly on the project website (received any time during the public comment period)

The Navy received written and electronic comments from federal agencies, state agencies, federally recognized tribes, nongovernmental organizations, individuals, and community groups. A total of 786 comments were received. Seven hundred forty-five comments were submitted using the electronic comment form on the project website. Forty-one written comments were mailed. A sampling of some of the concerns includes:

- Proposed Action and alternatives
- Concern about expansion
- Cumulative impacts analysis
- Water quality and hazardous materials
- Request the Navy research other locations for training and testing
- Segmentation
- Use of simulation
- Aircraft noise over the Olympic Peninsula/Olympic National Park
- Impacts of training and testing on marine mammals, including Southern Resident killer whales
- Request the Navy continue to fulfill its obligation for meaningful government-to-government tribal consultation

ES.8.3 Draft Supplemental EIS/OEIS and Public Comments

The NWTT Supplemental Draft EIS/OEIS was released for public review and comment March 29, 2019, through June 12, 2019. The Navy made the following significant efforts to facilitate maximum public participation during the Supplemental Draft EIS/OEIS public review and comment period:

- Notification letters were sent to federal agencies, state agencies, and some non-governmental organizations.
- Tribal notification letters were distributed to tribal chairpersons and presidents of American Indian and Alaska Native tribes.
- Postcards were mailed to over 2,200 recipients on the project mailing list, including individuals; nongovernmental organizations; community and business groups; fishing, and recreation groups, and private companies.
- Press releases and a Public Service Announcement to announce the availability of the Supplemental Draft EIS/OEIS and public meetings were distributed.
- Newspaper advertisements to announce the availability of the Draft EIS/OEIS and public meetings were placed in 17 area newspapers.
- Eight public meetings were held in Washington, Oregon, California, and Alaska.

Changes in this Final Supplemental EIS/OEIS reflect comments made on the Draft Supplemental EIS/OEIS during the public comment period. Appendix H (Public Comment Responses) describes the public's participation and includes a list of the agencies and private entities that commented on the Draft Supplemental EIS/OEIS and a comment matrix with Navy responses associated with the comments received.

REFERENCES

U.S. Department of the Navy. (2010). *Navy Integrated Comprehensive Monitoring Plan*. Washington, DC: U.S. Department of the Navy.

U.S. Department of the Navy. (2015). *Northwest Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement, Final*. Silverdale, WA: Naval Facilities Engineering Command, Northwest.

U.S. Department of the Navy. (2018). *Quantifying Acoustic Impacts on Marine Mammals and Sea Turtles: Methods and Analytical Approach for Phase III Training and Testing* (Technical Report prepared by NUWC Division Newport, Space and Naval Warfare Systems Center Pacific, G2 Software Systems, and the National Marine Mammal Foundation). Newport, RI: Naval Undersea Warfare Center.

U.S. Department of the Navy. (2019). *U.S. Navy Marine Species Density Database Phase III for the Northwest Training and Testing Study Area* (Naval Facilities Engineering Command Pacific Technical Report). Pearl Harbor, HI: Naval Facilities Engineering Command Pacific.

This page intentionally left blank.