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ES.1 Introduction

The United States (U.S.) Department of the Navy (Navy) (including both the U.S. Navy and the U.S. Marine Corps) jointly with the U.S. Coast Guard (USCG), U.S. Army, and U.S. Air Force, has prepared this Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) pursuant to the National Environmental Policy Act (NEPA). For this EIS/OEIS, Action Proponents within the Navy include Commander U.S. Pacific Fleet, the U.S. Marine Corps, Naval Air Systems Command, Naval Facilities Engineering and Expeditionary Warfare Center, Naval Sea Systems Command, Naval Information Warfare Systems Command, and Office of Naval Research. In addition to the Navy action proponents, the following joint lead agencies are participating due to the inclusion of limited training similar to Navy training covered in this EIS/OEIS: USCG, U.S. Army, and U.S. Air Force. As the lead federal agency, the Navy has coordinated closely with the joint lead agencies, and any commitments relative to the joint lead agency's proposed actions made in this EIS/OEIS are applicable to the joint lead agencies.

ES.1.1 Proposed Action

The Proposed Action is to conduct training activities (hereinafter referred to as "training"); research, development, testing, and evaluation activities (hereinafter referred to as "testing"); and modernization and sustainment of ranges (collectively referred to as military readiness activities) in the Hawaii-California Training and Testing (HCTT) Study Area, as represented in Figure ES-1. The National Marine Fisheries Service's (NMFS') Proposed Action is to promulgate regulations and issue Letters of Authorization (LOAs) under the Marine Mammal Protection Act (MMPA) authorizing take of marine mammals incidental to proposed military readiness activities.

ES.1.2 Purpose and Need

The purpose of the Proposed Action is to ensure the U.S. military services are able to organize, train, and equip service members and personnel, needed to meet their respective national defense missions in accordance with their Congressionally mandated requirements.[1] These missions are achieved in part by conducting military readiness activities within the Study Area in accordance with established military readiness requirements.

The purpose of the NMFS' action is to evaluate the Navy's requests for authorizations to take marine mammals, pursuant to specific requirements of the MMPA and its implementing regulations administered by NMFS, and to decide whether to issue the authorizations. NMFS needs to render a decision regarding the requests for authorizations due to NMFS' responsibilities under the MMPA and its implementing regulations.

ES.2 Scope And Content of the Environmental Impact Statement/Overseas Environmental Impact Statement

This EIS/OEIS analyzes military readiness activities that could potentially affect human (e.g., socioeconomic) and natural resources, especially marine mammals, sea turtles, and fishes, and other marine and human resources. The range of alternatives includes the No Action Alternative and two

[1] See Title 10, Sections 8062 (Navy), 8063 (U.S. Marine Corps), 7062 (U.S. Army), 9062 (U.S. Air Force) United States Code and Title 14, Sections 101 and 102 United States Code (USCG) for each service's specific language. The U.S. Army is included only for its activities at Pacific Missile Range Facility with potential in-water effects.

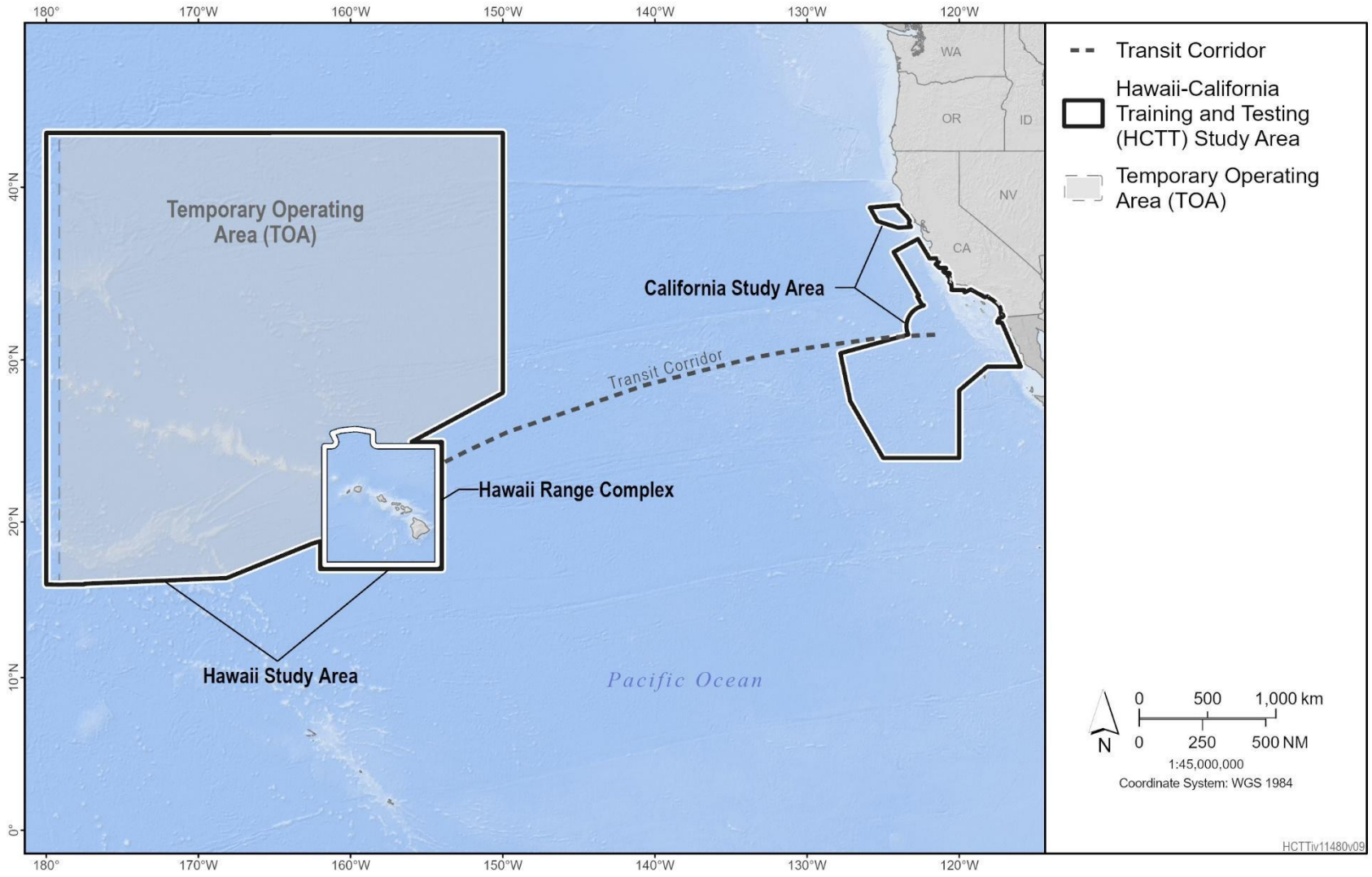

Figure ES-1 Hawaii-California Training and Testing Study Area

Notes: HCTT = Hawaii-California Training and Testing, TOA = Temporary Operating Area

action alternatives. In this EIS/OEIS, the Action Proponents analyzed direct, indirect, and cumulative effects. The Navy is the lead agency for the Proposed Action and, in coordination with the other Action Proponents and Joint Lead Agencies, is responsible for the scope and content of this EIS/OEIS.

NMFS is a cooperating agency because the scope of the Proposed Action and alternatives involves activities that have the potential to affect protected resources under the agency's jurisdiction and for which they have special expertise, including marine mammals, threatened and endangered species, essential fish habitat, and national marine sanctuaries.

The Navy, USCG, Army, and USAF will each issue a Record of Decision that provides the rationale for choosing one of the alternatives.

This EIS/OEIS has been prepared in accordance with NEPA to examine the environmental effects of the Proposed Action within the United States and its territories, and in accordance with Executive Order 12114 to examine effects of the Proposed Action on the environment outside the United States, its territories, and possessions.

ES.3 Proposed Action and Alternatives

The Navy, as the lead agency, proposes to conduct training, testing, and modernization and sustainment of ranges in the HCTT Study Area. The Study Area includes the waters of the Pacific Ocean along the coast of California and the waters around the Hawaiian Islands; the high seas west of California and surrounding Hawaii; pierside locations at Navy installations, within port transit channels and near civilian ports; and inshore waterways (e.g., San Diego Bay, Port Hueneme, Seal Beach, and Pearl Harbor). Training and testing activities prepare the Action Proponents to fulfill their missions to protect and defend the United States and its allies but have the potential to affect the environment.

These proposed activities are generally consistent with those analyzed in two separate NEPA planning documents, the 2018 Hawaii-Southern California Training and Testing (HSTT) EIS/OEIS (U.S. Department of the Navy, 2018) and the at-sea activities in the 2022 Point Mugu Sea Range (PMSR) EIS/OEIS (U.S. Department of the Navy, 2022) and are representative of the military readiness activities that the Action Proponents have been conducting off Hawaii and California for decades. This HCTT Study Area (Phase IV) differs from the HSTT Study Area (Phase III) in that HCTT includes a proposed expanded Southern California Range Complex (Warning Area 293 [W-293] and W-294) and two existing at-sea range areas (Point Mugu Sea Range and the Northern California Range Complex), as represented in Figure ES-2.

ES.3.1 No Action Alternative

Under the No Action Alternative, the Action Proponents would not conduct the proposed training and testing activities or the modernization and sustainment of ranges in the HCTT Study Area. Consequently, the No Action Alternative of not conducting the proposed live, at-sea training and testing in the Study Area is inherently unreasonable in that it does not meet the purpose and need. However, the analysis associated with the No Action Alternative is carried forward in order to compare the magnitude of the potential environmental effects of the Proposed Action with the conditions that would exist if the Proposed Action did not occur.

For NMFS, denial of the Navy's application for incidental take authorizations constitutes the NMFS No Action Alternative, which is consistent with NMFS' statutory obligation under the MMPA to grant or deny requests for takes incidental to specified activities.

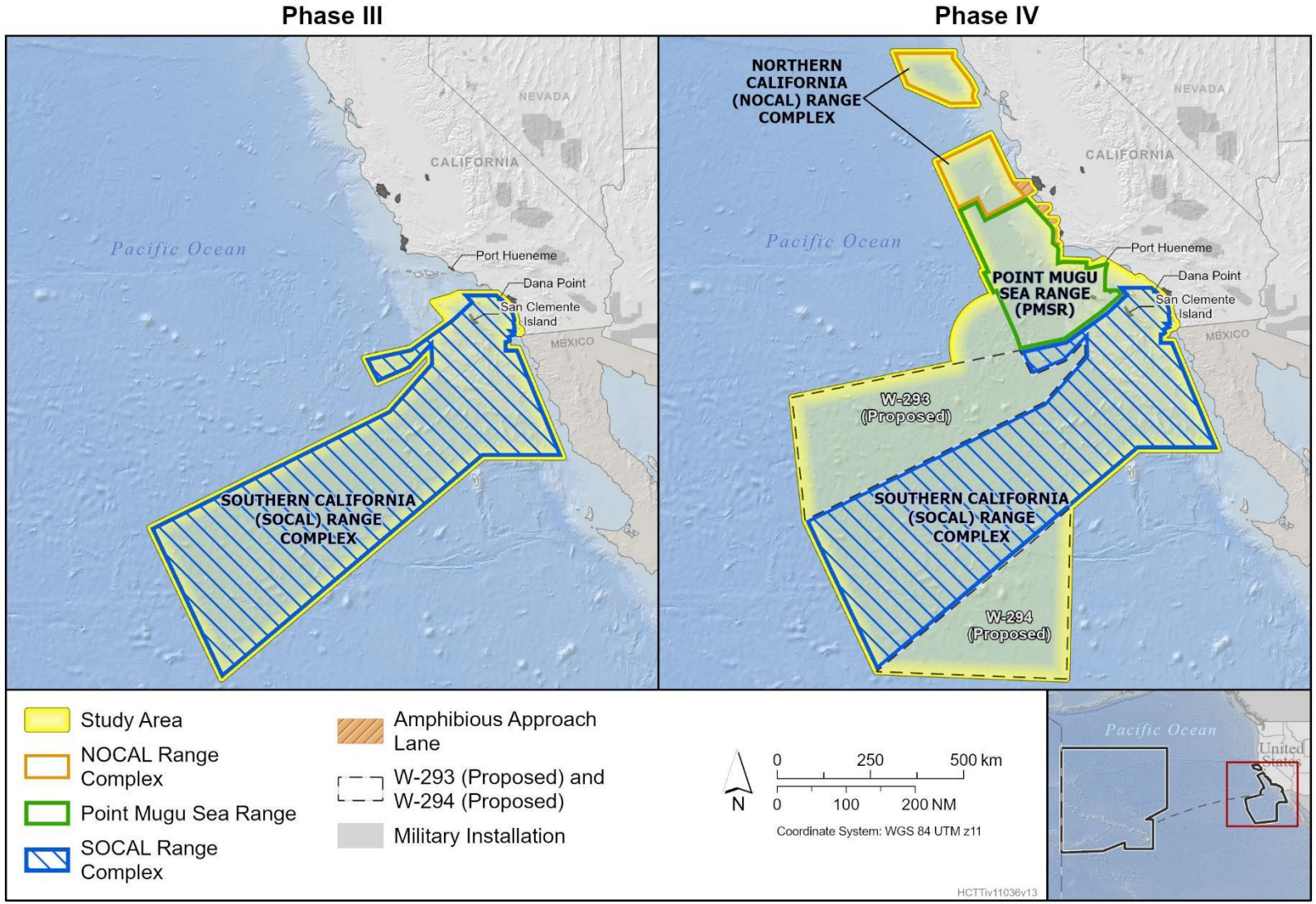

Figure ES-2: Changes to the California Portion of the Hawaii-California Training and Testing Study Area

ES.3.2 Alternative 1

Alternative 1 is the Preferred Alternative and presumes a representative level of readiness requirements.

ES.3.2.1 Training

Under this alternative, the Action Proponents propose to conduct training activities in the expanded HCTT Study Area into the reasonably foreseeable future, as necessary to meet current and future readiness requirements. These training activities include new activities as well as activities subject to previous analysis that are currently ongoing and have historically occurred in portions of the Study Area. The requirements for the types of activities to be conducted, as well as the intensity at which they need to occur, have been validated by senior military leadership. Specifically, Navy training activities are based on the requirements of the Optimized Fleet Response Plan and on changing world events, advances in technology, and Navy tactical and strategic priorities. These activities account for force structure changes and include training with new aircraft, vessels, unmanned/autonomous systems, and weapon systems that will be introduced to the fleets after December 2025. Under Alternative 1, the Action Proponents assume that some unit-level anti-submarine warfare training would be conducted using synthetic means (e.g., simulators). Additionally, this alternative assumes that some unit-level active sonar training would be completed during integration with other larger training exercises.

ES.3.2.2 Testing

Under Alternative 1, the Action Proponents propose an annual level of testing that reflects the fluctuations in testing programs by recognizing that the maximum level of testing would not be conducted each year. The majority of testing activities that would be conducted under this alternative are the same as, or similar to, those conducted currently or in the past. This alternative also includes the testing of new technologies and considers the inherent uncertainties in this type of testing after December 2025.

ES.3.2.3 Range Modernization and Sustainment

This alternative includes the establishment of new special use airspace, modernization of the existing Southern California Offshore Anti-Submarine Warfare Range (SOAR) underwater tracking and communication range, the installation and maintenance of two Shallow Water Training Ranges as extensions to the SOAR, deployment of seafloor cables and instrumentation, installation and maintenance of mine warfare and other training areas; and installation and maintenance of underwater platforms.

ES.3.3 Alternative 2

ES.3.3.1 Training

As under Alternative 1, this alternative includes new and ongoing activities. Under this alternative, the Action Proponents would be enabled to meet the highest levels of military readiness by conducting the majority of training live at sea, and by meeting unit-level training requirements using dedicated, discrete training events, instead of combining them with other training activities as described in Alternative 1.

Alternative 2 reflects the maximum number of training activities that could occur within a given year and assumes that the maximum level of activity would occur every year over any 7-year period. This 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

in-theater demands. Both unit-level training and major training exercises are assumed to occur at a maximum level every year.

ES.3.3.2 Testing

As under Alternative 1, this alternative includes new and ongoing activities. Under this alternative, the Action Proponents would be enabled to meet the highest levels of military readiness by conducting the majority of testing at sea.

Alternative 2 would include the testing of some new systems using new technologies, considering the potential for delayed or accelerated testing schedules, variations in funding availability, and innovations in technology development. To account for these inherent uncertainties in testing, this alternative assumes a greater level of testing efforts predicted for each individual system or program could occur in any given year. This alternative also includes the contingency for augmenting some weapon systems tests in response to potential increased world conflicts and changing military leadership priorities as the result of a direct challenge from an opponent that possesses near-peer capabilities. Therefore, this alternative includes the provision for higher levels of annual testing of certain systems to support expedited delivery of these systems to the fleet.

ES.3.3.3 Range Modernization and Sustainment

Under Alternative 2, Range Modernization and Sustainment is unchanged from Alternative 1.

ES.4 Summary of Environmental Effects

Environmental effects which might result from implementing the Proposed Action or alternatives have been analyzed in this EIS/OEIS. Resource areas analyzed include air quality, sediments and water quality, vegetation, invertebrates, abiotic habitats, fishes, marine mammals, reptiles, birds, cultural resources, socioeconomic resources, and public health and safety. This EIS/OEIS provides a comparison of the Proposed Action and reasonable alternatives, which are based on the reasonably foreseeable effects of the activities and the significance of those effects. The significance determination that is presented considers the context of the action and the intensity of the effect to determine the significance of reasonably foreseeable adverse effects of activities under the Proposed Action. A significance determination is only provided for activities that have reasonably foreseeable adverse effects on the human environment. To this end, the significance determination analysis reaches a significant/less than significant conclusion only for activities with reasonably foreseeable adverse effects on any of the listed factors.

Table ES-1 provides a comparison of the potential environmental effects of the No Action Alternative, Alternative 1 (Preferred Alternative), and Alternative 2.

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Section 3.1 Air Quality			
Criteria air pollutants	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		The emission of criteria pollutants resulting from activities in the Study Area would not cause a violation or contribute to an ongoing violation of the National Ambient Air Quality Standards.	
Hazardous air pollutants	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Emissions from the action alternatives would produce ambient hazardous air pollutant effects that are not expected to cause any discernable increase to human health risks from HAP exposure in areas where public presence is expected.	
Greenhouse gases[1]	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Greenhouse gas emissions generated by military readiness activities, even when considered alongside global emissions, would be so minimal that their contribution to adverse effects like sea level rise, increased average temperatures, and extreme weather events would be effectively undetectable.	
[1] As of April 11, 2025, the Council on Environmental Quality implementing regulations (40 Code of Federal Regulations 1500–1508) for the National Environmental Policy Act (NEPA) 42 United States Code 4321 et seq., are no longer in effect. In light of this change, the Navy's analyses of greenhouse gas emissions is included in this document to comply with applicable federal case law.			
Section 3.2 Sediments and Water Quality			
Explosives and explosives byproducts	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Effects on sediment and water quality from unconsumed explosives and constituent chemical compounds would be localized to an area immediately adjacent to the munition. Chemical and physical changes to sediments, as measured by the concentrations of explosives byproduct compounds, may be detectable within a limited radius of the munition but would not result in harmful effects on biological resources or habitats.	
Metals	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		The effects of releases from expended materials with metal components or munitions on sediment and water quality may be measurable within the area adjacent to the metal object, but concentrations would be below applicable regulatory standards or guidelines for adverse effects on biological resources and habitats.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Chemicals and other materials not associated with explosives	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Effects would be localized to the immediate area of the source of the chemicals/materials. Chemical and physical changes to sediment and water quality, as measured by the concentrations of contaminants associated with the expended material, would likely be indistinguishable from conditions at reference locations.	
Section 3.3 Vegetation			
Explosives	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Explosives could affect vegetation by destroying individuals or damaging parts of individuals; however, there would be no persistent or large-scale effects on the growth, survival, distribution, or structure of vegetation, primarily due to the avoidance of sensitive habitats and recovery of relatively small areas of disturbed vegetation.	
Physical Disturbance and Strike	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Physical disturbance and strike could affect vegetation by destroying individuals or damaging parts of individuals; however, there would be no persistent or large-scale effects on the growth, survival, distribution, or structure of vegetation.	
Secondary	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Project secondary effects on marine vegetation from suspended sediments and turbidity would be minor, temporary, and localized. In addition, no persistent or large-scale effects on the growth, survival, distribution, or structure of marine vegetation is expected.	
Section 3.4 Invertebrates			
Acoustics	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Available information indicates that invertebrate sound detection is primarily limited to low frequency (less than 1 kilohertz) particle motion and water movement that diminishes rapidly with distance from a sound source. The expected effect of noise on invertebrates is correspondingly diminished and mostly limited to offshore surface layers of the water column where only zooplankton, squid, and jellyfish are prevalent mostly at night when military readiness activities occur less frequently.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Explosives	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Explosives produce pressure waves that can harm invertebrates in the vicinity of where they typically occur; mostly offshore surface waters where zooplankton, squid, and jellyfish are prevalent mostly at night when military readiness activities with explosives do not typically occur. Invertebrate populations are generally smaller offshore than inshore due to the scarcity of habitat structure and comparatively lower nutrient levels.	
Physical Disturbance and Strike	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Most risk exists offshore where invertebrates are less abundant and near the surface during the day when actions are typically occurring, there is more interaction risk, but to smaller populations of invertebrates. Invertebrate communities in affected soft bottom areas are naturally resilient to occasional disturbances. Accordingly, population-level effects are unlikely.	
Entanglement	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Most entanglement risk occurs in offshore areas where invertebrates are relatively less abundant. The risk of entangling invertebrates is minimized by the typically linear nature of the expended structures (e.g., wires, cables), although decelerators/parachutes have mesh that could pose a risk to those invertebrates that are large and slow enough to be entangled. Deep-water coral could also be entangled by drifting decelerators/parachutes, but co-occurrence is highly unlikely given the extremely sparse coverage of corals in the deep ocean.	
Ingestion	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Most MEM are too large to be ingested, and many invertebrate species are unlikely to consume an item that does not visually or chemically resemble its natural food. Exceptions occur for materials fragmented by explosive charges or weathering, which could be ingested by filter- or deposit-feeding invertebrates. Ingestion of such materials would likely occur infrequently.	
Secondary	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Effects on invertebrate prey availability from military readiness activities would likely be insignificant overall based on the analysis conclusions for the direct stressors on their food resources (e.g., vegetation, other invertebrates, fish, other animal carcasses).	
Section 3.5 Abiotic Habitats			
Explosives	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Most of the high-explosive MEM would detonate at or near the water surface. The surface area of bottom substrate affected would be an extremely small fraction of the total Study Area.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Physical Disturbance and Strike	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Most seafloor devices, including training mine shapes and anchors, seafloor cables, and underwater platforms, would be placed in areas that would result in minor and temporary bottom substrate effects. Once on the seafloor and over time, MEM, anchors, and seafloor devices would be buried by sediment, corroded from exposure to the marine environment, or colonized by benthic organisms. The surface area of bottom substrate affected over the short-term would be a tiny fraction of the total Study Area.	
Section 3.6 Fishes			
Acoustics	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Some sonars, vessel and weapons noise could result in masking, physiological responses, or behavioral reactions. Aircraft noise would not likely result in effects other than brief, mild behavioral responses in fishes that are close to the surface. Air guns and pile driving have the potential to result in mortality, injury, or hearing loss at very short ranges (tens of meters) in addition to the effects listed above. Most effects are expected to be temporary and infrequent as most activities involving acoustic stressors would be temporary, localized, and infrequent resulting in short-term and mild to moderate effects. More severe effects (e.g., mortality) could lead to permanent effects for individuals but, overall, long-term consequences for fish populations are not expected.	
Explosives	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Sound and energy from explosions can cause mortality, injury, hearing loss, masking, physiological stress, or behavioral responses. The time scale of individual explosions is very limited and repeated exposure of individuals is unlikely. Most effects such as hearing loss or behavioral responses are expected to be short term and localized. More severe effects (e.g., mortality) could lead to permanent effects for individuals but, overall, long-term consequences for fish populations are not expected.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Energy	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Energy stressors include in-water electromagnetic devices and high-energy lasers. As supported by the latest science, physiological and behavioral effects on fishes would be unlikely at the electromagnetic field strengths that fishes could encounter from the use of electromagnetic devices under the Proposed Action. Because of this, and due to the relatively low number of high-energy laser events, the very localized affected area of the laser beam, the short duration of the laser, and the extremely low probability of a fish surfacing at the precise time and location where a laser would miss a target and strike the ocean surface, energy stressors would not have reasonably foreseeable adverse effects on fishes.	
Physical Disturbance and Strike	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		The use of vessels, in-water devices, MEM, and seafloor devices pose a risk for collision, stress response, or effects caused by sediment disturbance, particularly near coastal areas and bathymetric features where fish densities are higher. Most fishes are mobile and have sensory capabilities that enable them to detect and avoid vessels and other items.	
Entanglement	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Physical characteristics of wires and cables, decelerators/parachutes, and nets, combined with the sparse distribution of these items throughout the Study Area, indicates a very low potential for fishes to encounter and become entangled in them. Because of the low numbers of fishes potentially affected by entanglement stressors, population-level effects are unlikely.	
Ingestion	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		The likelihood that expended items would be ingested and cause an adverse effect would depend on the size and feeding habits of a fish, the rate at which a fish would encounter items, and the composition and physical characteristics of the item. The likelihood of ingestion is low based on the dispersed nature of the materials and the limited exposure of fish to those items and, if ingested, a fish would temporarily take the expended material into its mouth, then spit it out.	
Secondary	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Effects on habitat and prey availability would be negligible, and not have secondary effects on fishes.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Section 3.7 Marine Mammals			
Acoustics	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		The potential for exposure to noise varies for each marine mammal population present in the Study Area. Exposures to sound-producing activities may cause auditory masking, physiological stress, or minor behavioral responses. Exposure to some sonars, air guns, and pile driving may also affect hearing and cause a range of behavioral reactions. Although individual marine mammals would be affected, no adverse effects to marine mammal populations are anticipated.	
Explosives	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		The potential for exposure to explosives (in the water or near the water's surface) varies for each marine mammal population present in the Study Area. The impulsive, broadband sounds from explosions introduced into the marine environment may cause auditory effects, auditory masking, physiological stress, and behavioral responses. Explosions in the water or near the water's surface present a risk to marine mammals located near the explosion, because the resulting shock waves can result in the injury or mortality of an animal. The number of auditory, non-auditory injury and mortality, and behavioral effects are estimated for each stock.	
Energy	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		A marine mammal would have to be in close proximity to an electromagnetic source for there to be any effect. Potential adverse effects from high-energy lasers are not expected due to the automatic shut-off feature of the system. Adverse effects from high-power microwave devices would only be possible for marine mammals directly struck by the microwave beam. Statistical probability analyses demonstrate with a high level of certainty that no marine mammals would be struck by a high-power microwave device.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Physical Disturbance and Strike	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		The probability of whale strikes by Navy and USCG vessels was calculated based on an analysis of past strike data and anticipated future training and testing vessel use at-sea. Since vessel use would remain similar to vessel use over the past decade, the potential for striking a marine mammal remains similarly low. The results of the analysis indicate a very low probability of strike that could result in injury or mortality to large whale species. The use of vessels and in-water devices and MEM during military readiness activities would have less than significant adverse effects on marine mammals. A vessel strike on an individual marine mammal would be considered a significant adverse effect on the individual even if the strike does not result in mortality. Nevertheless, the probability of a vessel strike remains low.	
Entanglement	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Physical characteristics of wires and cables, decelerators/parachutes, and nets and other obstacles, combined with the sparse distribution of these items throughout the Study Area, indicate a very low potential for marine mammals to encounter and become entangled in them.	
Ingestion	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		The likelihood that a marine mammal would encounter and subsequently ingest a military expended item residing in deep water on the seafloor is considered low. Large buoyant MEM (e.g., parachutes) that remain at the surface or in the water column before sinking to the seafloor have a greater potential to be encountered; however, ingestion of MEM that is dissimilar to prey is unlikely.	
Secondary	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Secondary stressors from military readiness activities are not expected to have short-term effects on individual marine mammals or long-term effects on marine mammal populations. Secondary stressors may affect main Hawaiian Islands insular false killer whale, humpback whale (Mexico and Central America Distinct Population Segments) and Hawaiian monk seal critical habitats.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Section 3.8 Reptiles			
Acoustics	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Reptiles could be affected by only a limited portion of acoustic stressors because reptiles have limited hearing abilities. Exposures to sound-producing activities present risks that could include hearing loss, auditory masking, physiological stress, and changes in behavior, while non-auditory injury and mortality are unlikely to occur under realistic conditions.	
Explosives	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Explosions close to a reptile present a risk because the shock waves produced by explosives could cause injury or result in the death. If further away from the explosion, impulsive, broadband sounds introduced into the marine environment may cause hearing loss, masking, physiological stress, or changes in behavior.	
Energy	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		The magnetic fields generated by electromagnetic devices used in military readiness activities are of relatively minute strength. Fields and electrical pulses may include no reaction, avoidance, habituation, changes in activity level, or attraction, but the range of effects would be small and only occur near the source. High-energy lasers and microwaves are directed at surface targets and would only affect reptiles very near the surface if the laser missed its target, and the potential for exposure to these energy weapons is negligible.	
Physical Disturbance and Strike	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Vessels, in-water devices, and seafloor devices present a risk for collision with sea turtles, particularly in coastal areas where densities are higher. Strike potential by expended materials is statistically small. Because of the low numbers of sea turtles potentially affected by activities that may cause a physical disturbance and strike, population-level effects are unlikely. Sea snakes considered in this analysis rarely occur in the Study Area, and few, if any, effects are anticipated.	
Entanglement	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		The potential for effects to sea turtles is dependent on the physical properties of the expended materials and the likelihood that a sea turtle would encounter a potential entanglement stressor and then become entangled in it. Physical characteristics of wires and cables and decelerators/parachutes combined with the sparse distribution of these items throughout the Study Area indicates a very low potential for sea turtles to encounter and become entangled in them. Long-term effects on individual sea turtles and sea turtle populations from entanglement stressors are not anticipated.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Ingestion	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Adverse effects from ingestion of MEM would be limited to the unlikely event that a sea turtle would be harmed by ingesting an item that becomes embedded in tissue or is too large to be passed through the digestive system. The likelihood that a sea turtle or sea snake would encounter and subsequently ingest a military expended item is considered low. Long-term consequences to reptile populations from ingestion stressors are not anticipated.	
Secondary	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Secondary stressors are not expected to have short-term effects on individual sea turtles or long-term effects on sea turtle populations.	
Section 3.9 Birds			
Acoustics	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Unless very close to an intense sound source, responses by birds to acoustic stressors would likely be limited to short-term behavioral responses. Some birds may be temporarily displaced, and there may be temporary increases in stress levels. Although individual birds may be affected, population-level effects would not occur.	
Explosives	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Birds could be exposed to in-air explosions. Sounds generated by most small underwater explosions are unlikely to disturb birds above the water surface. However, if a detonation is sufficiently large or is near the water surface, birds above the water surface could be injured or killed. Detonations in air could injure birds while either in flight or at the water surface. An explosive detonation would likely cause a startle reaction, as the exposure would be brief, and any reactions are expected to be short term. Although a few individuals may experience long-term effects and potential mortality, population-level effects would not occur.	
Energy	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		The effect of energy stressors on birds is expected to be negligible based on (1) the limited geographic area in which they are used, (2) the rare chance that an individual bird would be exposed to these devices while in use, and (3) the tendency of birds to temporarily avoid areas of activity when and where the devices are in use.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Physical Disturbance and Strike	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		There is a potential for individual birds to be injured or killed by physical disturbance and strikes during training and testing. However, there would not be long-term species or population-level effects due to the vast area over which training and testing activities occur, and the small size of birds and their ability to flee disturbance.	
Ingestion	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		It is possible that persistent expended materials could be accidentally ingested by birds while they were foraging for natural prey items, though the probability of this event is low as (1) foraging depths of diving birds is generally restricted to the surface of the water or shallow depths, (2) the material is unlikely to be mistaken for prey, and (3) most of the material remains at or near the sea surface for a short length of time.	
Secondary	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Implementation of the Proposed Action would not adversely affect populations of invertebrate or fish prey resources of birds and therefore would not indirectly affect birds.	
Section 3.10 Cultural Resources			
Explosives	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Explosive stressors resulting from underwater explosions creating shock waves and cratering of the seafloor occur at the surface or, if underwater, in specific detonation areas where no known cultural resources are present. Additionally, the Navy military routinely avoids known obstructions, including cultural resources.	
Physical Disturbance and Strike	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Vessels and in-water devices are operated in a manner to avoid known obstructions, including submerged historic and cultural resources; and the Navy's seafloor devices are placed to avoid underwater obstructions, including submerged cultural resources. Physical disturbance and strike stressors resulting from in-water devices, MEM, seafloor devices, and pile driving activities would not result in adverse effects on known or unknown submerged cultural resources.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Section 3.11 Socioeconomic Resources			
Accessibility	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Accessibility stressors are not expected to affect commercial transportation and shipping, commercial and recreational fishing, subsistence fishing, or tourism because inaccessibility to areas of co-use would be temporary and of short duration (hours).	
Airborne acoustics	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Airborne acoustic stressors are not expected to affect tourism or recreational activity because military readiness activities would occur well out to sea, far from tourism and recreation locations.	
Physical disturbance and strike	Unchanged or slightly improved from baseline conditions	**Less than significant effects**	**Less than significant effects**
		Physical disturbance and strikes are not expected to affect commercial and recreational fishing, subsistence fishing, or tourism because of the large size of the Study Area, the limited areas of operations, and implementation of standard operating procedures.	
Secondary	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		No secondary effects on socioeconomic resources would occur based on the results of analyses of invertebrates, fishes, and marine mammals. Therefore, indirect or secondary effects on commercial transportation, commercial or recreational fishing, subsistence fishing, and tourism are not anticipated.	

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

Stressor	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Section 3.12 Public Health and Safety			
Underwater energy	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Because of the military's SOPs, effects on public health and safety from underwater energy would be unlikely.	
In-air energy	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Because of the military's SOPs, effects on public health and safety from in-air energy would be unlikely.	
Physical interactions	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Because of the military's SOPs, effects on public health and safety from physical interactions would be unlikely.	
Secondary stressors	Unchanged or slightly improved from baseline conditions	**No reasonably foreseeable adverse effects**	**No reasonably foreseeable adverse effects**
		Previous analyses determined that any effects to water quality would be temporary and minimal. No state or federal standards or guidelines would be violated. Consequently, military readiness activities would result in no indirect effects on public health and safety associated with sediments and water quality.	

Notes: MEM = Military Expended Material, USCG = United States Coast Guard, SOP = Standard Operating Procedure

ES.5 Cumulative Effects

Cumulative effects were analyzed for each resource addressed in Chapter 3 for the No Action Alternative, Alternative 1, and Alternative 2 in combination with past, present, and reasonably foreseeable future actions. Analysis was not separated by alternative because the data available for the cumulative effects analysis was mostly qualitative in nature and, from a landscape-level perspective, these qualitative effects are expected to be generally similar.

The Action Alternatives would contribute incremental effects on the ocean ecosystem, which is already experiencing and absorbing a multitude of stressors to a variety of receptors. In general, it is not anticipated that the implementation of the Proposed Action would meaningfully contribute to the ongoing stress or cause significant collapse of any particular marine resource, but it would further cause minute effects on resources that are already experiencing various degrees of interference and degradation. It is intended that the mitigation measures described in Chapter 5 will further reduce the potential effects of the Proposed Action in such a way that they are avoided to the maximum extent practicable and to ensure that effects do not become cumulatively significant to any marine resource.

Marine mammals and sea turtles are the primary resources of concern for cumulative effects analysis, but the Proposed Action is not anticipated to meaningfully contribute to the decline of these populations or affect the stabilization and recovery thereof. The Action Proponents propose to implement standard operating procedures that reduce the likelihood of overlap of stressors resulting from the Proposed Action in time and space with stressors from other sources, and mitigation measures as described in Chapter 5 reduce the risk of direct effects of the Proposed Action on individual animals.

The aggregate effects of past, present, and other reasonably foreseeable future actions have resulted in significant effects on some marine mammal and all sea turtle species in the Study Area; however, the decline of these species is chiefly attributable to other stressors in the environment, including the synergistic effect of bycatch, entanglement, commercial vessel traffic, ocean pollution, and coastal zone development. The incremental contribution of the Proposed Action to cumulative effects on air quality, sediments and water quality, vegetation, invertebrates, abiotic habitats, fishes, birds, cultural resources, socioeconomic resources, and public health and safety would not significantly contribute to cumulative stress on those resources (Table ES-2).

Table ES-2: Summary of Cumulative Effects for the No Action Alternative, Alternative 1, and Alternative 2

Resource Category	Summary of Cumulative Effects
Air Quality	The incremental contribution of the Proposed Action within and beyond state waters, when added to the effects of all other past, present, and reasonably foreseeable future actions would not result in measurable additional effects on air quality and greenhouse gas emissions in the Study Area or beyond.
Sediments and Water Quality	The incremental contribution of the Proposed Action when added to the effects of all other past, present, and reasonably foreseeable future actions would not result in measurable additional effects on sediments or water quality in the Study Area or beyond.
Vegetation	The incremental contribution of the Proposed Action, when added to the effects of all other past, present, and reasonably foreseeable future actions, would not result in measurable additional effects on vegetation in the Study Area or beyond.
Invertebrates	The incremental contribution of the Proposed Action, when added to the effects of all other past, present, and reasonably foreseeable future actions, would not result in measurable additional effects on invertebrates in the Study Area or beyond.
Abiotic Habitats	The incremental contribution of the Proposed Action, when added to the effects of all other past, present, and reasonably foreseeable future actions, would not result in measurable additional effects on abiotic habitats, including National Marine Sanctuaries, in the Study Area or beyond.
Fishes	The incremental contribution of the Proposed Action, when added to the effects of all other past, present, and reasonably foreseeable future actions, would not result in measurable additional effects on fishes in the Study Area or beyond.
Marine Mammals	The Proposed Action could contribute incremental stressors to individuals, which would further compound effects on a given individual already experiencing stress. However, with the implementation of standard operating procedures reducing the likelihood of overlap in time and space with other stressors and the implementation of mitigation measures reducing the likelihood of effects, the incremental stressors anticipated from the Proposed Action are not anticipated to be significant.
Reptiles	The Proposed Action could contribute incremental stressors to individuals, which would further compound effects on a given individual already experiencing stress. However, with the implementation of standard operating procedures reducing the likelihood of overlap in time and space with other stressors, and the implementation of mitigation measures reducing the likelihood of effects, the incremental stressors anticipated from the Proposed Action are not anticipated to be significant.
Birds	The incremental contribution of the Proposed Action, when added to the effects of all other past, present, and reasonably foreseeable future actions, would not result in measurable additional effects on birds in the Study Area or beyond.
Cultural Resources	The Proposed Action is not expected to result in effects on cultural resources in the Study Area and likewise would not contribute incrementally to cumulative effects on cultural resources.
Socioeconomic Resources	Short-term effects, should they occur, would not contribute incrementally to cumulative effects on the socioeconomic resources in the Study Area.
Public Health and Safety	The Proposed Action is not expected to result in effects on public health and safety and thus would not contribute incrementally to or combine with other effects on health and safety within the Study Area.

ES.6 Mitigation

The Action Proponents have been mitigating effects from military readiness activities on environmental and cultural resources throughout areas where it trains and tests for more than two decades. In coordination with the appropriate regulatory agencies, mitigation measures for the Proposed Action were developed to effectively avoid or reduce potential effects and that were determined practical to implement.

Mitigation measures implemented under the Proposed Action are organized into two categories: activity-based mitigation and mitigation areas. Mitigation will be implemented whenever and wherever training or testing activities involving applicable acoustic, explosive, and physical disturbance and strike stressors occur within the Study Area.

ES.6.1 Activity-Based Mitigation

Activity-based mitigations are fundamentally consistent across stressors; however, there are activity-specific variations to account for differences in platform configurations, event characteristics, and stressor types. These mitigations have a primary objective of reducing overlap of individual marine mammals and sea turtles (and in some instances, Endangered Species Act-listed fish and birds) in real time with stressors that have the potential to cause injury or mortality. Table ES-3 through Table ES-6 summarize the mitigation zones and other activity-based mitigation measures that will be implemented under the Proposed Action.

Table ES-3: Summary of Activity-Based Mitigations for Acoustic Stressors

Stressor or Activity	Mitigation Zone Sizes and Other Requirements	Protection Focus
Active Sonar	LF $\geq$ 200 dB, hull-mounted MFA, or other > 200 dB: • 1,000 yd. (power down of 6 dB) • 500 yd. (power down of 10 dB) • 200 yd. (shut down)	Marine mammals, Sea turtles
	LF < 200 dB, non-hull-mounted MFA, HF, air guns, broadband and other < 200 dB: • 200 yd. (shut down)	
Pile Driving and Pile Removal	• 5 yd. (cease pile driving or removal)	Marine mammals, Sea turtles
Weapons Firing Noise	• 30° on either side of the firing line out to 70 yd. (cease fire)	Marine mammals, Sea turtles

Notes: LF = low-frequency active sonar; MFA = mid-frequency active sonar, dB = decibels, yd. = yards, HF = high-frequency active sonar

Table ES-4: Summary of Activity-Based Mitigations for Explosives

Stressor or Activity	Mitigation Zone Sizes and Other Requirements	Protection Focus
Explosive Bombs	Any NEW: • 2,500 yd. (cease fire)	Marine mammals, Sea turtles
Explosive Gunnery	A-S medium caliber: • 200 yd. (cease fire)	Marine mammals, Sea turtles
	S-S medium caliber: • 600 yd. (cease fire)	
	S-S large caliber: • 1,000 yd. (cease fire)	
Explosive Underwater Demolition Multiple Charge – Mat Weave and Obstacle Loading	Any NEW: • 700 yd. (cease fire)	Marine mammals, Sea turtles
Explosive Mine Countermeasure and Neutralization (No Divers)	0.1–5 lb. NEW: • 600 yd. (cease fire)	Marine mammals, Sea turtles, Seabirds
	>5–650 lb. NEW: • 2,100 yd. (cease fire)	
Explosive Mine Countermeasure and Neutralization (With Divers)	0.1–20 lb. NEW, positive control: • 500 yd. (cease fire)	Marine mammals, Sea turtles, Seabirds, manta rays, Hammerhead sharks
	>0.1–29 lb. NEW, time delay; or >20–60 lb., positive control: • 1,000 yd. (cease fire)	
Explosive Missiles and Rockets	0.6–20 lb. NEW, A-S: • 900 yd. (cease fire)	Marine mammals, Sea turtles
	>20–500 lb. NEW, A-S • 2,000 yd. (cease fire)	
Explosive Sonobuoys and Research-Based Sub-Surface Explosives	Any NEW sonobuoy, 0.1–5 lb. NEW other sub-surface explosives: • 600 yd. (cease fire)	Marine mammals, Sea turtles
Explosive Torpedoes	Any NEW: • 2,100 yd. (cease fire)	Marine mammals, Sea turtles
Ship Shock Trials	Any NEW: • 3.5 NM (cease fire)	Marine mammals, Sea turtles, Jellyfish aggregations, large school of fish, flock of seabirds
Sinking Exercise	Any NEW: • 2.5 NM (cease fire)	Marine mammals, Sea turtles, Jellyfish aggregations

Notes: NEW = Net Explosive Weight, yd. = yards, A-S = Air-to-Surface, S-S = Surface-to-Surface, lb. = pounds, NM = nautical miles

Table ES-5: Summary of Activity-Based Mitigations for Non-Explosive Ordnance

Stressor or Activity	Mitigation Zone Sizes and Other Requirements	Protection Focus
Non-Explosive Aerial-Deployed Mines and Bombs	• 1,000 yd. (cease fire)	Marine mammals, Sea turtles
Non-Explosive Gunnery	• 200 yd. (cease fire)	Marine mammals, Sea turtles
Non-Explosive Missiles and Rockets	• 900 yd. (cease fire)	Marine mammals, Sea turtles

Notes: A-S = Air-to-Surface, yd. = yards

Table ES-6: Summary of Activity-Based Mitigations Vessels, Vehicles, Towed In-Water Devices, and Net Deployment

Stressor or Activity	Mitigation Zone Sizes and Other Requirements	Protection Focus
Manned Surface Vessels	Maintain following distances as mission and circumstances allow: • 500 yd. from whales • 200 yd. from other marine mammals • Vicinity of sea turtles	Marine mammals, Sea turtles
Unmanned Vehicles	When under escort and positive control by a manned surface vessel: • 500 yd. from whales • 200 yd. from other marine mammals • Vicinity of sea turtles	Marine mammals, Sea turtles
Towed In-Water Devices	When towed by an aircraft, manned surface support vessel, USV, or UUV escorted and operated under positive control by a manned surface vessel: • 250 yd. from marine mammals • Vicinity of sea turtles	Marine mammals, Sea turtles
Net Deployment	For 15 minutes prior to the deployment of nets and while nets are deployed: • 500 yd. from marine mammals and sea turtles	Marine mammals, Sea turtles

Notes: yd. = yards, USV = Unmanned Surface Vehicle, UUV = Unmanned Underwater Vehicle

ES.6.2 Geographic Mitigation

Mitigation areas are geographic locations within the Study Area where mitigation measures will be implemented to: (1) avoid or reduce effects on biological or cultural resources that are not observable by Lookouts from the water's surface (i.e., resources for which activity-based mitigation cannot be implemented); (2) in combination with activity-based mitigation, to effect the least practicable adverse effect on marine mammal species or stocks and their habitat; or (3) in combination with activity-based mitigation, ensure that the Proposed Action does not jeopardize the continued existence of endangered or threatened species, or result in destruction or adverse modification of critical habitat. Table ES-7 summarizes mitigation areas that will be implemented under the Proposed Action.

Table ES-7: Summary of Mitigation to be Implemented Within Mitigation Areas

Summary of Mitigation Area Requirements
Geographic Mitigation for Shallow-Water Coral Reefs and Precious Coral Beds
• The Action Proponents will not detonate any in-water explosives (including underwater explosives and explosives deployed against surface targets) within a horizontal distance of 350 yards (yd.) from shallow-water coral reefs and precious coral beds (except in designated areas of the Hawaii Range Complex, such as Barbers Point Underwater Range, Ewa Training Minefield, and Puuloa Underwater Range, where these features will be avoided to the maximum extent practical). • The Action Proponents will not set vessel anchors within the anchor swing circle radius from shallow-water coral reefs and precious coral beds (except in designated anchorages). • The Action Proponents will not place non-explosive seafloor devices or deploy non-explosive ordnance against surface targets (including aerial-deployed mine shapes) within a horizontal distance of 350 yd. from shallow-water coral reefs and precious coral beds (except in designated areas in the Hawaii Range Complex, such as Barbers Point Underwater Range, Ewa Training Minefield, and Puuloa Underwater Range, where these features will be avoided to the maximum extent practical).
Geographic Mitigation for Artificial Reefs, Hard Bottom Substrate, and Shipwrecks
• The Action Proponents will not detonate explosives on or near the seafloor (e.g., explosive bottom-laid or moored mines) within a horizontal distance of 350 yd. from artificial reefs, hard bottom substrate, and shipwrecks (except in designated areas in the Hawaii California Study Areas, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practical). • The Action Proponents will not set vessel anchors within the anchor swing circle radius from artificial reefs, hard bottom substrate, and shipwrecks (except in designated anchorages). • The Action Proponents will not place non-explosive seafloor devices (that are not precisely placed) within a horizontal distance of 350 yd. from artificial reefs, hard bottom substrate, and shipwrecks (except as described in the bullet above for vessel anchors, the bullet below for precisely placed seafloor devices, and in designated areas of the Hawaii and California Study Areas, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practical). • The Action Proponents will not position precisely placed non-explosive seafloor devices directly on artificial reefs, hard bottom substrate, or shipwrecks. • The Action Proponents will avoid positioning precisely placed non-explosive seafloor devices near these resources by the largest distance that is practical to implement based on mission requirements.
Hawaii Island Marine Mammal Mitigation Area
• The Action Proponents will not use more than 300 combined hours of MF1 and MF1C surface ship hull-mounted mid-frequency active sonar or 20 hours of helicopter dipping sonar (a mid-frequency active sonar source) total during training and testing annually within the mitigation area. • The Action Proponents will not detonate in-water explosives (including underwater explosives and explosives deployed against surface targets) within the mitigation area.
Hawaii 4-Islands Marine Mammal Mitigation Area
• From November 15 to April 15, the Action Proponents will not use MF1 or MF1C surface ship hull-mounted mid-frequency active sonar during training and testing within the mitigation area. • The Action Proponents will not detonate in-water explosives (including underwater explosives and explosives deployed against surface targets) within the mitigation area (year-round).
Hawaii Humpback Whale Special Reporting Mitigation Area
• The Action Proponents will report the total hours of MF1 and MF1C surface ship hull-mounted mid-frequency active sonar used from November through May in the mitigation area in their training and testing activity reports submitted to NMFS.

Table ES-7: Summary of Mitigation to be Implemented Within Mitigation Areas (continued)

Summary of Mitigation Area Requirements
Hawaii Humpback Whale Awareness Message Mitigation Area
• The Action Proponents will broadcast awareness notification messages to alert applicable assets (and their Lookouts) transiting and training or testing in the Hawaii Range Complex to the possible presence of concentrations of humpback whales from November through May. • Lookouts will use that knowledge to help inform their visual observations during military readiness activities that involve vessel movements, active sonar, in-water explosives (including underwater explosives and explosives deployed against surface targets), or the deployment of non-explosive ordnance against surface targets in the mitigation area.
Northern California Large Whale Mitigation Area
• From June 1 to October 31, the Action Proponents will not use more than 300 combined hours of MF1 and MF1C surface ship hull-mounted mid-frequency active sonar (excluding normal maintenance and systems checks) total during training and testing within the combination of this mitigation area, the Central California Large Whale Mitigation Area, and the Southern California Blue Whale Mitigation Area.
Central California Large Whale Mitigation Area
• From June 1 to October 31, the Action Proponents will not use more than 300 combined hours of MF1 and MF1C surface ship hull-mounted mid-frequency active sonar (excluding normal maintenance and systems checks) total during training and testing within the combination of this mitigation area, the Northern California Large Whale Mitigation Area, and the Southern California Blue Whale Mitigation Area.
Southern California Blue Whale Mitigation Area
• From June 1 to October 31, the Action Proponents will not use more than 300 combined hours of MF1 and MF1C surface ship hull-mounted mid-frequency active sonar (excluding normal maintenance and systems checks) total during training and testing within the combination of this mitigation area, the Northern California Large Whale Mitigation Area, and the Central California Large Whale Mitigation Area. • From June 1 to October 31, the Action Proponents will not detonate in-water explosives (including underwater explosives and explosives deployed against surface targets) during large-caliber gunnery, torpedo, bombing, and missile (including 2.75-inch rockets) training and testing.
California Large Whale Awareness Messages
• The Action Proponents will broadcast awareness notification messages to alert applicable assets (and their Lookouts) transiting and training or testing off the U.S. West Coast to the possible presence of concentrations of large whales, including gray whales (November–March), fin whales (November–May), and mixed concentrations of blue, humpback, and fin whales that may occur based on predicted oceanographic conditions for a given year (e.g., May–November, April–November). Notification messages may provide the following types of information which could vary annually: o While blue whales tend to be more transitory, some fin whales are year-round residents that can be expected in nearshore waters within 10 nautical miles (NM) of the California mainland and offshore operating areas at any time. o Fin whales occur in groups of one to three individuals, 90 percent of the time, and in groups of four or more individuals, 10 percent of the time. o Unique to fin whales offshore southern California (including the Santa Barbara Channel and PMSR area), there could be multiple individuals or separate groups scattered within a relatively small area (1–2 NM) due to foraging or social interactions. o When a large whale is observed, this may be an indicator that additional marine mammals are present and nearby, and the vessel should take this into consideration when transiting. o Lookouts will use that knowledge to help inform their visual observations during military readiness activities that involve vessel movements, active sonar, in-water explosives (including underwater explosives and explosives deployed against surface targets), or the deployment of non-explosive ordnance against surface targets in the mitigation area.

Table ES-7: Summary of Mitigation to be Implemented Within Mitigation Areas (continued)

Summary of Mitigation Area Requirements
California Real-Time Notification Large Whale Mitigation Area
• The Action Proponents will issue real-time notifications to alert Action Proponent vessels operating in the vicinity of large whale aggregations sighted within 1 NM of an Action Proponent vessel within an area of the Southern California Range Complex (between 32–33 degrees North and 117.2–119.5 degrees West).   ○ Lookouts will use the information from the real-time notifications to inform their visual observations of applicable mitigation zones. If Lookouts observe a large whale aggregation within 1 NM of the event vicinity within the area between 32–33 degrees North and 117.2–119.5 degrees West, the watch station will initiate communication with the designated point of contact to contribute to the Navy's real-time sighting notification system.
San Nicolas Island Pinniped Haulout Mitigation Area
• Navy personnel shall not enter pinniped haulout or rookery areas. Personnel may be adjacent to pinniped haulouts and rookery prior to and following a launch for monitoring purposes. • Missiles shall not cross over pinniped haulout areas at altitudes less than 305 meters (1,000 feet). • The Navy may not conduct more than 10 launch events at night annually. • Launch events shall be scheduled to avoid the peak pinniped pupping seasons from January through July, to the maximum extent practicable. • The Navy shall implement a monitoring plan using video and acoustic monitoring of up to three pinniped haulout areas and rookeries during launch events that include missiles or targets that have not been previously monitored for at least three launch events.

ES.7 Other Considerations

ES.7.1 Consistency with Other Federal, State, and Local Regulations, and Executive Orders

Based on an evaluation of consistency with statutory obligations, the proposed military readiness activities would not conflict with the objectives or requirements of federal, state, regional, or local plans, policies, or legal requirements. Consultations with regulatory agencies are underway and will be completed prior to implementation of the Proposed Action to ensure all legal requirements are met.

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

In accordance with NEPA, this EIS/OEIS provides an analysis of the relationship between a project's short-term effects on the environment and the effects that these effects 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 effects 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.

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 effects 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.

The modernization of the existing SOAR, the installation of two Shallow Water Training Ranges, and the deployment of seafloor cables would result in the permanent consumption of various metals, plastics,

and other materials. Energy consumed by those activities and with all activities involving the use of vessels, aircraft, and munitions/explosives would be expended and irreversibly lost.

ES.7.4 Energy Requirements and Conservation Potential of Alternatives and Efficiency Initiatives

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 effects or the unnecessary, inefficient, or wasteful use of resources. Prevention of the introduction of potential contaminants is an important component of standard procedures followed by the military services. 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 affect range and training area capabilities.

ES.8 Public Involvement

ES.8.1 Scoping Process

The Navy published a Notice of Intent for this EIS/OEIS in the *Federal Register* and in 10 local and regional newspapers on December 15, 2023. A project website (https://www.nepa.navy.mil/hctteis/) was established to provide the public with project information and includes public notices; project fact sheet; maps; EIS/OEIS schedule; virtual open house scoping presentation; NEPA and National Historic Preservation Act Section 106 processes, including a National Historic Preservation Act Section 106 consulting party informational request form; links to completed projects and additional Navy resources; and project video. The public was able to submit comments via the website using the online comment form and subscribe to receive future notifications via email. A news release was distributed to local, regional, and national print media; social media posts were made; and email notifications were distributed to existing and new website subscribers. Stakeholder letters and fact sheets were mailed to 1,382 federal, state, and local elected officials and agencies; non-federally recognized Tribes and Tribal groups; and Native Hawaiian Organizations. The Notice of Intent provided an overview of the Proposed Action and the scope of the EIS/OEIS and initiated the scoping process.

ES.8.2 Scoping Comments

Scoping participants submitted comments in two ways:

- Written letters (received any time during the public comment period via postal mail or email)
- 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, Native Hawaiian Organizations, nongovernmental organizations, individuals, and community groups. A total of 22 website comments were submitted using the electronic comment form on the project website. A total of nine comments were emailed, and a total of five written comments were mailed. A sampling of specific concerns includes the following:

- military training around the Hawaiian Islands
- activities that may kill, injure, disorient, or have long-lasting effects on marine species and marine habitat
- effects from training with explosives

- unexploded ordnance and other debris as a result of military activities
- potential effects on submerged maritime heritage resources, such as aircrafts, shipwrecks, and archaeological sites
- noise effects on people, local communities, marine mammals, fishes, and seabirds in the Study Area, including the expanded airspace.
- the effectiveness of the Navy's mitigation measures, including Navy Lookouts

ES.8.3 Draft Environmental Impact Statement/Overseas Environmental Impact Statement

The Draft EIS/OEIS public review and comment period began with the issuance of the Notice of Availability and Notice of Public Meetings in the *Federal Register* on December 13, 2024. The military services held three public meetings from January 13, 2025, through January 16, 2025, and a virtual public meeting on January 22, 2025, to inform the public about the Proposed Action and environmental analysis, and to solicit public comments on the Draft EIS/OEIS.

The Draft EIS/OEIS public review and comment period was open from December 13, 2024, to February 11, 2025. The military services received comments during the public review and comment period from the in-person public meetings (written and verbal), via the project website's electronic comment form, via email, and by postal mail. All comments submitted are part of the public record, and relevant and substantive comments have been considered during the development of this Final EIS/OEIS.

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