
Hawaii-Southern California Training and Testing Activities Draft Environmental Impact Statement/ Overseas Environmental Impact Statement



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**DRAFT ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL
IMPACT STATEMENT**
for
HAWAII-SOUTHERN CALIFORNIA TRAINING AND TESTING ACTIVITIES

Lead Agency: United States Department of the Navy
Cooperating Agency: National Marine Fisheries Service
Title of the Proposed Action: Hawaii-Southern California Training and Testing Activities
Designation: Draft Environmental Impact Statement/Overseas Environmental Impact Statement

Abstract

The United States Department of the Navy (Navy) prepared this Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) in compliance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] § 4321 et seq.); the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (Title 40 Code of Federal Regulations [C.F.R.] §§ 1500 et seq.); Navy Procedures for Implementing NEPA (32 C.F.R. § 775); and Executive Order 12114, *Environmental Effects Abroad of Major Federal Actions*. The Navy identified its need to support and conduct current, emerging, and future training and testing activities in the Hawaii-Southern California Study Area (Study Area), which is made up of air and sea space off Southern California, around the Hawaiian Islands, and the air and sea space connecting them. Three alternatives are analyzed in this EIS/OEIS:

- The No Action Alternative represents those training and testing activities as set forth in previously completed environmental planning documentation.
- Alternative 1 includes the training and testing activities addressed in the No Action Alternative, includes an adjustment to the Hawaii study area boundaries and proposed adjustments to types, location, and levels of training and testing activities.
- Alternative 2 includes all elements of Alternative 1 plus establishes new range capabilities, modifies existing capabilities, and adjusts the type and tempo of training and testing.

In this EIS/OEIS, the Navy analyzes potential environmental impacts that result or could result from activities under the No Action Alternative, Alternative 1, and Alternative 2. The resources evaluated include sediments and water quality, air quality, marine habitats, marine mammals, sea turtles, seabirds, marine vegetation, marine invertebrates, fish, cultural resources, socioeconomic resources, and public health and safety.

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

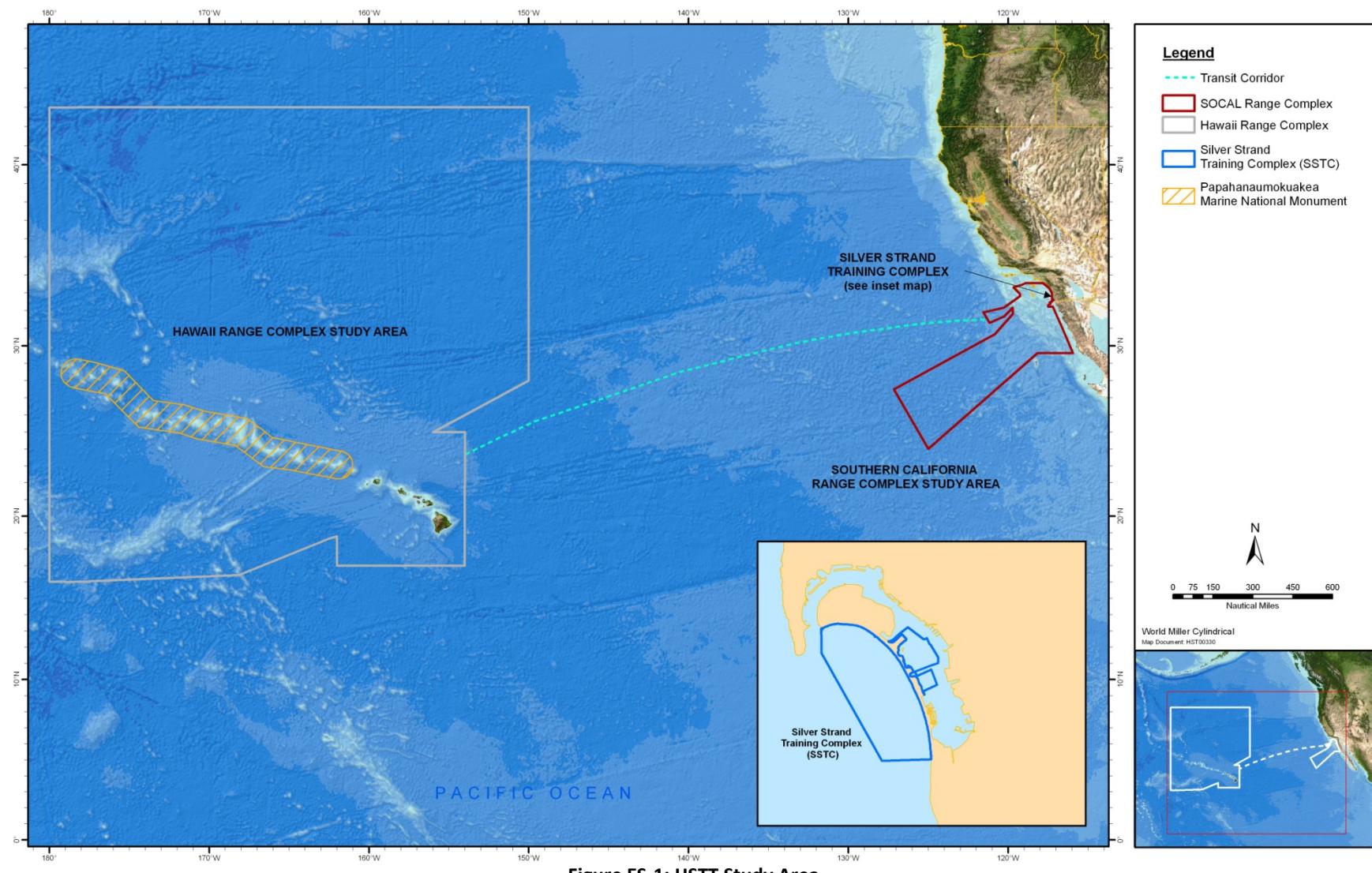
The United States (U.S.) Department of the Navy (Navy) prepared this Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) to assess the potential environmental impacts associated with two categories of military readiness activities: training and testing. Collectively, the at-sea areas in this EIS/OEIS are referred to as the Hawaii-Southern California Training and Testing (HSTT) Study Area (Study Area) (Figure ES-1). The Navy also prepared this EIS/OEIS to comply with the National Environmental Policy Act (NEPA) and Executive Order (EO) 12114.

Major conflicts, terrorism, lawlessness, and natural disasters all have the potential to threaten national security of the United States. National security, prosperity, and vital interests are increasingly tied to other nations because of the close relationships between the United States and other national economies. The Navy carries out training and testing activities to be able to protect the United States against its enemies, as well as to protect and defend the rights of the United States and its allies to move freely on the oceans. Training and testing activities that prepare the Navy to fulfill its mission to protect and defend the United States and its allies potentially impact the environment. These activities may trigger legal requirements identified in many U.S. federal environmental laws, regulations, and executive orders.

After thoroughly reviewing its environmental compliance requirements for training and exercises at sea, the Navy instituted a policy in the year 2000 designed to comprehensively address these requirements. That policy—the Navy’s At-Sea Policy—resulted, in part, in a series of comprehensive analyses of training and testing activities on U.S. at-sea range complexes and operating areas (OPAREAs). These analyses served as the basis for the National Marine Fisheries Service (NMFS) to issue Marine Mammal Protection Act (MMPA) incidental take authorizations because of the potential effects of some training and testing activities on species protected by federal law. The first of these analyses and incidental take authorizations resulted in a series of documents, completed in 2008 and 2009, for which incidental take authorizations begin to expire in early 2014. This EIS/OEIS updates these analyses and supports renewal of incidental take authorizations. This EIS/OEIS also furthers compliance with the Navy’s policy for comprehensive analysis by expanding the geographic scope to include additional areas where training and testing activities have historically occurred.

ES.2 PURPOSE OF AND NEED FOR PROPOSED MILITARY READINESS TRAINING AND TESTING ACTIVITIES

The purpose of the Proposed Action is to conduct training and testing activities to ensure that the Navy meets its mission, which is to maintain, train, and equip combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. This mission is achieved in part by conducting training and testing within the Study Area.



ES.3 SCOPE AND CONTENT OF THE ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT

In this EIS/OEIS, the Navy assessed military readiness training and testing activities that could potentially impact human and natural resources, especially marine mammals, sea turtles, and other marine resources. The range of alternatives includes a No Action Alternative and other reasonable courses of action. In this EIS/OEIS, the Navy analyzed direct, indirect, cumulative, short-term, long-term, irreversible, and irretrievable impacts. The Navy is the lead agency for the Proposed Action and is responsible for the scope and content of this EIS/OEIS. The NMFS is a cooperating agency because of its expertise and regulatory authority over marine resources. Additionally, this document will serve as NMFS' NEPA documentation for the rule-making process under the MMPA.

In accordance with the Council on Environmental Quality Regulations, 40 Code of Federal Regulations (C.F.R.) § 1505.2, the Navy will issue a Record of Decision that provides the rationale for choosing one of the alternatives. The decision will be based on factors analyzed in this EIS/OEIS, including military training and testing objectives, best available science and modeling data, potential environmental impacts, and public interest.

ES.3.1 NATIONAL ENVIRONMENTAL POLICY ACT

Federal agencies are required under NEPA to examine the environmental impacts of their proposed actions within the United States and its territories. An EIS is a detailed public document that provides an assessment of the potential effects that a major federal action might have on the human environment. The Navy undertakes environmental planning for major Navy actions occurring throughout the world in accordance with applicable laws, regulations, and executive orders. Based on Presidential Proclamation 5928, issued 27 December 1988, impacts on ocean areas that lie within 12 nautical miles (nm) of land (U.S. territory) are subject to analysis under NEPA.

ES.3.2 EXECUTIVE ORDER 12114

This OEIS has been prepared in accordance with EO 12114 (44 Federal Register 1957) and Navy implementing regulations in 32 C.F.R. Part 187, *Environmental Effects Abroad of Major Department of Defense Actions*. An OEIS is required when a proposed action and alternatives have the potential to significantly harm the environment of the global commons. The global commons are defined as geographical areas outside the jurisdiction of any nation and include the oceans outside of the territorial limits (more than 12 nm from the coast) and Antarctica but do not include contiguous zones and fisheries zones of foreign nations (32 C.F.R. § 187.3). The EIS and OEIS have been combined into one document, as permitted under NEPA and EO 12114, to reduce duplication.

ES.3.3 MARINE MAMMAL PROTECTION ACT

The MMPA of 1972 (16 United States Code [U.S.C.] § 1361 et seq.) established, with limited exceptions, a moratorium on the “taking” of marine mammals in waters or on lands under U.S. jurisdiction. The act further regulates “takes” of marine mammals in the global commons (that is, the high seas) by vessels or persons under U.S. jurisdiction. The term “take,” as defined in Section 3 (16 U.S.C. § 1362 [13]) of the MMPA, means “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.” “Harassment” was further defined in the 1994 amendments to the MMPA, which provided two levels of harassment: Level A (potential injury) and Level B (potential behavioral disturbance).

The MMPA directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified

activity (other than commercial fishing) within a specified geographical region if NMFS finds that the taking will have a negligible impact on the species or stock(s), and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant). The authorization must set forth the permissible methods of taking, other means of attaining the least practicable adverse impact on the species or stock and its habitat, and requirements pertaining to the mitigation, monitoring, and reporting of such taking.

The National Defense Authorization Act of Fiscal Year 2004 (Public Law 108-136) amended the definition of harassment and removed the “small numbers” provision as applied to military readiness activities or scientific research activities conducted by or on behalf of the federal government consistent with Section 104(c)(3) (16 U.S.C. § 1374 [c][3]). The Fiscal Year 2004 National Defense Authorization Act adopted the definition of “military readiness activity” as set forth in the Fiscal Year 2003 National Defense Authorization Act (Public Law 107-314). The Proposed Action constitutes military readiness activities as that term is defined in Public Law 107-314 because activities constitute “training and operations of the armed forces that relate to combat” and constitute “adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use.” For military readiness activities, the relevant definition of harassment is any act that

- injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild (“Level A harassment”) or
- disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering to a point where such behavioral patterns are abandoned or significantly altered (“Level B harassment”) [16 U.S.C. § 1362 (18)(B)(i) and (ii)].

ES.3.4 ENDANGERED SPECIES ACT

The Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531 et seq.) established protection over and conservation of threatened and endangered species and the ecosystems upon which they depend. An “endangered” species is a species in danger of extinction throughout all or a significant portion of its range. A “threatened” species is one that is likely to become endangered within the near future throughout all or in a significant portion of its range. The U.S. Fish and Wildlife Service and NMFS jointly administer the ESA and are also responsible for the listing of species (designating a species as either threatened or endangered). The ESA allows the designation of geographic areas as critical habitat for threatened or endangered species. Section 7(a)(2) requires each federal agency to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. When a federal agency's action “may affect” a listed species, that agency is required to consult with NMFS or U.S. Fish and Wildlife Service, depending on the jurisdiction (50 C.F.R. 402.14[a]). Under the terms of Section 7(b)(4) and Section 7(o)(2) of the ESA, taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the act provided that such taking complies with the terms and conditions of an Incidental Take Statement. The ESA applies to marine mammals, sea turtles, sea birds, marine invertebrates, fish, and plants evaluated in this EIS/OEIS.

ES.3.5 OTHER ENVIRONMENTAL REQUIREMENTS CONSIDERED

The Navy must comply with all applicable federal environmental laws, regulations, and EOs, including, but not limited to, those listed below. Further information on Navy compliance with these and other environmental laws, regulations, and EOs can be found in Chapters 3 and 6.

- Clean Air Act
- Clean Water Act
- Coastal Zone Management Act
- Magnuson-Stevens Fishery Conservation and Management Act
- Migratory Bird Treaty Act
- National Historic Preservation Act
- National Marine Sanctuaries Act
- Rivers and Harbors Act
- Antiquities Act
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*
- EO 12962, *Recreational Fisheries*
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*
- EO 13089, *Coral Reef Protection*
- EO 13158, *Marine Protected Areas*
- EO 13175, *Consultation and Coordination with Indian Tribal Governments*
- EO 13547, *Stewardship of the Ocean, Our Coasts, and the Great Lakes*

ES.4 PUBLIC INVOLVEMENT

The National Environmental Policy Act of 1969 (NEPA) requires federal agencies to examine the environmental effects of their proposed actions within U.S. territories. An EIS is a detailed public document that provides an assessment of the potential effects that a major federal action might have on the human environment. The Navy undertakes environmental planning for major Navy actions occurring throughout the world in accordance with applicable laws, regulations, and executive orders.

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 in the *Federal Register* and several newspapers on 15 July, 2010. In addition, Notice of Intent/Notice of Scoping Meeting Letters were distributed on 14 July 2010, to 230 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 EIS, and initiated the scoping process.

ES.4.1 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.

Six scoping meetings were held on August 4, 5, 24, 25, 26 and 27 in the cities of San Diego, CA; Lakewood, CA; Lihue, HI; Honolulu, HI; Hilo, HI; and Kahului, HI, respectively. At each scoping meeting, staffers at the welcome station greeted guests and encouraged them to sign in to be added to the project mailing list to receive future notifications. In total, 131 people signed in at the welcome table. The meetings were held in an open house format, presenting informational posters and written information, with Navy staff and project experts available to answer participants’ questions.

Additionally, a digital voice recorder was available to record participants' oral comments. The interaction during the information sessions was productive and helpful to the Navy.

ES.4.2 SCOPING COMMENTS

Scoping participants submitted comments in five ways:

- Oral statements at the public meetings (as recorded by the tape recorder)
- Written comments at the public meetings
- Written letters (received any time during the public comment period)
- Electronic mail (received any time during the public comment period)
- Comments submitted directly on the project website (received any time during the public comment period)

In total, the Navy received comments from 72 individuals and groups. Because many of the comments addressed more than one issue, 228 total comments resulted. Table ES-1 provides a breakdown of areas of concern based on comments received during scoping. The summary following Table ES-1 provides an overview of comments and is organized by area of concern.

Table ES-1: Public Scoping Comment Summary

Area of Concern	Count	Percent of Total
Sonar/Underwater Detonations	44	19.3%
Marine Mammals	43	18.9%
Other	30	13.2%
Fish/Marine Habitat	29	12.7%
Meeting/NEPA Process	11	4.8%
Alternatives	10	4.4%
Regional Economy	9	3.9%
Noise	9	3.9%
Threatened and Endangered Species	8	3.5%
Proposed Action	7	3.1%
Water Quality	6	2.6%
Air Quality	5	2.2%
Depleted Uranium	5	2.2%
Public Health and Safety	4	1.8%
Cumulative Impacts	4	1.8%
Terrestrial/Birds	3	1.3%
Recreation	1	0.4%
TOTAL	228	

ES.4.3 DRAFT ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT

This Draft EIS/OEIS has been prepared to assess potential impacts of the proposed action and alternatives on the environment. A Notice of Availability was published in the *Federal Register* and

notices were placed in local and regional newspapers announcing the availability of the Draft EIS/OEIS. This Draft EIS/OEIS is circulated for review and comment, and public meetings will be held.

ES.4.4 FINAL ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT/RECORD OF DECISION

The Final EIS/OEIS (scheduled for completion in Fall 2013) addresses all public comments received on the Draft EIS. Responses to public comments may include correction of data, clarifications of and modifications to analytical approaches, and inclusion of new or additional data or analyses. Finally, the decision-maker will issue a Record of Decision no earlier than 30 days after the Final EIS/OEIS is made available to the public.

ES.5 PROPOSED ACTION AND ALTERNATIVES

The Navy proposes to conduct military readiness training and testing activities throughout the in-water areas around the Hawaiian Islands and off the coast of Southern California, primarily in established operating and military warning areas of the Study Area. In order to both achieve and maintain Fleet readiness, the Navy proposes to:

- Reassess the environmental analyses of Navy at-sea training and testing activities contained in three separate EIS/OEIS documents and various Environmental Assessment (EA)/Overseas Environmental Assessments (OEAs), and consolidate these analyses into a single environmental planning document. The three EIS/OEIS documents are for the Hawaii Range Complex (HRC) (U.S. Department of the Navy 2008a), Southern California (SOCAL) Range Complex (U.S. Department of the Navy 2008b), and Silver Strand Training Complex (SSTC) (U.S. Department of the Navy 2011). The reassessment of the environmental analyses of these documents will support reauthorization of incidental takes of marine mammals under the MMPA and Section 7 consultation under the ESA.
- Adjust baseline training and testing activities from current levels needed to support Navy training and testing requirements beginning in 2014. As part of the adjustment to current baseline activities, the Navy is accounting for other activities and sound sources not addressed in the previous analyses.
- Analyze the environmental impacts of training and testing activities conducted during transits between SOCAL and HRC, in additional areas where training and testing have historically occurred, and at Navy ports, Navy shipyards, contractor shipyards and the transit channels serving these areas.
- Update the at-sea impact analysis in the previous documents to account for force structure changes, including those resulting from the development and testing and use of new platforms, weapons, and systems expected to reach initial operating capability after 2014 and before 2019.
- Implement enhanced range capabilities.
- Update environmental analyses with the best available science and acoustic analysis methods currently available to evaluate the potential effects of military training and testing activities on the marine environment.

ES.5.1 No ACTION ALTERNATIVE

The No Action Alternative is required by regulations of the Council on Environmental Quality as a baseline against which the impacts of the Proposed Action are compared. The No Action Alternative continues baseline training and testing activities and force structure requirements as defined by existing Navy environmental planning documents.

The No Action Alternative represents the activities and events analyzed in previously completed documents. However, it would fail to meet the current purpose and need for the Navy's Proposed Action because it would not allow the Navy to conduct the training and testing activities necessary to achieve and maintain Fleet readiness. For example, the baseline activities do not account for changes in force structure requirements, the introduction of weapons and platforms, and the training and testing required for proficiency with these systems.

ES.5.2 ALTERNATIVE 1

This alternative consists of the No Action Alternative, plus the expansion of Study Area boundaries and adjustments to location and tempo of training and testing activities.

- **Adjustment of the Study Area:** This EIS/OEIS contains analysis of areas where Navy training and testing would continue as in the past, but were not considered in previous environmental analyses. This Alternative would not expand the area where the Navy trains and tests, but would simply expand the area that is to be analyzed.
- **Adjustments to Locations and Tempo of Training and Testing Activities:** This alternative also includes changes to training and testing requirements necessary to accommodate (a) the relocation of ships, aircraft, and personnel, (b) planned aircraft, vessels, and weapons systems, and (c) ongoing activities not addressed in previous documentation.
 - **Force Structure Changes:** Force structure changes involve the relocation of ships, aircraft, and personnel. As forces are moved within the existing Navy structure, training needs will necessarily change as the location of forces change.
 - **Planned Aircraft, Vessels, and Weapons Systems:** This EIS/OEIS will examine the training and testing requirements of planned vessels, aircraft, and weapons systems that the Navy would use in the Study Area.
 - **Ongoing Activities:** Current training and testing activities that were not addressed in previous documentation will be analyzed in this EIS/OEIS.

Alternative 1 reflects the adjustment to the baseline necessary to support all current and proposed Navy at-sea training and testing activities through 2019.

ES.5.3 ALTERNATIVE 2

Alternative 2 is the Preferred Alternative. Alternative 2 consists of Alternative 1 plus: the establishment of new range capabilities, as well as modifications of existing capabilities; adjustments to type and tempo of training and testing; and the establishment of additional locations to conduct activities between the range complexes. This alternative is contingent upon potential budget increases, strategic necessity, and future training and testing requirements.

Alternative 2 would include the following:

- New infrastructure requirements for the testing of autonomous vehicles near San Clemente Island.
- Introduction of surface ships outfitted with railgun capability, and the testing of, and training with this new weapon system.
- Introduction of broad area maritime surveillance unmanned aerial vehicles and their use during maritime patrol aircraft anti-submarine warfare testing and training events;
- Incremental (10 percent) increase in testing events, such as an increased number of unmanned/autonomous vehicle activities.
- Increased/accelerated delivery of surface ships necessitating increased number of ship trials and other post delivery test and trial events.

- Hydrophone modification, upgrade, and replacement at underwater tracking ranges at the Pacific Missile Range Facility.

ES.6 SUMMARY OF ENVIRONMENTAL EFFECTS

Environmental effects which might result from the implementation of the Navy's Proposed Action or alternatives have been analyzed in this EIS/OEIS. Resource areas analyzed include sediment and water quality, air quality, marine mammals, sea turtles, sea birds, marine vegetation, marine invertebrates, fish, marine habitats, marine protected areas, cultural resources, socioeconomic resources, and public health and safety. The effects on these resources are summarized in Table ES-2. This table provides a comparison of the environmental impacts of the No Action Alternative, Alternative 1, and Alternative 2.

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

Resource Category	Summary of Impacts
Sediments and Water Quality	<p>No Action Alternative: Stressors analyzed include explosives and explosion byproducts, metals, chemicals other than explosives, and other materials.</p> <p>Impacts of explosion byproducts could be short-term and local, while impacts of unconsumed explosives and metals could be long-term and local. Chemical, physical, or biological changes in sediment or water quality would be measurable but below applicable standards, regulations, and guidelines, and within existing conditions or designated uses.</p> <p>Impacts of metals could be long-term and local. Corrosion and biological processes would reduce exposure of military expended materials to seawater, decreasing the rate of leaching, and most leached metals would bind to sediments and other organic matter. Sediments near military expended materials would contain some metals, but concentrations would be below applicable standards, regulations, and guidelines.</p> <p>Impacts of chemicals other than explosives and impacts of other materials could be both short- and long-term and local. Chemical, physical, or biological changes in sediment or water quality would not be detectable, and would be within existing conditions or designated uses.</p> <p>Impacts of other materials could be short-term and local. Most other materials from military expended materials would not be harmful to marine organisms, and would consumed during use. Chemical, physical, or biological changes in sediment or water quality would not be detectable.</p> <p>Alternative 1: Impacts to sediments and water quality would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to sediments and water quality would be the same as those described under the No Action Alternative.</p>
Air Quality	<p>No Action Alternative: Stressors analyzed include criteria air pollutants and hazardous air pollutants.</p> <p>All reasonably foreseeable direct and indirect emissions of criteria air pollutants in nonattainment and maintenance areas do not equal or exceed applicable <i>de minimis</i> levels.</p> <p>The public would not be exposed to substantial concentrations of hazardous air pollutants.</p> <p>Alternative 1: Impacts to air quality would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to air quality would be the same as those described under the No Action Alternative.</p>
Marine Habitats	<p>No Action Alternative: Stressors analyzed include acoustic (underwater explosions) and physical disturbance and strikes (vessels and in-water devices, military expended materials, and seafloor devices).</p> <p>The combined effects of acoustic stressors, physical disturbances, and strike stressors proposed for training and testing events in the No Action Alternative would not diminish the ability of soft shores, soft bottoms, hard shores, hard bottoms, or artificial substrates to function as habitat.</p> <p>Alternative 1: Impacts to marine habitats would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to marine habitats would be the same as those described under the No Action Alternative.</p>

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

Resource Category	Summary of Impacts
Marine Mammals	<p>No Action Alternative: Stressors analyzed include acoustic (sonar, explosives, pile driving, airguns, weapons firing noise, vessel and simulated vessel noise, and aircraft noise), energy (electromagnetic), physical disturbance and strike (vessels, in-water devices, military expended materials, and seafloor devices), entanglement (cables and wires, parachutes), ingestion (munitions and military expended materials other than munitions), and secondary stressors (sediments, water quality, and transmission of marine diseases and parasites).</p> <p>Per the Marine Mammal Protection Act (MMPA), the only acoustic sources that are expected to result in Level A or Level B harassment are impulsive and non-impulsive (sonar, explosives, and pile driving).</p> <p>Per the Endangered Species Act (ESA), acoustic sources may affect, and are likely to adversely affect, ESA-listed marine mammals. Acoustic sources will have no effect on critical habitat.</p> <p>Per the MMPA, energy sources are not expected to result in Level A or Level B harassment of marine mammals.</p> <p>Per the ESA, energy sources may affect but are not likely to adversely affect ESA-listed species. Energy sources will have no effect on critical habitat.</p> <p>Per the MMPA, physical disturbances and strikes may result in mortality or Level A harassment of marine mammals.</p> <p>Per the ESA, physical disturbances and strikes may affect, and are likely to adversely affect ESA-listed species. Physical disturbance and strikes will have no effect on critical habitat.</p> <p>Per the MMPA, entanglement is not expected to result in Level A or Level B harassment of marine mammals.</p> <p>Per the ESA, entanglement may affect but is not likely to adversely affect ESA-listed species.</p> <p>Per the MMPA, ingestion is not expected to result in Level A or Level B harassment of marine mammals.</p> <p>Per the ESA, ingestion may affect but is not likely to adversely affect ESA-listed species.</p> <p>Per the MMPA, secondary stressors are not expected to result in Level A or Level B harassment of marine mammals.</p> <p>Per the ESA, secondary stressors may affect but are not likely to adversely affect ESA-listed species.</p> <p>Alternative 1: Impacts to marine mammals would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to marine mammals would be the same as those described under the No Action Alternative.</p>

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

Resource Category	Summary of Impacts
Sea Turtles	<p>No Action Alternative: Stressors analyzed include acoustic (sonar and other active sources of noise, explosives, pile driving, swimmer defense airguns, vessel noise, and aircraft noise), energy (electromagnetic devices), physical disturbance and strikes (vessels and in-water devices, military expended materials, and seafloor devices), entanglement (cables, wires, and parachutes), ingestion (munitions and military expended materials other than munitions), and secondary (habitat, sediments, and water quality).</p> <p>Per the Endangered Species Act (ESA), acoustic stressors may affect and are likely to adversely affect green, hawksbill, olive ridley, leatherback, and loggerhead sea turtles.</p> <p>Per the ESA, physical disturbance and strike stressors may affect and are likely to adversely affect green, hawksbill, olive ridley, leatherback, and loggerhead sea turtles.</p> <p>Per the ESA, the effects of energy sources used during training and testing activities may affect, but are not likely to adversely affect, ESA-listed green, hawksbill, olive ridley, leatherback, and loggerhead turtles.</p> <p>Per the ESA, the effects of entanglement stressors used during training and testing activities may affect, but are not likely to adversely affect, ESA-listed green, hawksbill, olive ridley, leatherback, and loggerhead sea turtles.</p> <p>Per the ESA, the effects of ingestion stressors used during training and testing activities may affect, but are not likely to adversely affect, ESA-listed green, hawksbill, olive ridley, leatherback, and loggerhead sea turtles.</p> <p>Per the ESA, secondary stressors would not affect sea turtles because changes in sediment, water, and air quality are not likely to be detectable, and no detectable changes in growth, survival, propagation, or population-levels of sea turtles are anticipated.</p> <p>Alternative 1: Impacts to sea turtles would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to sea turtles would be the same as those described under the No Action Alternative.</p>
Seabirds	<p>No Action Alternative: Stressors analyzed include acoustic (tactical acoustic sonar and other acoustic devices, explosions, pile driving, swimmer defense airguns, vessel noise, and aircraft noise), energy (electromagnetic), physical disturbance and strikes (aircraft, vessels and in-water devices, and military expended materials), and ingestion (munitions and military expended materials other than munitions).</p> <p>Per the Endangered Species Act (ESA), acoustic sources may affect but are not likely to adversely affect ESA-listed seabirds. Acoustic sources would not affect critical habitat.</p> <p>Per the ESA, energy sources may affect but are not likely to adversely affect ESA-listed seabirds. Energy sources would not affect critical habitat.</p> <p>Per the ESA, physical disturbance and strike sources may affect but are not likely to adversely affect ESA-listed seabirds. Physical disturbance and strike sources would not affect critical habitat.</p> <p>Per the ESA, ingestion sources may affect but are not likely to adversely affect ESA-listed seabirds. Ingestion sources would not affect critical habitat.</p> <p>Alternative 1: Impacts to seabirds would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to seabirds would be the same as those described under the No Action Alternative.</p>

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

Resource Category	Summary of Impacts
Marine Vegetation	<p>No Action Alternative: Stressors analyzed include acoustic (explosions) and physical disturbance and strikes (vessel and in-water devices, military expended materials, and seafloor devices).</p> <p>No Endangered Species Act listed marine vegetation species are found in the Hawaii-Southern California Training and Testing Study Area.</p> <p>Explosions and physical disturbance or strikes could affect marine vegetation by destroying individual plants or damaging parts of plants. The impacts of these stressors are not expected to result in detectable changes in growth, survival, or propagation, and are not expected to result in population-level impacts on marine plant species.</p> <p>Secondary stressors are not expected to result in detectable changes in growth, survival, propagation, or population-level impacts because changes in sediment and water quality or air quality are not likely to be detectable.</p> <p>These conclusions are based on the fact that the areas of impact are very small compared to the relative distribution and the locations where explosions or physical disturbance or strikes occur.</p> <p>Alternative 1: Impacts to marine vegetation would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to marine vegetation would be the same as those described under the No Action Alternative.</p>
Marine Invertebrates	<p>No Action Alternative: Stressors analyzed include acoustic (sonar and other non-impulsive acoustic sources, explosions, and other impulsive acoustic sources), energy (electromagnetic), physical disturbance or strikes (vessels and in-water devices, military expended materials, seafloor devices), entanglement (cables, wires, and parachutes), ingestion (military expended materials), and secondary stressors (metals and chemicals).</p> <p>Per the Endangered Species Act (ESA), acoustic stressors may affect, but are not likely to adversely affect, ESA-listed black abalone (<i>Haliotis cracherodii</i>) or white abalone (<i>Haliotis sorenseni</i>) species. Acoustic stressors would have no effect on designated critical habitat.</p> <p>Per the ESA, energy stressors would have no effect on ESA-listed black abalone or white abalone species. Energy stressors would have no effect on designated critical habitat.</p> <p>Per the ESA, physical disturbance and strike stressors may affect, but are not likely to adversely affect, ESA-listed black abalone or white abalone species. Physical disturbance and strike stressors would have no effect on designated critical habitat.</p> <p>Per the ESA, entanglement stressors would have no effect on ESA-listed black abalone or white abalone species. Entanglement stressors would have no effect on designated critical habitat.</p> <p>Per the ESA, ingestion stressors would have no effect on ESA-listed black abalone or white abalone species. Ingestion stressors would have no effect on designated critical habitat.</p> <p>Per the ESA, secondary stressors would have no effect on ESA-listed black abalone or white abalone species. Secondary stressors would have no effect on designated critical habitat.</p> <p>Alternative 1: Impacts to marine invertebrates would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to marine invertebrates would be the same as those described under the No Action Alternative.</p>

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

Resource Category	Summary of Impacts
Fish	<p>No Action Alternative: Stressors analyzed include acoustic (sonar and other non-impulsive acoustic sources, explosions and other impulsive acoustic sources), energy (electromagnetic), physical disturbance or strike (vessels and in-water devices, military expended materials, seafloor devices), entanglement (cables and wires, parachutes), ingestion (munitions and military expended materials other than munitions).</p> <p>Per Endangered Species Act (ESA) standards, acoustic sources may affect but are not likely to adversely affect ESA-listed steelhead trout. Acoustic sources would not affect critical habitat.</p> <p>Per ESA standards, energy sources used during training and testing activities may affect but are not likely to adversely affect ESA-listed steelhead trout. Energy sources would not affect critical habitat.</p> <p>Per ESA standards, physical disturbance and strike sources used during training and testing activities would have no effect on ESA-listed steelhead trout. Physical disturbance and strikes would not affect critical habitat.</p> <p>Per ESA standards, entanglement sources from cables, wires, and parachutes used during training and testing activities would have no effect on ESA-listed steelhead trout. Entanglement sources would not affect critical habitat.</p> <p>Per ESA standards, ingestion sources from military expended materials (munitions and non-munitions) used during training and testing activities would have no effect on ESA-listed steelhead trout. Ingestion sources would not affect critical habitat.</p> <p>Per ESA standards, secondary stressors from training and testing activities would have no effect on ESA-listed steelhead trout. Ingestion sources would not affect critical habitat.</p> <p>Alternative 1: Impacts to fish would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to fish would be the same as those described under the No Action Alternative.</p>
Cultural Resources	<p>No Action Alternative: Stressors analyzed include acoustic (underwater explosions at depth, cratering from underwater detonations at depth, aircraft and sonic booms, and pile-driving) and physical disturbance (use of towed-in-water devices, deposition of military expended materials, and use of sea floor devices).</p> <p>Acoustic and physical stressors, as indicated above, could adversely affect submerged prehistoric sites and unrecorded submerged historic resources in accordance with Section 106 of the National Historic Preservation Act. The Proposed Action is not anticipated to affect known cultural resources within the Study Area, and Programmatic Agreements between the Navy and State Historic Preservation Offices exist to address the discovery of previously unknown resources. Accordingly, the Navy does not intend to formally consult with the California or Hawaii State Historic Preservation Office. Consultation could be required in the future under Section 106 of the National Historic Preservation Act, however, to resolve any adverse effects on cultural resources anticipated to occur within state territorial waters (within 3 nm).</p> <p>Alternative 1: Impacts to cultural resources would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to cultural resources would be the same as those described under the No Action Alternative.</p>

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

Resource Category	Summary of Impacts
Socioeconomic Resources	<p>No Action Alternative: Stressors analyzed include accessibility (limiting access to the ocean and the air), physical disturbance and strikes (aircraft, vessels and in-water devices, and military expended materials), airborne acoustics (weapons firing, aircraft and vessel noise), and secondary stressors from changes to the availability of marine resources.</p> <p>Accessibility stressors are not expected to result in impacts on commercial transportation and shipping, commercial and recreational fishing, subsistence use, or tourism because inaccessibility to areas of co-use would be temporary and of short duration (hours).</p> <p>Physical disturbance and strikes are not expected to result in impacts on commercial and recreational fishing, subsistence use, or tourism because of the large size of the Study Area, the limited areas of operations, and implementation of the Navy's standard operating procedures.</p> <p>Airborne acoustic stressors are not expected to result in impacts to tourism or recreational activity because the Navy's training and testing would occur well out to sea, far from tourism and recreation locations.</p> <p>Secondary stressors are not expected to result in impacts to fishing, subsistence use, or tourism, based on the level of impacts described in other resources sections.</p> <p>Alternative 1: Impacts to socioeconomic resources would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Impacts to socioeconomic resources would be the same as those described under the No Action Alternative.</p>
Public Health and Safety	<p>No Action Alternative: Stressors analyzed include underwater energy, in-air energy, physical interactions, and secondary impacts from sediment and water quality changes.</p> <p>Because of the Navy's standard operating procedures, impacts on public health and safety would be unlikely.</p> <p>Alternative 1: Public health and safety impacts would be the same as those described under the No Action Alternative.</p> <p>Alternative 2: Public health and safety impacts would be the same as those described under the No Action Alternative.</p>

Notes: EIS/OEIS = Environmental Impact Statement/Overseas Environmental Impact Statement; ESA = Endangered Species Act; MMPA = Marine Mammal Protection Act

ES.6.1 CUMULATIVE IMPACTS

Marine mammals and sea turtles are the primary resources of concern for cumulative impacts analysis:

- Past human activities have impacted these resources to the extent that several marine mammal species and all sea turtles species occurring in the Study Area are ESA-listed.
- These resources would be impacted by multiple ongoing and future actions.
- Explosive detonations and vessel strikes under the No Action Alternative, Alternative 1, and Alternative 2 have the potential to disturb, injure, or kill marine mammals and sea turtles.

The aggregate impacts of past, present, and other reasonably foreseeable future actions are expected to result in significant impacts on marine mammal and sea turtle species, although the contribution to those impacts from the Navy's proposed activities is low (see Summary of Impacts to marine mammals and sea turtles in Table ES-2 above). The No Action Alternative, Alternative 1, or Alternative 2 would contribute to cumulative impacts, but the relative contribution would be low compared to other actions. Compared to potential mortality, strandings, or injury resulting from Navy training and testing activities, marine mammal and sea turtle mortality and injury from bycatch, commercial vessel ship strikes, entanglement, ocean pollution, and other human causes are estimated to be orders of magnitude greater (hundreds of thousands of animals versus tens of animals).

The incremental contribution of the No Action Alternative, Alternative 1, or Alternative 2 to cumulative impacts on sediments and water quality, air quality, marine habitats, birds, marine vegetation, marine invertebrates, fish, socioeconomic resources, and public health and safety would be negligible. When considered with other actions, the No Action Alternative, Alternative 1, or Alternative 2 might contribute to cumulative impacts on submerged prehistoric and historic resources, if such resources are present in areas where bottom-disturbing training and testing activities take place. The No Action Alternative, Alternative 1, or Alternative 2 would also make an incremental contribution to greenhouse gas emissions, representing approximately 0.03 percent of U.S. 2009 greenhouse gas emissions, respectively.

ES.6.2 MITIGATION MEASURES

Table ES-3 provides a summary of the Navy's proposed mitigation measures. Each mitigation measure is described, along with the anticipated benefit of the mitigation, as well as the criteria used to evaluate the efficacy of the mitigation. The table also includes a description of how each mitigation measure will be implemented, the command assigned responsibility for implementing the measure, and the estimated completion date for implementation.

In order to make the findings necessary to issue an MMPA letter of authorization, it may be necessary for NMFS to require additional mitigation measures or monitoring beyond those contained in this Draft EIS/OEIS. These could include measures considered, but eliminated in this EIS/OEIS, or as yet undeveloped measures. The public will have an opportunity to provide information to NMFS through the MMPA process, both during the comment period following NMFS' notice of receipt of the application for a letter of authorization, and during the comment period following publication of the proposed rule. NMFS may propose additional mitigation measures or monitoring in the proposed rule.

Table ES-3: Mitigation Identification and Implementation

Mitigation Measure	Benefit	Evaluation Criteria	Implementation	Responsible Command	Date Implemented
Marine Species Awareness Training All personnel standing watch on the bridge and lookouts will successfully complete the training before standing watch or serving as a lookout.	To learn the procedures for searching for and recognizing the presence of marine species, including detection cues (e.g., congregating seabirds) so that potentially harmful interactions can be avoided.	Successful completion of training by all personnel standing watch and all personnel serving as lookouts. Personnel successfully applying skills learned during training.	The multimedia training program has been made available to personnel required to take the training. Personnel have been and will continue to be required to take the training prior to standing watch and serving as lookouts.	Officer Conducting the Exercise or Test	Ongoing
Lookouts					
Use of Four or Eight Lookouts for Underwater Detonations Mine countermeasure and neutralization activities using time delay will use four or eight lookouts, depending on the explosives being used. If applicable, aircrew and divers will report sightings of marine mammals or sea turtles.	Lookouts can visually detect marine species so that potentially harmful impacts to marine mammals and sea turtles from explosives use can be avoided. Dedicated lookouts can more quickly, and effectively relay sighting information so that corrective action can be taken. Support from aircrew and divers, if they are involved in the activity, will increase the probability of sightings, reducing the potential for impacts.	Annual report documenting marine mammal and sea turtle sightings, including an accuracy assessment (actual vs. false sightings). Annual report documenting the number of marine mammals and sea turtles sighted, including trend analysis after 3 years and organized by species. Annual report documenting the number of incidents when a Navy activity was halted or delayed as a direct result of a marine mammal or sea turtle sighting. Reduction in the number of known incidents of marine mammal and sea turtle fatalities associated with Navy activities.	All lookouts will receive marine species awareness training and will be positioned on vessels, boats, and aircraft as described in Section 5.3.1.	Officer Conducting the Exercise or Test	Ongoing
Use of One or Two Lookouts Vessels using low-frequency active sonar or hull-mounted mid-frequency active sonar associated with ASW activities will have either one or two lookouts, depending on the activity and size of the vessel. Mine countermeasure and neutralization activities with positive control will use two lookouts, with one on each support vessel. If applicable, aircrew and divers will also report the presence of marine mammals or sea turtles. One lookout may be used under certain circumstances specific in Section 5.3.1.2.1. Sinking Exercises will use two lookouts (one in an aircraft and one on a vessel). At sea explosives testing will have at least one lookout.	Lookouts can visually detect marine species so that potentially harmful impacts to marine mammals and sea turtles from Navy sonar and explosives use can be avoided. Dedicated lookouts can more quickly and effectively relay sighting information so that corrective action can be taken. Support from aircrew and divers, if they are involved in the activity, will increase the probability of sightings, reducing the potential for impacts.				
Use of One Lookout Surface ships and aircraft conducting ASW, ASUW, or MIW activities using HFAS, non-hull mounted mid-frequency active sonar, helicopter dipping mid-frequency active sonar, anti-swimmer grenades, IEER sonobuoys, line charge testing, surface gunnery activities, surface missile activities, bombing activities, explosive torpedo testing, elevated causeway system pile driving, towed mine neutralization activities, full power propulsion testing of surface vessels, and activities using non-explosive practice munitions, will have one lookout.	Lookouts can visually detect marine species so that potentially harmful impacts to marine mammals and sea turtles from Navy sonar, explosives, sonobuoys, gunnery rounds, missiles, explosive torpedoes, pile driving, towed systems, surface vessel propulsion, and non-explosive munitions can be avoided. A dedicated lookout can more quickly and effectively relay sighting information so that corrective action can be taken.				

Table ES-3: Mitigation Identification and Implementation (continued)

Mitigation Measure	Benefit	Evaluation Criteria	Implementation	Responsible Command	Date Implemented
Mitigation Zones					
Use of a Mitigation Zone A mitigation zone is an area defined by a radius and centered on the location of a sound source or activity. The size of each mitigation zone is specific to a particular training or testing activity (e.g., sonar use or explosive use).	A mitigation zone defines the area in which lookouts survey for marine mammals and sea turtles. Mitigation zones reduce the potential for injury to marine species.	For those activities where monitoring is required, record observations of marine mammals and sea turtles located outside of the mitigation zone and note any apparent reactions to on-going Navy activities. Observation of acute reactions may be used as an indicator that the radius of the mitigation zone needs to be increased.	Mitigation zones have been and will continue to be implemented as described in Section 5.3.2. Lookouts are trained to conduct observations within mitigation zones of different sizes.	Officer Conducting the Exercise or Test	Ongoing
Establishment of the Humpback Whale Cautionary Area The Navy has designated a humpback whale cautionary area (described in Section 5.3.3), which consists of a 5 km (3.1 miles [mi.]) mitigation zone that has been identified as having one of the highest concentrations of humpback whales during the period between 15 December and 15 April.	Expanded mitigation zone, greater than mitigation zones typically established for applicable activities, would provide greater protection for humpback whales from mid-frequency active sonar between 15 December and 15 April. This approach will reduce potential interactions between humpback whales and U.S. Navy training activities during the period when the whales are most common. This training can occur in this area during this time period only with approval by the Commander, U.S. Pacific Fleet. This requirement elevates awareness of the importance of environmental stewardship at all levels within the Navy.	Record observations of humpback whales within the mitigation zone and note any apparent reactions to on-going Navy activities. Observation of acute reactions may be used as an indicator that the radius of the mitigation zone needs to be increased or that the cautionary area needs to be centered on a different location. Reduction in the number of interactions with humpback whales between 15 December and 15 April.	The cautionary area has been and will continue to be implemented as described in Section 5.3.3. Lookouts are trained to conduct observations within the cautionary area.	Commander, Pacific Fleet	Implemented as of 28 June, 2008.
Recognize the Importance of Marine Protected Areas In general, most Armed Forces activities are exempt from the prohibitions marine protected areas. Nevertheless, the Navy would carry out its training and testing activities in a manner that will avoid, to the maximum extent practicable and consistent with training and testing requirements, adverse impacts to National Marine Sanctuary resources.	Avoiding or minimizing impacts while operating in or near marine protected areas could result in improved health of the resources in the areas.	No known evaluation criteria	The Navy includes maps in the Protective Measures Assessment Protocol to define marine protected areas. To the greatest extent practicable, adverse impacts to these areas will be avoided.	Officer Conducting the Exercise or Test	Ongoing

ES.6.3 OTHER CONSIDERATIONS

ES.6.3.1 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 is consulting and will continue to consult with regulatory agencies as appropriate during the NEPA process and prior to implementation of the Proposed Action to ensure all legal requirements are met.

ES.6.3.2 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 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.

ES.6.3.3 Irreversible or Irretrievable Commitment of Resources

For the alternatives including the Proposed Action, most resource commitments are neither irreversible nor irretrievable. Most impacts are short-term and temporary 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 fuels used by aircraft and vessels. 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.6.3.4 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 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.

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TABLE OF CONTENTS

1 PURPOSE AND NEED.....	1-1
1.1 INTRODUCTION	1-1
1.2 THE NAVY'S ENVIRONMENTAL COMPLIANCE AND AT-SEA POLICY	1-3
1.3 PROPOSED ACTION	1-4
1.4 PURPOSE OF AND NEED FOR PROPOSED MILITARY READINESS TRAINING AND TESTING ACTIVITIES	1-4
1.4.1 WHY THE NAVY TRAINS.....	1-4
1.4.2 FLEET READINESS TRAINING PLAN	1-5
1.4.2.1 Basic Phase.....	1-5
1.4.2.2 Integrated Phase.....	1-6
1.4.2.3 Sustainment Phase.....	1-6
1.4.2.4 Maintenance Phase	1-6
1.4.3 WHY THE NAVY TESTS.....	1-6
1.5 OVERVIEW AND STRATEGIC IMPORTANCE OF EXISTING RANGE COMPLEXES	1-8
1.5.1 HAWAII RANGE COMPLEX.....	1-9
1.5.2 SOUTHERN CALIFORNIA RANGE COMPLEX	1-10
1.5.3 SILVER STRAND TRAINING COMPLEX.....	1-10
1.6 THE ENVIRONMENTAL PLANNING PROCESS	1-10
1.6.1 NATIONAL ENVIRONMENTAL POLICY ACT REQUIREMENTS.....	1-10
1.6.2 EXECUTIVE ORDER 12114	1-11
1.6.3 OTHER ENVIRONMENTAL REQUIREMENTS CONSIDERED	1-11
1.7 SCOPE AND CONTENT	1-12
1.8 ORGANIZATION OF THIS ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT	1-12
1.9 RELATED ENVIRONMENTAL DOCUMENTS.....	1-12
2 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES	2-1
2.1 DESCRIPTION OF THE HAWAII-SOUTHERN CALIFORNIA TRAINING AND TESTING STUDY AREA	2-2
2.1.1 HAWAII RANGE COMPLEX.....	2-4
2.1.1.1 Special Use Airspace	2-4
2.1.1.2 Sea and Undersea Space.....	2-7
2.1.2 SOUTHERN CALIFORNIA RANGE COMPLEX	2-7
2.1.2.1 Special Use Airspace	2-7
2.1.2.2 Sea and Undersea Space.....	2-15
2.1.3 SILVER STRAND TRAINING COMPLEX.....	2-15
2.1.4 OCEAN OPERATING AREAS OUTSIDE THE BOUNDS OF EXISTING RANGE COMPLEXES (TRANSIT CORRIDOR)	2-15
2.1.5 PIERSIDE LOCATIONS.....	2-17
2.2 PRIMARY MISSION AREAS	2-18
2.2.1 ANTI-AIR WARFARE.....	2-18
2.2.2 AMPHIBIOUS WARFARE.....	2-18
2.2.3 STRIKE WARFARE	2-19
2.2.4 ANTI-SURFACE WARFARE	2-19
2.2.5 ANTI-SUBMARINE WARFARE	2-20
2.2.6 ELECTRONIC WARFARE.....	2-20
2.2.7 MINE WARFARE.....	2-21
2.2.8 NAVAL SPECIAL WARFARE	2-21

2.3 DESCRIPTIONS OF SONAR, ORDNANCE/MUNITIONS, TARGETS, AND OTHER SYSTEMS EMPLOYED IN HAWAII-SOUTHERN CALIFORNIA TRAINING AND TESTING EVENTS	2-22
2.3.1 SONAR AND OTHER ACOUSTIC SOURCES	2-22
2.3.1.1 What is Sonar?	2-22
2.3.1.2 Sonar Systems	2-23
2.3.2 ORDNANCE/MUNITIONS	2-28
2.3.3 TARGETS	2-32
2.3.4 DEFENSIVE COUNTERMEASURES	2-34
2.3.5 MINE WARFARE SYSTEMS.....	2-34
2.3.6 MILITARY EXPENDED MATERIALS	2-37
2.3.7 CLASSIFICATION OF ACOUSTIC AND EXPLOSIVE SOURCES	2-38
2.3.7.1 Sources Qualitatively Analyzed.....	2-41
2.3.7.2 Source Classes Qualitatively Analyzed.....	2-42
2.4 PROPOSED ACTIVITIES.....	2-44
2.4.1 HAWAII-SOUTHERN CALIFORNIA TRAINING AND TESTING PROPOSED TRAINING ACTIVITIES	2-45
2.4.2 PROPOSED TESTING ACTIVITIES.....	2-50
2.4.2.1 Naval Air Systems Command Testing Activities.....	2-50
2.4.2.2 Naval Sea Systems Command Testing Events.....	2-53
2.4.2.2.1 New Ship Construction Activities.....	2-53
2.4.2.2.2 Life Cycle Activities	2-54
2.4.2.2.3 Other Naval Sea Systems Command Testing Activities	2-54
2.4.2.2.4 Space and Naval Warfare Systems Command Testing Events.....	2-57
2.4.2.2.5 Office of Naval Research and Naval Research Laboratory Testing Events	2-58
2.5 ALTERNATIVES DEVELOPMENT	2-59
2.5.1 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION	2-59
2.5.1.1 Alternative Training and Testing Locations	2-59
2.5.1.2 Mitigations Including Temporal or Geographic Constraints within the Study Area.....	2-60
2.5.1.3 Simulated Training and Testing	2-60
2.5.1.3.1 Simulated Training	2-60
2.5.1.3.2 Simulated Testing	2-61
2.5.2 ALTERNATIVES CARRIED FORWARD.....	2-62
2.6 NO ACTION ALTERNATIVE: CURRENT MILITARY READINESS WITHIN THE HAWAII-SOUTHERN CALIFORNIA TRAINING AND TESTING STUDY AREA.....	2-63
2.7 ALTERNATIVE 1: EXPANSION OF STUDY AREA PLUS ADJUSTMENTS TO THE BASELINE AND ADDITIONAL WEAPONS, PLATFORMS, AND SYSTEMS	2-63
2.7.1 PROPOSED ADJUSTMENTS TO BASELINE TRAINING ACTIVITIES.....	2-64
2.7.1.1 Anti-Air Warfare.....	2-64
2.7.1.2 Amphibious Warfare.....	2-64
2.7.1.3 Strike Warfare	2-66
2.7.1.4 Anti-Surface Warfare	2-66
2.7.1.5 Anti-Submarine Warfare.....	2-66
2.7.1.6 Electronic Warfare	2-66
2.7.1.7 Mine Warfare.....	2-66
2.7.1.8 Naval Special Warfare.....	2-66
2.7.1.9 Other Training	2-66
2.7.2 PROPOSED ADJUSTMENTS TO BASELINE TESTING ACTIVITIES.....	2-67
2.7.2.1 New Ship Construction	2-67
2.7.2.2 Life Cycle Activities	2-67

2.7.2.3	Anti-Air Warfare.....	2-67
2.7.2.4	Anti-Surface Warfare	2-67
2.7.2.5	Anti-Submarine Warfare.....	2-67
2.7.2.6	Mine Warfare Testing	2-67
2.7.2.7	Shipboard Protection Systems and Swimmer Defense Testing.....	2-67
2.7.2.8	Unmanned Vehicle Testing	2-67
2.7.2.9	Other Testing	2-67
2.7.3	PROPOSED PLATFORMS AND SYSTEMS	2-68
2.7.3.1	Aircraft	2-68
2.7.3.2	Ships.....	2-68
2.7.3.3	Unmanned Vehicles and Systems.....	2-70
2.7.3.3.1	Unmanned Undersea Vehicles.....	2-70
2.7.3.3.2	Unmanned Surface Vehicles	2-70
2.7.3.3.3	Unmanned Aerial Systems.....	2-70
2.7.3.4	Missiles/Rockets/Bombs.....	2-71
2.7.3.5	Guns	2-71
2.7.3.6	Munitions.....	2-72
2.7.3.7	Other Systems.....	2-72
2.7.4	PROPOSED NEW ACTIVITIES	2-73
2.8	ALTERNATIVE 2: INCLUDES ALTERNATIVE 1 PLUS INCREASED TEMPO OF TRAINING AND TESTING ACTIVITIES ...	2-74
2.8.1	PROPOSED ADJUSTMENTS TO ALTERNATIVE 1 TRAINING ACTIVITIES	2-74
2.8.2	PROPOSED ADJUSTMENTS TO ALTERNATIVE 1 TESTING ACTIVITIES	2-74
2.8.2.1	New Ship Construction	2-74
2.8.2.2	Life Cycle Activities	2-74
2.8.2.3	Anti-Surface Warfare/Anti-Submarine Warfare	2-74
2.8.2.4	Mine Warfare Testing	2-74
2.8.2.5	Shipboard Protection Systems and Swimmer Defense Testing.....	2-74
2.8.2.6	Unmanned Vehicle Testing	2-75
2.8.2.7	Other Testing	2-75

CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3	AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....	3.0-1
3.0	INTRODUCTION	3.0-1
3.0.1	REGULATORY FRAMEWORK.....	3.0-2
3.0.1.1	Federal Statutes	3.0-2
3.0.1.2	Executive Orders	3.0-5
3.0.1.3	Guidance	3.0-5
3.0.2	DATA SOURCES AND BEST AVAILABLE DATA.....	3.0-6
3.0.2.1	Geographical Information Systems Data	3.0-6
3.0.2.2	Navy Integrated Comprehensive Monitoring Program	3.0-7
3.0.2.3	Marine Species Density Database.....	3.0-7
3.0.3	ECOLOGICAL CHARACTERIZATION OF THE HAWAII-SOUTHERN CALIFORNIA TRAINING AND TESTING STUDY AREA	3.0-7
3.0.3.1	Biogeographic Classifications.....	3.0-8
3.0.3.2	Bathymetry	3.0-11
3.0.3.3	Currents, Circulation Patterns, and Water Masses	3.0-15
3.0.3.4	Oceanic Fronts	3.0-22

3.0.3.5 Water Column Characteristics and Processes	3.0-22
3.0.4 ACOUSTIC AND EXPLOSIVES PRIMER	3.0-26
3.0.4.1 Terminology/Glossary.....	3.0-26
3.0.4.2 Sound Metrics	3.0-29
3.0.4.3 Loudness and Auditory Weighting Functions	3.0-32
3.0.4.4 Predicting How Sound Travels	3.0-33
3.0.4.5 Ambient Noise	3.0-38
3.0.4.6 Underwater Sounds	3.0-38
3.0.4.7 Aerial Sounds	3.0-41
3.0.5 OVERALL APPROACH TO ANALYSIS.....	3.0-41
3.0.5.1 Resources and Issues Evaluated	3.0-44
3.0.5.2 Resources and Issues Eliminated from Further Consideration.....	3.0-44
3.0.5.3 Identification of Stressors for Analysis	3.0-44
3.0.5.4 Resource-Specific Impacts Analysis for Individual Stressors	3.0-99
3.0.5.5 Resource-Specific Impacts Analysis for Multiple Stressors	3.0-100
3.0.5.6 Cumulative Impacts	3.0-101
3.0.5.7 Biological Resource Methods.....	3.0-101
3.1 SEDIMENTS AND WATER QUALITY	3.1-1
3.1.1 INTRODUCTION AND METHODS	3.1-1
3.1.1.1 Introduction.....	3.1-1
3.1.1.2 Methods.....	3.1-8
3.1.2 AFFECTED ENVIRONMENT.....	3.1-11
3.1.2.1 Sediments	3.1-11
3.1.2.2 Water Quality.....	3.1-16
3.1.3 ENVIRONMENTAL CONSEQUENCES	3.1-22
3.1.3.1 Explosives and Explosion Byproducts	3.1-22
3.1.3.2 Metals	3.1-36
3.1.3.3 Chemicals Other than Explosives.....	3.1-46
3.1.3.4 Other Materials.....	3.1-56
3.1.3.5 Summary of Potential Impacts (Combined Impact of All Stressors) on Sediments and Water Quality.....	3.1-62
3.2 AIR QUALITY	3.2-1
3.2.1 INTRODUCTION AND METHODS	3.2-1
3.2.1.1 Introduction	3.2-1
3.2.1.2 Methods.....	3.2-2
3.2.1.3 Climate Change	3.2-12
3.2.1.4 Other Compliance Considerations, Requirements, and Practices.....	3.2-13
3.2.2 AFFECTED ENVIRONMENT	3.2-13
3.2.2.1 Region of Influence	3.2-13
3.2.2.2 Climate of the Study Area.....	3.2-14
3.2.2.3 Regional Emissions.....	3.2-15
3.2.2.4 Existing Air Quality.....	3.2-16
3.2.3 ENVIRONMENTAL CONSEQUENCES	3.2-17
3.2.3.1 Criteria Air Pollutants.....	3.2-17

3.2.3.2 Hazardous Air Pollutants.....	3.2-30
3.2.4 SUMMARY OF POTENTIAL IMPACTS (COMBINED IMPACTS OF ALL STRESSORS) ON AIR QUALITY	3.2-32
3.2.4.1 No Action Alternative	3.2-32
3.2.4.2 Alternative 1	3.2-32
3.2.4.3 Alternative 2	3.2-32

3.3 MARINE HABITATS.....3.3-1

3.3.1 INTRODUCTION AND METHODS	3.3-1
3.3.2 AFFECTED ENVIRONMENT	3.3-2
3.3.2.1 Vegetated Shores.....	3.3-3
3.3.2.2 Soft Shores.....	3.3-3
3.3.2.3 Hard Shores.....	3.3-4
3.3.2.4 Aquatic Beds	3.3-6
3.3.2.5 Soft Bottoms	3.3-6
3.3.2.6 Hard Bottoms.....	3.3-7
3.3.2.7 Artificial Structures	3.3-9
3.3.3 ENVIRONMENTAL CONSEQUENCES	3.3-14
3.3.3.1 Acoustic Stressors - Underwater Explosions.....	3.3-14
3.3.3.2 Physical Disturbance and Strike Stressors	3.3-18
3.3.3.3 Summary of Potential Impacts (Combined Impacts of All Stressors) on Marine Habitats....	3.3-32

3.4 MARINE MAMMALS.....3.4-1

3.4.1 INTRODUCTION AND METHODS	3.4-1
3.4.1.1 Species Unlikely to be Present in Hawaii-Southern California Study Area.....	3.4-12
3.4.2 AFFECTED ENVIRONMENT	3.4-13
3.4.2.1 Group Size	3.4-14
3.4.2.2 Diving	3.4-14
3.4.2.3 Vocalization and Hearing of Marine Mammals	3.4-15
3.4.2.4 General Threats	3.4-19
3.4.2.5 Humpback Whale (<i>Megaptera novaeangliae</i>).....	3.4-21
3.4.2.6 Blue Whale (<i>Balaenoptera musculus</i>).....	3.4-25
3.4.2.7 Fin Whale (<i>Balaenoptera physalus</i>)	3.4-27
3.4.2.8 Sei Whale (<i>Balaenoptera borealis</i>)	3.4-28
3.4.2.9 Bryde's Whale (<i>Balaenoptera brydei/edeni</i>)	3.4-30
3.4.2.10 Minke Whale (<i>Balaenoptera acutorostrata</i>)	3.4-32
3.4.2.11 Gray Whale (<i>Eschrichtius robustus</i>)	3.4-33
3.4.2.12 Sperm Whale (<i>Physeter macrocephalus</i>)	3.4-35
3.4.2.13 Pygmy Sperm Whale (<i>Kogia breviceps</i>)	3.4-36
3.4.2.14 Dwarf Sperm Whale (<i>Kogia sima</i>)	3.4-38
3.4.2.15 Killer Whale (<i>Orcinus orca</i>)	3.4-39
3.4.2.16 False Killer Whale (<i>Pseudorca crassidens</i>)	3.4-41
3.4.2.17 Pygmy Killer Whale (<i>Feresa attenuata</i>)	3.4-44
3.4.2.18 Short-finned Pilot Whale (<i>Globicephala macrorhynchus</i>)	3.4-45
3.4.2.19 Melon-headed Whale (<i>Peponocephala electra</i>)	3.4-47
3.4.2.20 Long-beaked Common Dolphin (<i>Delphinus capensis</i>)	3.4-48
3.4.2.21 Short-beaked Common Dolphin (<i>Delphinus delphis</i>).....	3.4-49

3.4.2.22 Common Bottlenose Dolphin (<i>Tursiops truncatus</i>)	3.4-50
3.4.2.23 Pantropical Spotted Dolphin (<i>Stenella attenuata</i>)	3.4-53
3.4.2.24 Striped Dolphin (<i>Stenella coeruleoalba</i>)	3.4-54
3.4.2.25 Spinner Dolphin (<i>Stenella longirostris</i>)	3.4-55
3.4.2.26 Rough-toothed Dolphin (<i>Steno bredanensis</i>)	3.4-57
3.4.2.27 Pacific White-sided Dolphin (<i>Lagenorhynchus obliquidens</i>).....	3.4-58
3.4.2.28 Northern Right Whale Dolphin (<i>Lissodelphis borealis</i>)	3.4-60
3.4.2.29 Fraser's Dolphin (<i>Lagenodelphis hosei</i>)	3.4-61
3.4.2.30 Risso's Dolphin (<i>Grampus griseus</i>).....	3.4-62
3.4.2.31 Dall's Porpoise (<i>Phocoenoides dalli</i>)	3.4-63
3.4.2.32 Cuvier's Beaked Whale (<i>Ziphius cavirostris</i>)	3.4-64
3.4.2.33 Baird's Beaked Whale (<i>Berardius bairdii</i>)	3.4-65
3.4.2.34 Blainville's Beaked Whale (<i>Mesoplodon densirostris</i>)	3.4-67
3.4.2.35 Longman's Beaked Whale (<i>Indopacetus pacificus</i>).....	3.4-68
3.4.2.36 Ginkgo-toothed Beaked Whale (<i>Mesoplodon ginkgodens</i>).....	3.4-69
3.4.2.37 Perrin's Beaked Whale (<i>Mesoplodon perrini</i>)	3.4-70
3.4.2.38 Stejneger's Beaked Whale (<i>Mesoplodon stejnegeri</i>)	3.4-71
3.4.2.39 Hubbs' Beaked Whale (<i>Mesoplodon carlhubbsi</i>).....	3.4-73
3.4.2.40 Pygmy Beaked Whale (<i>Mesoplodon peruvianus</i>)	3.4-74
3.4.2.41 California Sea Lion (<i>Zalophus californianus</i>)	3.4-75
3.4.2.42 Northern Fur Seal (<i>Callorhinus ursinus</i>).....	3.4-77
3.4.2.43 Guadalupe Fur Seal (<i>Arctocephalus townsendi</i>)	3.4-78
3.4.2.44 Hawaiian Monk Seal (<i>Monachus schauinslandi</i>).....	3.4-79
3.4.2.45 Northern Elephant Seal (<i>Mirounga angustirostris</i>)	3.4-85
3.4.2.46 Harbor Seal (<i>Phoca vitulina</i>)	3.4-87
3.4.2.47 Sea Otter (<i>Enhydra lutris</i>)	3.4-89
3.4.3 ENVIRONMENTAL CONSEQUENCES	3.4-91
3.4.3.1 Acoustic Stressors	3.4-92
3.4.3.2 Energy Stressors	3.4-230
3.4.3.3 Physical Disturbance and Strike Stressors	3.4-233
3.4.3.4 Entanglement Stressors	3.4-250
3.4.3.5 Ingestion Stressors.....	3.4-258
3.4.3.6 Impacts from Military Expended Materials Other than Munitions	3.4-265
3.4.3.7 Impacts from Secondary Stressors	3.4-273
3.4.4 SUMMARY OF IMPACTS (COMBINED IMPACTS OF ALL STRESSORS) ON MARINE MAMMALS	3.4-277
3.4.5 MARINE MAMMAL PROTECTION ACT DETERMINATIONS.....	3.4-278
3.4.6 ENDANGERED SPECIES ACT DETERMINATIONS	3.4-279
3.5 SEA TURTLES	3.5-1
3.5.1 INTRODUCTION	3.5-1
3.5.1.1 Endangered Species	3.5-1
3.5.2 AFFECTED ENVIRONMENT	3.5-3
3.5.2.1 Sea Turtles.....	3.5-3
3.5.2.2 Green Sea Turtle (<i>Chelonia mydas</i>)	3.5-6
3.5.2.3 Hawksbill Sea Turtle (<i>Eretmochelys imbricata</i>)	3.5-10
3.5.2.4 Loggerhead Sea Turtle (<i>Caretta caretta</i>)	3.5-13
3.5.2.5 Olive Ridley Sea Turtle (<i>Lepidochelys olivacea</i>)	3.5-16

3.5.2.6 Leatherback Sea Turtle (<i>Dermochelys coriacea</i>).....	3.5-20
3.5.3 ENVIRONMENTAL CONSEQUENCES	3.5-25
3.5.3.1 Acoustic Stressors	3.5-25
3.5.3.2 Quantitative Analysis	3.5-36
3.5.3.3 Impacts of Energy Stressors.....	3.5-65
3.5.3.4 Physical Disturbance and Strike Stressors	3.5-68
3.5.3.5 Entanglement Stressors	3.5-76
3.5.3.6 Ingestion Stressors.....	3.5-83
3.5.3.7 Secondary Stressors.....	3.5-92
3.5.3.8 Summary of Potential Impacts (Combined Impacts of All Stressors) on Sea Turtles	3.5-94
3.5.3.9 Endangered Species Act Determinations.....	3.5-95
3.6 SEABIRDS.....	3.6-1
3.6.1 INTRODUCTION	3.6-1
3.6.1.1 Endangered Species Act Species.....	3.6-1
3.6.1.2 Major Bird Groups	3.6-2
3.6.1.3 Migratory Bird Treaty Act Species	3.6-2
3.6.1.4 United States Fish and Wildlife Service Birds of Conservation Concern	3.6-3
3.6.2 AFFECTED ENVIRONMENT	3.6-6
3.6.2.1 Group Size	3.6-7
3.6.2.2 Diving Information	3.6-8
3.6.2.3 Bird Hearing	3.6-8
3.6.2.4 General Threats	3.6-9
3.6.2.5 California Least Tern (<i>Sternula antillarum browni</i>).....	3.6-9
3.6.2.6 Hawaiian Petrel (<i>Pterodroma sandwichensis</i>)	3.6-11
3.6.2.7 Short-tailed Albatross (<i>Phoebastria albatrus</i>)	3.6-13
3.6.2.8 Marbled Murrelet (<i>Brachyramphus marmoratus</i>)	3.6-15
3.6.2.9 Newell's Shearwater (<i>Puffinus auricularis newelli</i>)	3.6-17
3.6.2.10 Albatrosses, Petrels, Shearwaters, and Storm-petrels (order Procellariiformes)	3.6-19
3.6.2.11 Tropicbirds, Boobies, Pelicans, Cormorants, and Frigatebirds (order Pelecaniformes)	3.6-19
3.6.2.12 Phalaropes, Gulls, Noddies, Terns, Skua, Jaegers, and Alcids (order Charadriiformes)	3.6-19
3.6.3 ENVIRONMENTAL CONSEQUENCES	3.6-20
3.6.3.1 Acoustic Stressors	3.6-21
3.6.3.2 Energy Stressors.....	3.6-43
3.6.3.3 Physical Disturbance and Strike Stressors	3.6-48
3.6.3.4 Ingestion Stressors.....	3.6-62
3.6.3.5 Secondary Stressors.....	3.6-68
3.6.4 SUMMARY OF POTENTIAL IMPACTS (COMBINED IMPACTS OF ALL STRESSORS)ON SEABIRDS.....	3.6-68
3.6.5 ENDANGERED SPECIES ACT DETERMINATIONS	3.6-69
3.6.6 MIGRATORY BIRD ACT DETERMINATIONS	3.6-72
3.7 MARINE VEGETATION	3.7-1
3.7.1 INTRODUCTION	3.7-1
3.7.2 AFFECTED ENVIRONMENT	3.7-2
3.7.2.1 General Threats	3.7-3
3.7.2.2 Taxonomic Groups	3.7-4

3.7.3 ENVIRONMENTAL CONSEQUENCES	3.7-8
3.7.3.1 Acoustic Stressors	3.7-8
3.7.3.2 Physical Disturbance and Strike Stressors	3.7-12
3.7.3.3 Secondary Stressors.....	3.7-22
3.7.3.4 Summary of Potential Impacts (Combined Impacts of All Stressors) on Marine Vegetation.....	3.7-22
3.8 MARINE INVERTEBRATES	3.8-1
3.8.1 INTRODUCTION	3.8-1
3.8.1.1 Endangered Species Act-Listed Species.....	3.8-2
3.8.1.2 Federally Managed Species	3.8-3
3.8.1.3 Taxonomic Groups	3.8-3
3.8.2 AFFECTED ENVIRONMENT.....	3.8-5
3.8.2.1 Invertebrate Hearing and Vocalization.....	3.8-6
3.8.2.2 General Threats	3.8-7
3.8.2.3 Black Abalone (<i>Haliotis cracherodii</i>)	3.8-8
3.8.2.4 White Abalone (<i>Haliotis sorenseni</i>)	3.8-10
3.8.2.5 Coral Candidate Species for Endangered Species Act Listing	3.8-13
3.8.2.6 Foraminiferans, Radiolarians, Ciliates (Phylum Protozoa).....	3.8-15
3.8.2.7 Sponges (Phylum Porifera)	3.8-16
3.8.2.8 Corals, Hydroids, Jellyfish (Phylum Cnidaria).....	3.8-16
3.8.2.9 Flatworms (Phylum Platyhelminthes).....	3.8-17
3.8.2.10 Ribbon Worms (Phylum Nemertea)	3.8-17
3.8.2.11 Round Worms (Phylum Nematoda).....	3.8-17
3.8.2.12 Segmented Worms (Phylum Annelida).....	3.8-18
3.8.2.13 Bryozoans (Phylum Bryozoa)	3.8-18
3.8.2.14 Squid, Bivalves, Sea Snails, Chitons (Phylum Molluska)	3.8-18
3.8.2.15 Shrimp, Crab, Lobster, Barnacles, Copepods (Phylum Arthropoda).....	3.8-19
3.8.2.16 Sea Stars, Sea Urchins, Sea Cucumbers (Phylum Echinodermata)	3.8-19
3.8.3 ENVIRONMENTAL CONSEQUENCES	3.8-20
3.8.3.1 Acoustic Stressors (non-impulsive and impulsive sources)	3.8-20
3.8.3.2 Energy Stressors.....	3.8-33
3.8.3.3 Physical Disturbance and Strike.....	3.8-37
3.8.3.4 Entanglement Stressors	3.8-52
3.8.3.5 Ingestion Stressors.....	3.8-59
3.8.3.6 Secondary Stressors.....	3.8-62
3.8.3.7 Summary of Potential Impacts (Combined Impacts of All Stressors) on Marine Invertebrates.....	3.8-66
3.9 FISH	3.9-1
3.9.1 INTRODUCTION AND METHODS	3.9-1
3.9.1.1 Endangered Species Act Species.....	3.9-2
3.9.1.2 Taxonomic Groups	3.9-3
3.9.1.3 Federally Managed Species	3.9-5
3.9.2 AFFECTED ENVIRONMENT	3.9-14
3.9.2.1 Hearing and Vocalization	3.9-15

3.9.2.2 General Threats	3.9-17
3.9.2.3 Steelhead Trout (<i>Oncorhynchus mykiss</i>).....	3.9-19
3.9.2.4 Jawless Fishes (Orders Myxiniformes and Petromyzontiformes).....	3.9-22
3.9.2.5 Sharks, Rays, and Chimaeras (Class Chondrichthyes).....	3.9-22
3.9.2.6 Eels and Bonefishes (Orders Anguilliformes and Elopiformes)	3.9-23
3.9.2.7 Smelt and Salmonids (Orders Argentiniformes, Osmeriformes, and Salmoniformes).....	3.9-23
3.9.2.8 Dragonfishes and Lanternfishes (Orders Stomiiformes and Myctophiformes).....	3.9-24
3.9.2.9 Greeneyes, Lizardfishes, Lancetfishes, and Telescopefishes (Order Aulopiformes)	3.9-24
3.9.2.10 Cods and Cusk-eels (Orders Gadiformes and Ophidiiformes)	3.9-24
3.9.2.11 Toadfishes and Anglerfishes (Orders Batrachoidiformes and Lophiiformes).....	3.9-25
3.9.2.12 Mullets, Silversides, Needlefish, and Killifish (Orders Mugiliformes, Atheriniformes, Beloniformes, and Cyprinodontiformes)	3.9-25
3.9.2.13 Oarfishes, Squirrelfishes, and Dories (Orders Lampridiformes, Beryciformes, and Zeiformes).....	3.9-25
3.9.2.14 Pipefishes and Seahorses (Order Gasterosteiformes)	3.9-26
3.9.2.15 Scorpionfishes (Order Scorpaeniformes).....	3.9-26
3.9.2.16 Croakers, Drums, and Snappers (Families Sciaenidae and Lutjanidae).....	3.9-26
3.9.2.17 Groupers and Seabasses (Family Serranidae).....	3.9-27
3.9.2.18 Wrasses, Parrotfish, and Damselfishes (Families Labridae, Scaridae, and Pomacentridae) ..	3.9-27
3.9.2.19 Gobies, Blennies, and Surgeonfishes (Suborders Gobioidei, Blennioidei, and Acanthuroidei).....	3.9-27
3.9.2.20 Jacks, Tunas, Mackerels, and Billfishes (Families Carangidae, Scombridae, Xiphiidae, and Istiophoridae).....	3.9-28
3.9.2.21 Flounders (Order Pleuronectiformes).....	3.9-28
3.9.2.22 Triggerfish, Puffers, and Molas (Order Tetraodontiformes).....	3.9-28
3.9.3 ENVIRONMENTAL CONSEQUENCES	3.9-29
3.9.3.1 Acoustic Stressors	3.9-29
3.9.3.2 Energy Stressors.....	3.9-57
3.9.3.3 Physical Disturbance and Strike Stressors	3.9-62
3.9.3.4 Entanglement Stressors	3.9-77
3.9.3.5 Ingestion Stressors.....	3.9-86
3.9.3.6 Secondary Stressors.....	3.9-97
3.9.4 SUMMARY OF POTENTIAL IMPACTS ON FISH	3.9-100
3.9.4.1 Combined Impacts of All Stressors	3.9-100
3.9.4.2 Endangered Species Act Determinations.....	3.9-101
3.10 CULTURAL RESOURCES	3.10-1
3.10.1 INTRODUCTION AND METHODS	3.10-1
3.10.1.1 Introduction	3.10-1
3.10.1.2 Identification, Evaluation, and Treatment of Cultural Resources	3.10-2
3.10.1.3 Methods.....	3.10-3
3.10.2 AFFECTED ENVIRONMENT	3.10-5
3.10.2.1 Hawaii	3.10-6
3.10.2.2 Southern California	3.10-10
3.10.2.3 Hawaii-Southern California Training and Testing Transit Corridor.....	3.10-12
3.10.2.4 Current Practices.....	3.10-12
3.10.3 ENVIRONMENTAL CONSEQUENCES	3.10-14

3.10.3.1 Acoustic Stressors	3.10-15
3.10.3.2 Physical Disturbance and Strike Stressors	3.10-19
3.10.3.3 Summary of Potential Impacts (Combined Impact of All Stressors) on Cultural Resources	3.10-24
3.10.3.4 Regulatory Determinations.....	3.10-24

3.11 SOCIOECONOMIC RESOURCES.....	3.11-1
3.11.1 INTRODUCTION AND METHODS	3.11-1
3.11.2 AFFECTED ENVIRONMENT	3.11-2
3.11.2.1 Transportation and Shipping	3.11-2
3.11.2.2 Commercial and Recreational Fishing.....	3.11-12
3.11.2.3 Subsistence Use	3.11-16
3.11.2.4 Tourism	3.11-17
3.11.3 ENVIRONMENTAL CONSEQUENCES	3.11-25
3.11.3.1 Accessibility.....	3.11-26
3.11.3.2 Physical Disturbances and Strikes.....	3.11-30
3.11.3.3 Airborne Acoustics.....	3.11-33
3.11.4 ANALYSIS OF SECONDARY STRESSORS.....	3.11-35
3.11.5 SUMMARY OF POTENTIAL IMPACTS (COMBINED IMPACTS OF ALL STRESSORS) ON SOCIOECONOMICS.....	3.11-35

3.12 PUBLIC HEALTH AND SAFETY.....	3.12-1
3.12.1 INTRODUCTION AND METHODS	3.12-1
3.12.1.1 Introduction	3.12-1
3.12.1.2 Methods.....	3.12-1
3.12.2 AFFECTED ENVIRONMENT	3.12-2
3.12.2.1 Overview	3.12-2
3.12.2.2 Safety and Inspection Procedures	3.12-4
3.12.3 ENVIRONMENTAL CONSEQUENCES	3.12-8
3.12.3.1 Underwater Energy.....	3.12-9
3.12.3.2 In-Air Energy	3.12-13
3.12.3.3 Physical Interactions	3.12-15
3.12.4 SECONDARY IMPACTS.....	3.12-18
3.12.5 SUMMARY OF POTENTIAL IMPACTS (COMBINED IMPACTS OF ALL STRESSORS) ON PUBLIC HEALTH AND SAFETY.....	3.12-18

4 CUMULATIVE IMPACTS.....	4-1
4.1 INTRODUCTION	4-1
4.2 APPROACH TO ANALYSIS	4-1
4.2.1 OVERVIEW	4-1
4.2.2 IDENTIFY APPROPRIATE LEVEL OF ANALYSIS FOR EACH RESOURCE.....	4-2
4.2.3 DEFINE THE GEOGRAPHIC BOUNDARIES AND TIMEFRAME FOR ANALYSIS	4-2
4.2.4 DESCRIBE CURRENT RESOURCE CONDITIONS AND TRENDS	4-2
4.2.5 IDENTIFY POTENTIAL IMPACTS OF THE ALTERNATIVES THAT MIGHT CONTRIBUTE TO CUMULATIVE IMPACTS	4-3
4.2.6 IDENTIFY OTHER ACTIONS AND OTHER ENVIRONMENTAL CONSIDERATIONS THAT AFFECT EACH RESOURCE	4-3
4.2.7 ANALYZE POTENTIAL CUMULATIVE IMPACTS	4-4

4.3 OTHER ACTIONS ANALYZED IN THE CUMULATIVE IMPACTS ANALYSIS.....	4-4
4.3.1 OVERVIEW	4-4
4.3.2 OIL AND NATURAL GAS EXPLORATION, EXTRACTION, AND PRODUCTION	4-4
4.3.2.1 Proposed Outer Continental Shelf Oil and Gas Leasing Program 2012-2017.....	4-4
4.3.2.2 Liquefied Natural Gas Terminals.....	4-4
4.3.3 OFFSHORE POWER GENERATION.....	4-9
4.3.3.1 Marine Hydrokinetic Projects	4-9
4.3.4 DREDGE DISPOSAL, BEACH NOURISHMENT, AND MINING	4-9
4.3.4.1 Offshore Dredge Disposal Program	4-9
4.3.4.2 Beach Nourishment Programs.....	4-9
4.3.5 OTHER MILITARY ACTIVITIES	4-9
4.3.5.1 Scripps Pier Replacement at Point Loma.....	4-9
4.3.5.2 Naval Base Point Loma Fuel Pier.....	4-9
4.3.5.3 Submarine Drive-In Magnetic Silencing Facility Beckoning Point, Oahu, Hawaii.....	4-10
4.3.5.4 Establishment and Realignment of Navy Helicopter Squadrons on the West Coast	4-10
4.3.5.5 San Clemente Island Fuel Storage and Distribution System.....	4-10
4.3.5.6 Pier 12 Replacement and Dredging Naval Base San Diego.....	4-10
4.3.5.7 Homeporting Littoral Combat Ships on the West Coast.....	4-10
4.3.5.8 Surveillance Towed Array Sensor System Low Frequency Active Sonar	4-11
4.3.5.9 Space and Naval Warfare Systems Command - Electronic Harbor Security System Environmental Assessment	4-11
4.3.5.10 Construction of Sea, Air, Land Delivery Vehicle Team One Waterfront Operations Facility....	4-11
4.3.5.11 Basing of MV-22 and H-1 Aircraft in Support of III Marine Expeditionary Force Elements in Hawaii	4-11
4.3.5.12 Marine Corps Base Hawaii Pyramid Beach Cottage Construction.....	4-11
4.3.5.13 United States Marine Corps Joint Strike Fighter.....	4-11
4.3.5.14 United States Department of the Navy Climate Change Roadmap.....	4-11
4.3.5.15 Hawaii Air National Guard F-22 Beddown	4-12
4.3.6 ENVIRONMENTAL REGULATIONS AND PLANNING	4-12
4.3.6.1 Coastal and Marine Spatial Planning	4-12
4.3.6.2 Marine Mammal Protection Act Incidental Take Authorizations	4-12
4.3.7 OTHER ENVIRONMENTAL CONSIDERATIONS	4-12
4.3.7.1 Commercial and Recreational Fishing.....	4-12
4.3.7.2 Maritime Traffic	4-12
4.3.7.3 Development of Coastal Lands	4-13
4.3.7.4 Oceanographic Research	4-13
4.3.7.5 Ocean Noise	4-14
4.3.7.6 Ocean Pollution.....	4-14
4.3.7.7 Marine Tourism.....	4-16
4.3.7.8 Commercial and General Aviation	4-16
4.4 RESOURCE-SPECIFIC CUMULATIVE IMPACTS	4-16
4.4.1 RESOURCE AREAS DISMISSED FROM CURRENT IMPACTS ANALYSIS	4-16
4.4.2 SEDIMENTS AND WATER QUALITY	4-16
4.4.3 AIR QUALITY.....	4-17
4.4.4 CLIMATE CHANGE.....	4-18
4.4.4.1 Greenhouse Gases	4-18
4.4.5 MARINE HABITATS	4-21
4.4.6 MARINE MAMMALS	4-22

4.4.6.1	Impacts of Alternatives 1 and 2 That May Contribute to Cumulative Impacts	4-22
4.4.6.2	Impacts of Other Actions	4-22
4.4.6.3	Cumulative Impacts on Marine Mammals.....	4-27
4.4.7	SEA TURTLES	4-28
4.4.7.1	Impacts of Alternatives 1 and 2 That May Contribute to Cumulative Impacts	4-28
4.4.7.2	Impacts of Other Actions	4-28
4.4.7.3	Maritime Traffic and Vessel Strikes	4-29
4.4.7.4	Ocean Noise	4-29
4.4.7.5	Ocean Pollution.....	4-29
4.4.7.6	Commercial Fishing.....	4-30
4.4.7.7	Coastal Development.....	4-30
4.4.7.8	Cumulative Impacts on Sea Turtles	4-30
4.4.8	SEABIRDS	4-31
4.4.9	MARINE VEGETATION	4-31
4.4.10	MARINE INVERTEBRATES	4-32
4.4.11	FISH	4-32
4.4.12	CULTURAL RESOURCES	4-33
4.4.12.1	Impacts of Alternatives 1 and 2 That May Contribute to Cumulative Impacts	4-33
4.4.12.2	Impacts of Other Actions	4-33
4.4.12.3	Cumulative Impacts on Cultural Resources	4-33
4.4.13	SOCIOECONOMICS	4-34
4.4.14	PUBLIC HEALTH AND SAFETY	4-34
4.5	SUMMARY OF CUMULATIVE IMPACTS	4-34

5	STANDARD OPERATING PROCEDURES, MITIGATION, AND MONITORING	5-1
5.1	STANDARD OPERATING PROCEDURES	5-1
5.1.1	VESSEL SAFETY	5-2
5.1.2	AIRCRAFT SAFETY	5-2
5.1.3	LASER PROCEDURES	5-2
5.1.3.1	Laser Operators.....	5-3
5.1.3.2	Laser Activity Clearance	5-3
5.1.4	WEAPONS FIRING PROCEDURES.....	5-3
5.1.4.1	Notice to Mariners.....	5-3
5.1.4.2	Weapons Firing Range Clearance	5-3
5.1.4.3	Target Deployment Safety	5-3
5.1.5	SWIMMER DEFENSE TESTING PROCEDURES	5-4
5.1.5.1	Notice to Mariners.....	5-4
5.1.5.2	Swimmer Defense Testing Clearance	5-4
5.1.6	UNMANNED AERIAL AND UNDERWATER VEHICLE PROCEDURES	5-4
5.1.7	TOWED IN-WATER DEVICE PROCEDURES	5-4
5.2	INTRODUCTION TO MITIGATION	5-4
5.2.1	REGULATORY REQUIREMENTS FOR MITIGATION	5-5
5.2.2	OVERVIEW OF MITIGATION APPROACH.....	5-6
5.2.2.1	Lessons Learned from Previous Environmental Impact Statements/Overseas Environmental Impact Statements.....	5-6
5.2.2.2	Protective Measures Assessment Protocol	5-7
5.2.3	ASSESSMENT METHODOLOGY.....	5-7

5.2.3.1 Step 1: Effectiveness Assessment.....	5-8
5.2.3.2 Step 2: Operational Assessment.....	5-8
5.3 MITIGATION ASSESSMENT	5-10
5.3.1 LOOKOUT PROCEDURAL MEASURES.....	5-10
5.3.1.1 Specialized Training	5-10
5.3.1.2 Lookouts.....	5-11
5.3.2 MITIGATION ZONE PROCEDURAL MEASURES	5-21
5.3.2.1 Acoustic Stressors	5-24
5.3.2.2 Physical Strike and Disturbance.....	5-43
5.3.3 PROPOSED MITIGATION AREAS.....	5-45
5.3.3.1 Marine Mammal Habitats.....	5-45
5.3.3.2 Sea Turtles.....	5-46
5.3.3.3 Seafloor Habitats and Shipwrecks	5-46
5.4 MITIGATION SUMMARY	5-47
5.5 MITIGATION MEASURES CONSIDERED BUT ELIMINATED	5-52
5.5.1 REDUCTION OF TRAINING AND TESTING	5-53
5.5.2 CONDUCTING VISUAL OBSERVATIONS USING THIRD-PARTY OBSERVERS (AIR OR SURFACE PLATFORMS), IN ADDITION TO EXISTING NAVY-TRAINED LOOKOUTS	5-53
5.5.3 ADOPT MITIGATION MEASURES OF FOREIGN NATION NAVIES	5-54
5.5.4 REPORTING MARINE MAMMAL SIGHTINGS TO AUGMENT SCIENTIFIC DATA COLLECTION	5-54
5.5.5 USING ACTIVE SONAR WITH OUTPUT LEVELS AS LOW AS POSSIBLE CONSISTENT WITH MISSION REQUIREMENTS AND USE OF ACTIVE SONAR ONLY WHEN NECESSARY.....	5-55
5.5.6 USING RAMP-UP PROCEDURES TO ATTEMPT TO CLEAR THE RANGE, PRIOR TO THE CONDUCT OF ACTIVITIES...5-55	5-55
5.5.7 REDUCING OR SECURING ACTIVE SONAR DURING THE FOLLOWING CONDITIONS.....	5-55
5.5.7.1 Low-Visibility or at Night.....	5-55
5.5.7.2 Strong Surface Duct	5-56
5.5.8 LIMITING ACTIVE SONAR USE TO A FEW SPECIFIC LOCATIONS	5-56
5.5.9 AVOIDING ACTIVE SONAR USE WITHIN: (1) 12 NM FROM SHORE, (2) 13 NM FROM THE 656 FT. (200 M) ISOBATH, OR (3) 25 NM FROM SHORE	5-56
5.5.10 REDUCING VESSEL SPEED.....	5-56
5.5.11 USING LARGER MITIGATION ZONES	5-56
5.5.12 IMPLEMENTING A MITIGATION ZONE FOR MISSILE EXERCISES WITH AIRBORNE TARGETS.....	5-57
5.5.13 IMPLEMENTING A MITIGATION ZONE FOR MEDIUM AND LARGE CALIBER GUNNERY EXERCISES WITH AIRBORNE TARGETS	5-57
5.5.14 IMPLEMENTING MEASURES FOR LASER TEST OPERATIONS.....	5-57
5.6 MONITORING	5-58
5.6.1 APPROACH TO MONITORING	5-58
5.6.1.1 Integrated Comprehensive Monitoring Plan Top-Level Goals.....	5-58
5.6.1.2 Scientific Advisory Group Recommendations.....	5-59
5.7 REPORTING	5-60
5.7.1 EXERCISE AND MONITORING REPORTING.....	5-60
5.7.2 STRANDING RESPONSE PLAN	5-60
5.7.3 BIRD STRIKES	5-60
6 ADDITIONAL REGULATORY CONSIDERATIONS	6-1
6.1 CONSISTENCY WITH OTHER APPLICABLE FEDERAL, STATE, AND LOCAL PLANS, POLICIES, AND REGULATIONS	6-1
6.1.1 COASTAL ZONE MANAGEMENT ACT COMPLIANCE	6-4

6.1.1.1 California Coastal Management Program.....	6-5
6.1.1.2 Hawaii Coastal Zone Management Program	6-5
6.1.2 MARINE PROTECTED AREAS	6-5
6.2 RELATIONSHIP BETWEEN SHORT-TERM USE OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY.....	6-14
6.3 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES	6-14
6.4 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL OF ALTERNATIVES AND MITIGATION MEASURES	6-22
7 LIST OF PREPARERS	7-1
7.1 GOVERNMENT PREPARERS.....	7-1
7.2 CONTRACTOR PREPARERS	7-2

APPENDIX A NAVY ACTIVITIES DESCRIPTIONS	A-1
A.1.1 ANTI-AIR WARFARE TRAINING	A-2
A.1.1.1 Air Combat Maneuver	A-3
A.1.1.2 Air Defense Exercise	A-4
A.1.1.3 Gunnery Exercise (Air-to-Air).....	A-5
A.1.1.4 Missile Exercise (Air-to-Air)	A-6
A.1.1.5 Gunnery Exercise (Surface-to-Air) – Large Caliber	A-7
A.1.1.6 Gunnery Exercise (Surface-to-Air) – Medium Caliber	A-8
A.1.1.7 Missile Exercise (Surface-to-Air)	A-9
A.1.1.8 Missile Exercise - Man-portable Air Defense System	A-10
A.1.2 AMPHIBIOUS WARFARE TRAINING	A-11
A.1.2.1 Fire Support Exercise Land-based Target	A-12
A.1.2.2 Fire Support Exercise at Sea	A-13
A.1.2.3 Amphibious Assault	A-14
A.1.2.4 Amphibious Assault – Battalion Landing	A-15
A.1.2.5 Amphibious Raid.....	A-16
A.1.2.6 Expeditionary Fires Exercise/Supporting Arms Coordination Exercise	A-17
A.1.2.7 Humanitarian Assistance Operations	A-18
A.1.3 STRIKE WARFARE TRAINING	A-19
A.1.3.1 Bombing Exercise (Air-to-Ground)	A-20
A.1.3.2 Gunnery Exercise (Air-to-Ground).....	A-21
A.1.4 ANTI-SURFACE WARFARE TRAINING.....	A-22
A.1.4.1 Maritime Security Operations	A-23
A.1.4.2 Gunnery Exercise Surface-to-Surface (Ship) – Small Caliber	A-25
A.1.4.3 Gunnery Exercise Surface-to-Surface (Ship) – Medium Caliber	A-26
A.1.4.4 Gunnery Exercise Surface-to-Surface (Ship) – Large Caliber	A-27
A.1.4.5 Gunnery Exercise Surface-to-Surface (Boat) – Small Caliber	A-29
A.1.4.6 Gunnery Exercise Surface-to-Surface (Boat) – Medium Caliber.....	A-30
A.1.4.7 Missile Exercise Surface-to-Surface	A-31
A.1.4.8 Gunnery Exercise Air-to-Surface – Small Caliber.....	A-32
A.1.4.9 Gunnery Exercise Air-to-Surface – Medium Caliber.....	A-33
A.1.4.10 Missile Exercise Air-to-Surface – Rocket.....	A-34
A.1.4.11 Missile Exercise Air-to-Surface.....	A-35
A.1.4.12 Bombing Exercise Air-to-Surface	A-36

A.1.4.13	Laser Targeting.....	A-37
A.1.4.14	Sinking Exercise.....	A-38
A.1.5	ANTI-SUBMARINE WARFARE TRAINING	A-40
A.1.5.1	Tracking Exercise/Torpedo Exercise – Submarine.....	A-41
A.1.5.2	Tracking Exercise/Torpedo Exercise – Surface	A-42
A.1.5.3	Tracking Exercise/Torpedo Exercise – Helicopter	A-43
A.1.5.4	Tracking Exercise/Torpedo Exercise – Maritime Patrol Aircraft.....	A-45
A.1.5.5	Tracking Exercise – Maritime Patrol Aircraft Extended Echo Ranging Sonobuoys	A-47
A.1.5.6	Kilo Dip – Helicopter.....	A-48
A.1.5.7	Submarine Command Course Operations.....	A-49
A.1.6	ELECTRONIC WARFARE TRAINING	A-50
A.1.6.1	Electronic Warfare Operations.....	A-51
A.1.6.2	Counter Targeting Flare Exercise.....	A-52
A.1.6.3	Counter Targeting Chaff Exercise – Ship	A-53
A.1.6.4	Counter Targeting Chaff Exercise – Aircraft	A-54
A.1.7	MINE WARFARE TRAINING	A-55
A.1.7.1	Mine Countermeasure Exercise – Mine Countermeasure Sonar – Ship Sonar	A-56
A.1.7.2	Mine Countermeasure Exercise – Surface.....	A-57
A.1.7.3	Mine Neutralization – Explosive Ordnance Disposal.....	A-58
A.1.7.4	Mine Countermeasure – Towed Mine Neutralization.....	A-59
A.1.7.5	Mine Countermeasure – Mine Detection.....	A-60
A.1.7.6	Mine Countermeasure – Mine Neutralization	A-61
A.1.7.7	Mine Neutralization – Remotely Operated Vehicle	A-62
A.1.7.8	Mine Laying.....	A-63
A.1.7.9	MK-8 Marine Mammal System.....	A-64
A.1.7.10	Shock Wave Generator	A-65
A.1.7.11	Surf Zone Test Detachment/Equipment Test and Evaluation	A-66
A.1.7.12	Submarine Mine Exercise	A-67
A.1.7.13	Maritime Homeland Defense/Security Mine Countermeasures	A-68
A.1.8	NAVAL SPECIAL WARFARE TRAINING	A-69
A.1.8.1	Personnel Insertion/Extraction – Non-submarine.....	A-70
A.1.8.2	Personnel Insertion/Extraction – Submarine	A-71
A.1.8.3	Underwater Demolition Multiple Charge – Mat Weave and Obstacle Loading.....	A-72
A.1.8.4	Underwater Demolition Qualification/Certification.....	A-73
A.1.9	OTHER TRAINING	A-74
A.1.9.1	Precision Anchoring.....	A-74
A.1.9.2	Small Boat Attack.....	A-75
A.1.9.3	Offshore Petroleum Discharge System.....	A-76
A.1.9.4	Elevated Causeway System	A-77
A.1.9.5	Submarine Navigation	A-78
A.1.9.6	Submarine Under Ice Certification	A-79
A.1.9.7	Salvage Operations.....	A-80
A.1.9.8	Surface Ship Sonar Maintenance.....	A-81
A.1.9.9	Submarine Sonar Maintenance	A-82
A.1.10	INTEGRATED TRAINING AND MAJOR RANGE EVENTS	A-83
A.1.10.1	Composite Training Unit Exercise	A-84
A.1.10.2	Joint Task Force Exercise/Sustainment Exercise.....	A-85
A.1.10.3	Rim of the Pacific Exercise	A-86

A.1.10.4 Multi-Strike Group Exercise	A-88
A.1.10.5 Integrated Anti-Submarine Warfare Course.....	A-89
A.1.10.6 Group Sail.....	A-90
A.1.10.7 Undersea Warfare Exercise	A-91
A.1.10.8 Ship Anti-Submarine Warfare Readiness and Evaluation Measuring.....	A-92
A.2 NAVAL AIR SYSTEMS COMMAND TESTING ACTIVITIES	A-93
A.2.1 ANTI-AIR WARFARE TESTING	A-94
A.2.1.1 Air Combat Maneuver Test.....	A-94
A.2.1.2 Air Platform Vehicle Test	A-95
A.2.1.3 Air Platform Weapons Integration Test.....	A-96
A.2.1.4 Intelligence, Surveillance, and Reconnaissance Test.....	A-97
A.2.2 ANTI-SURFACE WARFARE TESTING.....	A-98
A.2.2.1 Air-to-Surface Missile Test.....	A-98
A.2.2.2 Air-to-Surface Gunnery Test.....	A-99
A.2.2.3 Rocket Test	A-100
A.2.2.4 Laser Targeting Test.....	A-101
A.2.3 ELECTRONIC WARFARE TESTING	A-102
A.2.3.1 Electronic Systems Evaluation.....	A-102
A.2.4 ANTI-SUBMARINE WARFARE TESTING	A-103
A.2.4.1 Anti-Submarine Warfare Torpedo Test	A-103
A.2.4.2 Kilo Dip.....	A-104
A.2.4.3 Sonobuoy Lot Acceptance Test	A-105
A.2.4.4 Anti-Submarine Warfare Tracking Test – Helicopter.....	A-106
A.2.4.5 Anti-Submarine Warfare Tracking Test – Maritime Patrol Aircraft.....	A-107
A.2.5 MINE WARFARE TESTING	A-108
A.2.5.1 Airborne Mine Neutralization System Test	A-108
A.2.5.2 Airborne Towed Minehunting Sonar System Test.....	A-109
A.2.5.3 Airborne Towed Minesweeping System Test.....	A-110
A.2.5.4 Airborne Laser-Based Mine Detection System Test	A-111
A.2.5.5 Airborne Projectile-Based Mine Clearance System.....	A-112
A.2.6 OTHER TESTING	A-113
A.2.6.1 Test and Evaluation – Catapult Launch	A-113
A.2.6.2 Air Platform Shipboard Integrate Test.....	A-114
A.2.6.3 Shipboard Electronic Systems Evaluation.....	A-115
A.3 NAVAL SEA SYSTEMS COMMAND TESTING ACTIVITIES	A-116
A.3.1 NEW SHIP CONSTRUCTION	A-116
A.3.1.1 Surface Combatant Sea Trials – Pierside Sonar Testing	A-117
A.3.1.2 Surface Combatant Sea Trials – Propulsion Testing	A-118
A.3.1.3 Surface Combatant Sea Trials – Gun Testing – Large-caliber	A-119
A.3.1.4 Surface Combatant Sea Trials – Missile Testing	A-120
A.3.1.5 Surface Combatant Sea Trials – Decoy Testing	A-121
A.3.1.6 Surface Combatant Sea Trials – Anti-Surface Warfare Testing – Large, Medium, and Small-Caliber	A-122
A.3.1.7 Surface Combatant Sea Trials – Anti-Submarine Warfare Testing	A-123
A.3.1.8 Other Ship Class Sea Trials – Propulsion Testing	A-124
A.3.1.9 Other Ship Class Sea Trials – Gun Testing – Small-caliber	A-125
A.3.1.10 Anti-Submarine Warfare Mission Package Testing.....	A-126
A.3.1.11 Surface Warfare Mission Package – Gun Testing – Small Caliber.....	A-127

A.3.1.12	Surface Warfare Mission Package –Gun Testing – Medium Caliber	A-128
A.3.1.13	Surface Warfare Mission Package – Gun Testing – Large Caliber	A-129
A.3.1.14	Surface Warfare Mission Package Testing – Missile/Rocket Testing.....	A-130
A.3.1.15	Mine Countermeasure Mission Package Testing.....	A-131
A.3.1.16	Post-Homeporting Test (All Classes).....	A-132
A.3.2	LIFECYCLE ACTIVITIES	A-133
A.3.2.1	Ship Signature Testing	A-134
A.3.2.2	Surface Ship Sonar Testing/Maintenance (in Operating Areas and Ports).....	A-135
A.3.2.3	Submarine Sonar Testing/Maintenance (in Operating Areas and Ports)	A-136
A.3.2.4	Combat System Ship Qualification Trial – In-port Maintenance Period.....	A-137
A.3.2.5	Combat System Ship Qualification Trial – Air Defense.....	A-138
A.3.2.6	Combat System Ship Qualification Trial – Surface Warfare	A-139
A.3.2.7	Combat System Ship Qualification Trial – Undersea Warfare.....	A-140
A.3.3	SURFACE WARFARE/ANTI-SUBMARINE WARFARE TESTING.....	A-141
A.3.3.1	Missile Testing	A-141
A.3.3.2	Kinetic Energy Weapon Testing.....	A-142
A.3.3.3	Electronic Warfare Testing	A-143
A.3.3.4	Torpedo (Non-Explosive) Testing	A-144
A.3.3.5	Torpedo (Explosive) Testing	A-146
A.3.3.6	Countermeasure Testing – Acoustic Systems Testing	A-147
A.3.3.7	Countermeasure Testing – Anti-Torpedo Torpedo Defense System Testing	A-148
A.3.3.8	Pierside Sonar Testing	A-149
A.3.3.9	At-Sea Sonar Testing.....	A-150
A.3.4	MINE WARFARE TESTING	A-151
A.3.4.1	Mine Detection and Classification.....	A-151
A.3.4.2	Mine Countermeasure/Neutralization Testing	A-152
A.3.4.3	Pierside Systems Health Checks	A-153
A.3.5	SHIPBOARD PROTECTION SYSTEMS AND SWIMMER DEFENSE TESTING	A-154
A.3.5.1	Pierside Integrated Swimmer Defense	A-154
A.3.5.2	Shipboard Protection Systems Testing	A-155
A.3.5.3	Chemical/Biological Simulant Testing	A-156
A.3.6	UNMANNED VEHICLE TESTING	A-157
A.3.6.1	Underwater Deployed Unmanned Aerial Vehicle Testing.....	A-157
A.3.6.2	Unmanned Vehicle Development and Payload Testing	A-158
A.3.7	OTHER TESTING	A-159
A.3.7.1	Special Warfare.....	A-159
A.3.7.2	Acoustic Communications Testing.....	A-160
A.4	SPACE AND NAVAL WARFARE SYSTEMS COMMAND TESTING EVENTS.....	A-161
A.4.1	RESEARCH, DEVELOPMENT, TEST, AND EVALUATION	A-162
A.4.1.1	Autonomous Undersea Vehicle Anti-Terrorism/Force Protection Mine Countermeasures.	A-162
A.4.1.2	Autonomous Undersea Vehicle Underwater Communications	A-163
A.4.1.3	Fixed System Underwater Communications	A-163
A.4.1.4	Autonomous Oceanographic Research and Meteorology and Oceanography.....	A-163
A.4.1.5	Fixed Autonomous Oceanographic Research and Meteorology and Oceanography	A-163
A.4.1.6	Passive Mobile Intelligence, Surveillance, and Reconnaissance Sensor Systems	A-163
A.4.1.7	Fixed Intelligence, Surveillance, and Reconnaissance Sensor Systems.....	A-163
A.4.1.8	Anti-Terrorism/Force Protection Fixed Sensor Systems	A-163
A.5	OFFICE OF NAVAL RESEARCH AND NAVAL RESEARCH LABORATORY TESTING ACTIVITIES	A-163

A.5.1 RESEARCH, DEVELOPMENT, TEST, AND EVALUATION.....	A-163
A.5.1.1 Kauai Acoustic Communications Experiment (Coastal).....	A-163

APPENDIX B NOTICE OF INTENT.....	B-1
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APPENDIX C AGENCY CORRESPONDENCE.....	C-1
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D AIR QUALITY SUMMARIES	D-1
D.1 SURFACE OPERATIONS EMISSIONS	D-1
D.2 AIR OPERATIONS EMISSIONS	D-2
D.3 ORDNANCE AND MUNITIONS EMISSIONS.....	D-3
D.4 EMISSIONS ESTIMATES SPREADSHEETS.....	D-3
D.5 DRAFT RECORD OF NON-APPLICABILITY	D-9

APPENDIX E PUBLIC PARTICIPATION	E-1
----------------------------------------------	------------

E.1 PROJECT WEBSITE.....	E-1
E.2 GENERAL SUMMARY OF THE SCOPING PERIOD	E-1
E.2.1 PUBLIC SCOPING NOTIFICATION	E-1
E.2.1.1 Scoping Notification Letters.....	E-1
E.2.1.2 Postcard Mailers	E-4
E.2.1.3 Press Releases.....	E-4
E.2.1.4 Newspaper Display Advertisements	E-5
E.2.2 SCOPING MEETINGS.....	E-5
E.2.3 PUBLIC SCOPING COMMENTS	E-5
E.2.3.1 Sonar and Underwater Detonations.....	E-6
E.2.3.2 Biological Resources-Marine Mammals.....	E-6
E.2.3.3 Other	E-7
E.2.3.4 Biological Resources-Fish and Marine Habitat	E-7
E.2.3.5 Meetings/National Environmental Policy Act Process	E-7
E.2.3.6 Alternatives.....	E-7
E.2.3.7 Regional Economy.....	E-7
E.2.3.8 Noise	E-7
E.2.3.9 Threatened and Endangered Species	E-7
E.2.3.10 Proposed Action.....	E-7
E.2.3.11 Biological Resources-Onshore	E-7
E.2.3.12 Water Quality.....	E-7
E.2.3.13 Air Quality	E-7
E.2.3.14 Depleted Uranium	E-8
E.2.3.15 Public Health and Safety	E-8
E.2.3.16 Cumulative Impacts	E-8
E.2.3.17 Terrestrial/Birds	E-8
E.2.3.18 Recreation.....	E-8

APPENDIX F TRAINING AND TESTING ACTIVITIES MATRICES	F-1
F.1 STRESSORS BY TRAINING ACTIVITY	F-1
F.2 STRESSORS BY TESTING ACTIVITY	F-6
F.3 STRESSORS BY RESOURCE.....	F-11

APPENDIX G STATISTICAL PROBABILITY ANALYSIS FOR ESTIMATING DIRECT STRIKE IMPACT AND NUMBER OF POTENTIAL EXPOSURES	G-1
G-1 DIRECT IMPACT ANALYSIS	G-1
G-2 PARAMETERS FOR ANALYSIS.....	G-3
G-3 INPUT DATA	G-4
G-4 OUTPUT DATA	G-4

LIST OF TABLES

CHAPTER 1 Purpose and Need

There are no tables in this section.

CHAPTER 2 Description of Proposed Action and Alternatives

Table 2.3-1: Non-impulsive Acoustic Source Classes Analyzed	2-39
Table 2.3-2: Explosive Source Classes Analyzed	2-41
Table 2.3-3: Source Classes Excluded from Quantitative Analysis	2-43
Table 2.4-1: Study Area Typical Training Activities.....	2-45
Table 2.4-2: Study Area Typical Naval Air Systems Command Testing Activities	2-51
Table 2.4-3: Study Area Typical Naval Sea Systems Command Testing Activities	2-54
Table 2.4-4: Study Area Typical Space and Naval Warfare Systems Command Testing Activities	2-57
Table 2.4-5: Study Area Typical Office of Naval Research Testing Activity.....	2-59
Table 2.8-1: Baseline and Proposed Training Activities.....	2-76
Table 2.8-2: Baseline and Proposed Naval Air Systems Command Testing Activities	2-99
Table 2.8-3: Baseline and Proposed Naval Sea Systems Command Testing Activities	2-103
Table 2.8-4: Baseline and Proposed Space and Naval Warfare Systems Command Testing Activities .	2-111
Table 2.8-5: Baseline and Proposed Office of Naval Research Testing Activities.....	2-112

CHAPTER 3.0 Introduction

Table 3.0-1: Sources of Non-Navy Geographic Information System Data Used to Generate Figures in Chapter 3.....	3.0-6
Table 3.0-2: Net Primary Production for Several Ecosystem Types, for Comparison with the Primary Productivity Values Provided for Each Large Marine Ecosystem	3.0-9
Table 3.0-3: Summary of Bathymetric Features within Large Marine Ecosystems and Open Ocean Areas in Important Navy Training and Testing Areas	3.0-11
Table 3.0-4: Sea Surface Temperature Range for Large Marine Ecosystems and Open Ocean Areas of the Study Area.....	3.0-25
Table 3.0-5: Source Levels of Common Underwater Sounds	3.0-38
Table 3.0-6: List of Stressors Analyzed.....	3.0-42
Table 3.0-7: Stressors by Warfare and Testing Area.....	3.0-43
Table 3.0-8: Training and Testing Tactical Acoustic Sources Used in the Hawaii-Southern California Training and Testing Study Area	3.0-46
Table 3.0-9: Explosives for Training and Testing Activities in the Hawaii-Southern California Training and Testing Study Area	3.0-50
Table 3.0-10: Representative Ordnance, Net Explosive Weights, and Detonation Depths.....	3.0-52
Table 3.0-11: Airborne Sound Pressure Levels from Similar Pile Driving Events.....	3.0-53
Table 3.0-12: Average Pile Driving Underwater Sound Levels.....	3.0-54
Table 3.0-13: Representative Weapons Noise Characteristics	3.0-55
Table 3.0-14: Representative Aircraft Sound Characteristics	3.0-59
Table 3.0-15: Sonic Boom Underwater Sound Levels Modeled for F/A-18 Hornet Supersonic Flight .	3.0-61
Table 3.0-16: Training Activities That Involve the Use of Electromagnetic Devices.....	3.0-61
Table 3.0-17: Testing Activities That Involve the Use of Electromagnetic Devices	3.0-61
Table 3.0-18: Number and Location of Electromagnetic Energy Events	3.0-62
Table 3.0-19: Representative Vessel Types, Lengths, and Speeds	3.0-63

Table 3.0-20: Training Activities that Involve the Use of Aircraft Carriers	3.0-64
Table 3.0-21: Testing Activities that Involve the Use of Aircraft Carriers.....	3.0-64
Table 3.0-22: Training Activities that Involve the Use of Surface Combatants	3.0-65
Table 3.0-23: Testing Activities that Involve the Use of Surface Combatants.....	3.0-66
Table 3.0-24: Training Activities That Involve the Use of Amphibious Warfare Ships	3.0-67
Table 3.0-25: Testing Activities That Involve the Use of Amphibious Warfare Ships.....	3.0-67
Table 3.0-26: Training Activities That Involve the Use of Support Craft.....	3.0-67
Table 3.0-27: Testing Activities That Involve the Use of Support Craft.....	3.0-68
Table 3.0-28: Training Activities That Involve the Use of Submarines	3.0-69
Table 3.0-29: Testing Activities That Involve the Use of Submarines.....	3.0-69
Table 3.0-30: Number and Location of Events Including Vessel Movement	3.0-70
Table 3.0-31: Representative Types, Sizes, and Speeds of In-water Devices	3.0-70
Table 3.0-32: Training Activities That Involve the Use of Towed Devices	3.0-71
Table 3.0-33: Testing Activities That Involve the Use of Towed Devices.....	3.0-71
Table 3.0-34: Training Activities That Involve the Use of Unmanned Surface Vehicles	3.0-72
Table 3.0-35: Testing Activities That Involve the Use of Unmanned Surface Vehicles.....	3.0-72
Table 3.0-36: Training Activities That Involve the Use of Unmanned Underwater Vehicles.....	3.0-72
Table 3.0-37: Testing Activities That Involve the Use of Unmanned Underwater Vehicles	3.0-73
Table 3.0-38: Number and Location of Events Including In-Water Devices	3.0-74
Table 3.0-39: Training Activities That Expend Non-Explosive Small-Caliber Projectiles.....	3.0-74
Table 3.0-40: Testing Activities That Expend Non-Explosive Small-Caliber Projectiles	3.0-75
Table 3.0-41: Training Activities That Expend Non-Explosive Medium-Caliber Projectiles.....	3.0-75
Table 3.0-42: Testing Activities That Expend Non-Explosive Medium-Caliber Projectiles	3.0-75
Table 3.0-43: Training Activities That Expend Non-Explosive Large-Caliber Projectiles.....	3.0-76
Table 3.0-44: Testing Activities That Expend Non-Explosive Large-Caliber Projectiles	3.0-76
Table 3.0-45: Training Activities That Expend Non-Explosive Bombs.....	3.0-77
Table 3.0-46: Testing Activities That Expend Non-Explosive Bombs	3.0-77
Table 3.0-47: Training Activities That Expend Non-Explosive Missiles or Rockets	3.0-77
Table 3.0-48: Testing Activities That Expend Non-Explosive Missiles or Rockets	3.0-77
Table 3.0-49: Training Activities That Expend Aircraft Stores or Ballast	3.0-78
Table 3.0-50: Testing Activities That Expend Aircraft Stores or Ballast.....	3.0-78
Table 3.0-51: Training Activities That Expend Non-Explosive Sonobuoys	3.0-78
Table 3.0-52: Testing Activities That Expend Non-Explosive Sonobuoys	3.0-79
Table 3.0-53: Training Activities That Expend Parachutes.....	3.0-79
Table 3.0-54: Testing Activities That Expend Parachutes	3.0-80
Table 3.0-55: Training Activities That Expend Chaff	3.0-80
Table 3.0-56: Testing Activities That Expend Chaff.....	3.0-80
Table 3.0-57: Training Activities That Expend Flares	3.0-80
Table 3.0-58: Testing Activities That Expend Flares.....	3.0-81
Table 3.0-59: Training Activities That Expend Fragments from High-Explosive Munitions.....	3.0-81
Table 3.0-60: Testing Activities That Expend Fragments from High-Explosive Munitions	3.0-82
Table 3.0-61: Training Activities That Expend Fragments from Targets	3.0-82
Table 3.0-62: Testing Activities That Expend Fragments from Targets	3.0-83
Table 3.0-63: Number and Location of Non-Explosive Practice Munitions Expended	3.0-84
Table 3.0-64: Number and Location of High-Explosives that May Result in Fragments.....	3.0-85
Table 3.0-65: Number and Location of Targets Expended	3.0-86
Table 3.0-66: Training Activities That Deploy Sea Floor Devices	3.0-87
Table 3.0-67: Testing Activities That Deploy Sea Floor Devices	3.0-87

Table 3.0-68: Number and Location of Events Including Seafloor Devices	3.0-88
Table 3.0-69: Training Activities That Include Fixed-Wing Aircraft.....	3.0-88
Table 3.0-70: Testing Activities That Include Fixed-Wing Aircraft	3.0-89
Table 3.0-71: Training Activities That Include Rotary-Wing Aircraft	3.0-90
Table 3.0-72: Testing Activities That Include Rotary-Wing Aircraft.....	3.0-91
Table 3.0-73: Training Activities That Include Unmanned Aerial Systems	3.0-92
Table 3.0-74: Testing Activities That Include Unmanned Aerial Systems.....	3.0-92
Table 3.0-75: Number and Location of Events Including Aircraft Movement	3.0-93
Table 3.0-76: Training Activities That Expend Fiber Optic Cables	3.0-93
Table 3.0-77: Testing Activities That Expend Fiber Optic Cables.....	3.0-94
Table 3.0-78: Number and Location of Events that Expend Fiber Optic Cable.....	3.0-94
Table 3.0-79: Training Activities That Expend Guidance Wires	3.0-95
Table 3.0-80: Testing Activities That Expend Guidance Wires.....	3.0-95
Table 3.0-81: Number and Location of Events that Expend Guidance Wire	3.0-95
Table 3.0-82: Number and Location of Expended Parachutes	3.0-96
Table 3.0-83: Number and Location of Events Involve the Use of Expended Chaff	3.0-98
Table 3.0-84: Number and Location of Events That Involve the Use of Expended Flares....	3.0-99

Section 3.1 Sediments and Water Quality

Table 3.1-1: Concentrations of Selected Elements in Seawater	3.1-6
Table 3.1-2: Sediment Quality Criteria and Index, United States West Coast and Hawaiian Islands ...	3.1-11
Table 3.1-3: Sediment Screening Criteria for Pearl Harbor Sediment Remedial Investigation	3.1-13
Table 3.1-4: Contaminant Concentrations in Bottom Sediments Offshore San Clemente Island	3.1-14
Table 3.1-5: Military Materials as Components of All Materials Recovered on the West Coast, United States, 2007-2008	3.1-15
Table 3.1-6: Water Quality Criteria and Index, United States West Coast	3.1-17
Table 3.1-7: Water Quality Criteria and Index, Hawaiian Islands	3.1-18
Table 3.1-8: Water Pollutant Concentrations in Surface Waters at San Clemente Island.....	3.1-21
Table 3.1-9: Byproducts of Underwater Detonation of Royal Demolition Explosive	3.1-24
Table 3.1-10: Failure and Low-Order Determination Rates of Military Ordnance	3.1-24
Table 3.1-11: State Water Quality Criteria for Explosives and Explosion Byproducts.....	3.1-25
Table 3.1-12: Criteria for Explosives and Explosion Byproducts in Saltwater	3.1-25
Table 3.1-13: Water Solubility of Common Explosives and Explosive Degradation Products.....	3.1-26
Table 3.1-14: Volume of Water Needed to Meet Marine Screening Value for Royal Demolition Explosive	3.1-29
Table 3.1-15: High-Explosive Military Expended Materials from Training and Testing Activities – All Alternatives.....	3.1-30
Table 3.1-16: Comparison of Number of High-Explosive Items versus Weight of Explosives	3.1-31
Table 3.1-17: Comparison of Number of High-Explosive Items versus Weight of Explosives	3.1-33
Table 3.1-18: Water Quality Criteria for Metals	3.1-37
Table 3.1-19: Federal Threshold Values for Exposure to Selected Metals in Saltwater	3.1-38
Table 3.1-20: Concentrations of and Screening Levels for Selected Metals in Marine Sediments, Vieques, Puerto Rico.....	3.1-39
Table 3.1-21: Comparison of Training Materials with Metal Components – No Action Alternative....	3.1-43
Table 3.1-22: Comparison of Training Materials with Metal Components – Alternative 1.....	3.1-44
Table 3.1-23: Ordnance Constituents in Residues of Low-Order Detonations and in Unconsumed Explosives.....	3.1-48

Table 3.1-24: Military Expended Materials with Chemical Components – All Alternatives	3.1-53
Table 3.1-25: Summary of Components of Marine Markers and Flares.....	3.1-57
Table 3.1-26: Major Components of Chaff	3.1-58
Table 3.1-27: Summary of Annual Military Expended Materials Involving Other Materials – All Alternatives.....	3.1-60

Section 3.2 Air Quality

Table 3.2-1: National Ambient Air Quality Standards.....	3.2-3
Table 3.2-2: <i>De Minimis</i> Thresholds for Conformity Determinations.....	3.2-5
Figure 3.2-1: Southern California Air Basins Adjacent to the Study Area.....	3.2-6
Table 3.2-3: Annual Criteria Air Pollutant Emissions from Training under the No Action Alternative.	3.2-19
Table 3.2-4: Annual Criteria Air Pollutant Emissions from Testing under the No Action Alternative ..	3.2-20
Table 3.2-5: California Estimated Annual Criteria Air Pollutant Emissions by Air Basin, No Action Alternative	3.2-21
Table 3.2-6: Estimated Annual Criteria Air Pollutant Emissions in HSTT Study Area, No Action Alternative	3.2-22
Table 3.2-7: Annual Criteria Air Pollutant Emissions from Training under Alternative 1	3.2-22
Table 3.2-8: Annual Criteria Air Pollutant Emissions from Testing under Alternative 1.....	3.2-23
Table 3.2-9: California State Estimated Annual Criteria Air Pollutant Emissions by Air Basin, Alternative 1	3.2-24
Table 3.2-10: South Coast Air Basin Emissions Increases Compared to <i>de Minimis</i> Thresholds, Alternative 1	3.2-25
Table 3.2-11: San Diego Air Basin Emissions Increases Compared to <i>de Minimis</i> Thresholds, Alternative 1	3.2-25
Table 3.2-12: Estimated Annual Criteria Air Pollutant Emissions in the Hawaii-Southern California Testing and Training Study Area, Alternative 1	3.2-26
Table 3.2-13: Annual Criteria Air Pollutant Emissions from Training under Alternative 2	3.2-26
Table 3.2-14: Annual Criteria Air Pollutant Emissions from Testing under Alternative 2.....	3.2-27
Table 3.2-15: California State Estimated Annual Criteria Air Pollutant Emissions by Air Basin, Alternative 2	3.2-28
Table 3.2-16: South Coast Air Basin Emissions Increases Compared to <i>de Minimis</i> Thresholds, Alternative 2	3.2-29
Table 3.2-17: San Diego Air Basin Emissions Increases Compared to <i>de Minimis</i> Thresholds, Alternative 2	3.2-29
Table 3.2-18: Estimated Annual Criteria Air Pollutant Emissions in HSTT Study Area, Alternative 2...3.2-30	

Section 3.3 Marine Habitats

Table 3.3-1: Habitat Types within the Large Marine Ecosystems and Open Ocean of the Hawaii-Southern California Training and Testing Study Area.....	3.3-2
Table 3.3-2: Training and Testing Activities that Include Seafloor Explosions	3.3-15
Table 3.3-3: Bottom Detonations for Training Activities under the No Action Alternative	3.3-17
Table 3.3-4: Bottom Detonations for Training Activities under Alternative 1.....	3.3-18
Table 3.3-5: Number and Impact Footprint of Military Expended Materials by Range Complex – No Action Alternative	3.3-24
Table 3.3-6: Number and Impact Footprint of Military Expended Materials by Range Complex – Alternative 1.....	3.3-25

Table 3.3-7: Number and Impact Footprint of Military Expended Materials by Range Complex – Alternative 2.....	3.3-26
Table 3.3-8: Combined Impact of Acoustic Stressors (Underwater Explosions) and Physical Disturbances (Military Expended Materials) on Marine Substrates for the No Action Alternative.....	3.3-32
Table 3.3-9: Combined Impact of Acoustic Stressors (Underwater Explosions) and Physical Disturbances (Military Expended Materials) on Marine Substrates for Alternative 1	3.3-32
Table 3.3-10: Combined Impact of Acoustic Stressors (Underwater Explosions) and Physical Disturbances (Military Expended Materials) on Marine Substrates for Alternative 2	3.3-33

Section 3.4 Marine Mammals

Table 3.4-1: Marine Mammals with Possible or Confirmed Presence within the Hawaii-Southern California Traning and Testing Study Area.....	3.4-3
Table 3.4-2: Hearing and Vocalization Ranges for Marine Mammal Functional Hearing Groups and Species Potentially within the Hawaii-Southern California Training and Testing Study Area	3.4-16
Table 3.4-3: Non-Impulsive Acoustic Criteria and Thresholds for Predicting Physiological Effects to Marine Mammals Underwater	3.4-120
Table 3.4-4: Impulsive Sound and Explosive Criteria and Thresholds for Physiological Effects to Marine Mammals Underwater.....	3.4-123
Table 3.4-5: Summary of Behavioral Thresholds for Marine Mammals	3.4-125
Table 3.4-6: Pile Driving and Airgun Thresholds Used in this Analysis to Predict Effects to Marine Mammals	3.4-127
Table 3.4-7: Maximum Zones of Influence for Elevated Causeway System Pile Driving and Removal.....	3.4-130
Table 3.4-8: Lower and Upper Cutoff Frequencies for Marine Mammal Functional Hearing Groups Used in this Acoustic Analysis.	3.4-133
Table 3.4-9: Ranges to PTS Criteria for Each Functional Hearing Group for a Single Ping from Four of the Most Powerful Sonar Systems within Representative Acoustic Environments Across the Study Area	3.4-141
Table 3.4-10: Average Range to Onset of Temporary Threshold Shift for Four Representative Sonar within the Study Area	3.4-142
Table 3.4-11: Range to Received Sound Pressure Level (SPL) in 6-dB Increments and Percentage of Behavioral Harassments for Low-Frequency Cetaceans under the Mysticete Behavioral Risk Function for Four Representative Sonar Systems (Hawaiian waters)	3.4-143
Table 3.4-12: Range to Received Sound Pressure Level (SPL) in 6-dB Increments and Percentage of Behavioral Harassments for Mid-Frequency Cetaceans under the Odontocete Behavioral Risk Function for Four Representative Sonar Systems (Hawaiian waters)	3.4-144
Table 3.4-13: Annual Training Exposures for Sonar and Other Acoustic Sources	3.4-167
Table 3.4-14: Annual Testing Exposures for Sonar and Other Acoustic Sources.....	3.4-171
Table 3.4-15: Average Approximate Range to Effects from Explosions for Marine Mammals within the Study Area.....	3.4-181
Table 3.4-16: No Action Alternative Annual Training Exposure Summary for Explosives	3.4-182
Table 3.4-17: No Action Alternative Annual Testing Exposure Summary for Explosives	3.4-193
Table 3.4-18: Alternative 1 Training Annual Exposures Summary for Explosives	3.4-201
Table 3.4-19: Alternative 1 Annual Testing Exposure Summary for Explosives	3.4-205
Table 3.4-20: Alternative 2 Training Annual Exposures Summary for Explosives	3.4-209
Table 3.4-21: Alternative 2 Annual Testing Exposure Summary for Explosives	3.4-211

Table 3.4-22: Annual Exposure Summary for Pile Driving and Removal During Elevated Causeway Training – All Alternatives	3.4-215
Table 3.4-23: Number of Navy Ship Strikes by Range Complex in the HSTT Study Area by Linear Five-Year Intervals	3.4-240
Table 3.4-24: Number of Navy Ship Strikes by Range Complex in HSTT by Consecutive Five-Year Intervals	3.4-241
Table 3.4-25: Poisson Probability of Striking “X” Number of Whales Per Year in the Study Area	3.4-243
Table 3.4-26: Odontocete Marine Mammal Species that Occur in the Study Area that are Documented to Have Ingested Marine Debris (from Walker and Coe, 1990).....	3.4-259

Section 3.5 Sea Turtles

Table 3.5-1: Status and Presence of Endangered Species Act-Listed Sea Turtles in the Hawaii-Southern California Training and Testing Study Area.....	3.5-2
Table 3.5-2: Sea Turtle Impact Threshold Criteria for Non-Impulsive Sources	3.5-30
Table 3.5-3: Sea Turtle Impact Threshold Criteria for Impulsive Sources	3.5-30
Table 3.5-4: Species-Specific Masses for Determining Onset of Extensive and Slight Lung Injury Thresholds.....	3.5-32
Table 3.5-5: Activities and Active Acoustic Sources Modeled and Quantitatively Analyzed for Acoustic Impacts on Sea Turtles.....	3.5-41
Table 3.5-6: Annual Total Model-Predicted Impacts on Sea Turtles for Training Activities using Sonar and other Active Non-Impulsive Acoustic Sources	3.5-42
Table 3.5-7: Annual Total Model-Predicted Impacts on Sea Turtles for Testing Activities using Sonar and other Active Non-Impulsive Acoustic Sources	3.5-42
Table 3.5-8: Ranges of Impacts from In-water Explosions on Sea Turtles for Representative Sources	3.5-46
Table 3.5-9: Annual Model-Predicted Impacts of Explosions on Sea Turtles for Training Activities Under the No Action Alternative	3.5-47
Table 3.5-10: Annual Model-Predicted Impacts of Explosions on Sea Turtles for Training Activities Under Alternatives 1 and 2	3.5-47
Table 3.5-11: Annual Model-Predicted Impacts of Explosions on Sea Turtles for Testing Activities Under the No Action Alternative	3.5-47
Table 3.5-12: Annual Model-Predicted Impacts of Explosions on Sea Turtles for Testing Activities Under Alternative 1.....	3.5-47
Table 3.5-13: Annual Model-Predicted Impacts of Explosions on Sea Turtles for Testing Activities Under Alternative 2.....	3.5-47
Table 3.5-14: Ranges of Impacts of In-water Explosions on Sea Turtles from Representative Sources.....	3.5-48
Table 3.5-15: Summary of Effects and Impact Conclusions: Sea Turtles.....	3.5-95

Section 3.6 Seabirds

Table 3.6-1: Endangered Species Act Listed Seabird Species Found in the Study Area	3.6-2
Table 3.6-2: Descriptions and Examples of Major Taxonomic Groups within the Study Area	3.6-3
Table 3.6-3: Migratory Bird Treaty Act Species and Birds of Conservation Concern within the Study Area	3.6-4
Table 3.6-4: Estimated Ranges to Impacts for Diving Birds Exposed to Underwater Detonations	3.6-28
Table 3.6-5: Safe Distance from Detonations in Air for Birds	3.6-29

Table 3.6-6: Summary of Endangered Species Act Effects Determinations for Birds, for the Preferred Alternative	3.6-70
----------------------------------------------------------------------------------------------------------------------	--------

Section 3.7 Marine Vegetation

Table 3.7-1: Major Taxonomic Groups of Marine Vegetation in the Study Area	3.7-2
----------------------------------------------------------------------------------	-------

Section 3.8 Marine Invertebrates

Table 3.8-1: Status of Endangered Species Act-Listed, Candidate, and Species of Concern Invertebrate Species in the Study Area.....	3.8-2
Table 3.8-2: Federally Managed Marine Invertebrate Species with Essential Fish Habitat within the Study Area, Covered under Each Fishery Management Plan	3.8-3
Table 3.8-3: Major Taxonomic Groups of Marine Invertebrates in the Hawaii-Southern California Training and Testing Study Area	3.8-4
Table 3.8-4: Summary of Endangered Species Act Determinations for Marine Invertebrates for the Preferred Alternative	3.8-68

Section 3.9 Fish

Table 3.9-1: Status and Presence of Endangered Species Act-Listed Fish Species, Candidate Species, and Species of Concern Found in the Hawaii-Southern California Training and Testing Study Area.....	3.9-3
Table 3.9-2: Major Taxonomic Groups of Marine Fishes within the Hawaii-Southern California Training and Testing Study Area	3.9-4
Table 3.9-3: Federally Managed Fish Species Within the Hawaii-Southern California Training and Testing Study Area, Western Pacific Regional Fishery Management Council.....	3.9-6
Table 3.9-4: Federally Managed Fish Species within the Hawaii-Southern California Training and Testing Study Area, Pacific Regional Fishery Management Council.....	3.9-10
Table 3.9-5: Estimated Explosive Effects Ranges for Fish with Swim Bladders	3.9-47
Table 3.9-6: Range of Effects for Fish from Pile Driving.....	3.9-50
Table 3.9-7: Summary of Ingestion Stressors on Fishes Based on Location	3.9-88
Table 3.9-8: Summary of Endangered Species Act Determinations for Training and Testing Activities for the Preferred Alternative	3.9-102

Section 3.10 Cultural Resources

Table 3.10-1: Summary of Section 106 Effects of Training and Testing Activities on Cultural Resources	3.10-25
-------------------------------------------------------------------------------------------------------------	---------

Section 3.11 Socioeconomic Resources

Table 3.11-1: United States Port Rankings by Cargo Volume for Hawaii Ports in 2009	3.11-3
Table 3.11-2: United States Port Rankings by Cargo Volume for Southern California Ports in 2009 ...	3.11-5
Table 3.11-3: Total Commercial Landings (Pounds) and Total Value (Dollars) within the Hawaii Range Complex (2006-2010).....	3.11-13
Table 3.11-4: Annual Commercial Landing of Fish and Invertebrates and Value within the SOCAL Range Complex and Silver Strand Training Complex (2010).....	3.11-14

Section 3.12 Public Health and Safety

There are no tables in this section.

CHAPTER 4 Cumulative Impacts

Table 4.3-1: Other Actions and Other Environmental Considerations Identified for the Cumulative Impacts Analysis.....	4-5
Table 4.4-1: Comparison of Ship and Aircraft Greenhouse Gas Emissions to U.S. 2009 Greenhouse Gas Emissions.....	4-21

CHAPTER 5 Mitigation Measures

Table 5.3-1: Detection Probability $g(0)$ Values for Marine Mammal Species.....	5-17
Table 5.3-2: Predicted Range to Effects and Recommended Mitigation Zones	5-22
Table 5.3-3: Predicted Range to Effectgs and Mitigation Zone Radius for Mine Countermeasure.....	5-29
Table 5.4-1: Mitigation Identification and Implementation	5-49
Table 5.4-2: Comparison of Current and Recommended Mitigation Measures.....	5-51

CHAPTER 6 Other Considerations

Table 6.1-1: Summary of Environmental Compliance for the Proposed Action.....	6-1
Table 6.3-1: Marine Protected Areas within the Hawaii-Southern California Training and Testing Study Area	6-15

CHAPTER 7 List of Preparers

There are no tables in this section.

APPENDIX A Navy Activities Descriptions

There are no tables in this section.

APPENDIX B Notice of Intent

There are no tables in this section.

APPENDIX C Agency Correspondence

There are no tables in this section.

APPENDIX D Air Quality Example Summaries

Table D.1-1: Emission Factors for Two Stroke Engines.....	D-1
Table D.4-1: Sample Air Emissions Calculations Table (Training Ops Information – Sample only)	D-5

Table D.4-2: Sample Air Emissions Calculations Table (Emissions Factors – Sample only)	D-6
Table D.4-3: Sample Air Emissions Calculations Table (Emissions – Sample only)	D-7

APPENDIX E Public Participation

Table E-1: Public Scoping Comment Summary	E-6
-------------------------------------------------	-----

APPENDIX F Stressors Associated with Navy Activities

Table F-1: Stressors by Training Activity	F-1
Table F-2: Stressors by Testing Activity.....	F-6
Table F-3: Stressors by Resource	F-11

APPENDIX G Statistical Probability analysis for Estimating Direct Strike Impact and Number of Potential Exposures

Table G-1: Estimated Marine Mammal Exposures from Direct Strike of Munitions and Other Items by Area and Alternative	G-5
Table G-2: Estimated Sea Turtle Exposures from Direct Strike of Military Expended Materials by Area and Alternative	G-5

LIST OF FIGURES

CHAPTER 1 Purpose and Need

Figure 1.4-1: Fleet Readiness Training Plan	1-5
Figure 1.6-1: National Environmental Policy Act Process	1-11

CHAPTER 2 Description of Proposed Action and Alternatives

Figure 2.1-1: Hawaii-Southern California Training and Testing Study Area	2-5
Figure 2.1-2: Hawaii Range Complex	2-6
Figure 2.1-3: Navy Training Areas Around Kauai	2-8
Figure 2.1-4: Oahu Training Locations	2-9
Figure 2.1-5: Maui Training Locations.....	2-10
Figure 2.1-6: Southern California Range Complex.....	2-11
Figure 2.1-7: San Clemente Island Offshore Training Areas	2-12
Figure 2.1-8: San Clemente Island Nearshore Training Areas	2-13
Figure 2.1-9: Southern California Training Areas.....	2-14
Figure 2.1-10: Silver Strand Training Complex.....	2-16
Figure 2.1-11: Navy Piers and Shipyards in San Diego and Pearl Harbor	2-17
Figure 2.3-1: Principle of Active Sonar.....	2-23
Figure 2.3-2: Guided Missile Destroyer with AN/SQS-53 Sonar	2-24
Figure 2.3-3: Submarine AN/BQQ-10 Active Sonar Array.....	2-25
Figure 2.3-4: Sonobuoys (e.g., AN/SSQ-62)	2-25
Figure 2.3-5: Helicopter Deploys Dipping Sonar	2-26
Figure 2.3-6: Navy Torpedoes	2-26
Figure 2.3-7: Acoustic Countermeasures.....	2-27
Figure 2.3-8: Anti-Submarine Warfare Training Targets.....	2-27
Figure 2.3-9: Mine Warfare Systems	2-28
Figure 2.3-10: Shipboard Small Arms Training.....	2-29
Figure 2.3-11: Shipboard Medium-Caliber Projectiles (20mm)	2-29
Figure 2.3-12: Large-Caliber Projectile Use (5 in.).....	2-30
Figure 2.3-13: Rolling Airframe Missile (left), Air-to-Air Missile (right)	2-30
Figure 2.3-14: Anti-Surface Missile Fired from MH-60 Helicopter	2-31
Figure 2.3-15: F/A-18 Bomb Release (Left) and Loading General Purpose Bombs (Right).....	2-31
Figure 2.3-16: Subscale Bombs for Training	2-32
Figure 2.3-17: Anti-Air Warfare Targets.....	2-33
Figure 2.3-18: Deploying a "Killer Tomato™" Floating Target.....	2-33
Figure 2.3-19: Ship Deployable Surface Target (Left) and High-Speed Maneuverable Seaborne Target (Right).....	2-34
Figure 2.3-20: Towed Mine Detection System.....	2-35
Figure 2.3-21: Airborne Laser Mine Detection System in Operation.....	2-35
Figure 2.3-22: Organic and Surface Influence Sweep	2-36
Figure 2.3-23: Airborne Mine Neutralization System	2-37
Figure 2.7-1: Proposed Expansion of the Western Boundary of the Study Area	2-65

CHAPTER 3.0 Introduction

Figure 3.0-1: Large Marine Ecosystems and Open Ocean Portions of the Hawaii-Southern California Training and Testing Study Area	3.0-10
Figure 3.0-2: Three-dimensional Representation of the Continental Margin and Abyssal Zone	3.0-13
Figure 3.0-3: Bathymetry of the Hawaiian Islands.....	3.0-14
Figure 3.0-4: Bathymetry of the SOCAL Range Complex.	3.0-16
Figure 3.0-5: California Current and Countercurrent circulation in the Southern California Bight.....	3.0-18
Figure 3.0-6: Surface circulation in the Hawaiian Islands	3.0-19
Figure 3.0-7: Sea Surface Temperature Showing the Seasonal Variation in the Convergence of the Cold California Current and Warm Equatorial Waters.....	3.0-23
Figure 3.0-8: Sea Surface Temperature in the Study Area	3.0-24
Figure 3.0-9: Various Sound Pressure Metrics for a Hypothetical (a) Pure Tone (Non-Impulsive) and (b) Impulsive Sound.....	3.0-29
Figure 3.0-10: Summation of Acoustic Energy (Cumulative Exposure Level, or Sound Exposure Level) from a Hypothetical, Intermittently Pinging, Stationary Sound Source (EL = Exposure Level)	3.0-31
Figure 3.0-11: Cumulative Sound Exposure Level under Realistic Conditions with a Moving, Intermittently Pinging Sound Source (Cumulative Exposure Level = Sound Exposure Level).....	3.0-32
Figure 3.0-12: Graphical Representation of the Inverse-Square Relationship in Spherical Spreading	3.0-33
Figure 3.0-13: Characteristics of Sound Transmission through the Air-Water Interface	3.0-37
Figure 3.0-14: Oceanic Ambient Noise Levels from 1 Hz to 100,000 Hz, Including Frequency Ranges for Prevalent Noise Sources	3.0-39
Figure 3.0-15: Estimate of Spreading Loss for a 235 dB re 1 μ Pa Sound Source Assuming Simple Spherical Spreading Loss	3.0-48
Figure 3.0-16: Average Ship Density in Southern California, September 2009 to August 2010.....	3.0-57
Figure 3.0-17: Flow Chart of the Evaluation Process of Sound-Producing Activities	3.0-105
Figure 3.0-18: Two Hypothetical Threshold Shifts.....	3.0-109

Section 3.1 Sediments and Water Quality

Figure 3.1-1: Sediment Quality Index for the Hawaiian Islands.....	3.1-12
Figure 3.1-2: Water Quality Index for the Hawaiian Islands.....	3.1-19

Section 3.2 Air Quality

Figure 3.2-1: Southern California Air Basins Adjacent to the Study Area.....	3.2-6
------------------------------------------------------------------------------	-------

Section 3.3 Marine Habitats

Figure 3.3-1: Bottom Substrate Composition of the Southern California Range Complex	3.3-5
Figure 3.3-2: Bottom Substrate Composition of Silver Strand Training Complex	3.3-8
Figure 3.3-3: Offshore Habitats of Island of Oahu	3.3-10
Figure 3.3-4: Offshore Habitats of Islands of Kauai and Niihau	3.3-11
Figure 3.3-5: Offshore Habitats of Islands of Maui, Molokai, and Lanai	3.3-12
Figure 3.3-6: Offshore Habitats of Island of Hawaii.....	3.3-13

Section 3.4 Marine Mammals

Figure 3.4-1: Critical Habitat of the Hawaiian Monk Seal in the Study Area	3.4-80
Figure 3.4-2: Track of Hawaiian Monk Seal R012 in June 2010	3.4-85
Figure 3.4-3: Two Hypothetical Threshold Shifts, Temporary and Permanent	3.4-96
Figure 3.4-4: Type I Auditory Weighting Functions Modified from the Southall et al. (2007a, b) M-Weighting Functions	3.4-117
Figure 3.4-5: Type II Weighting Functions for Low-, Mid-, and High-Frequency Cetaceans.....	3.4-119
Figure 3.4-6: Behavioral Risk Function Applied to Mysticetes	3.4-124
Figure 3.4-7: Behavioral Risk Function Applied to Odontocetes, Pinnipeds, and Sea Otters.....	3.4-124
Figure 3.4-8: Hypothetical Range to Specified Effects for a Sonar Source	3.4-140
Figure 3.4-9: Threshold Profiles for Slight Lung Injury (left) and Mortality (right) Based on Five Representative Animal Masses for a 0.5-Pound Net Explosive Weight Charge (Bin E2) Detonated at 1-m Depth	3.4-177
Figure 3.4-10: Threshold Profiles for Slight Lung Injury (left) and Mortality (right) Based on Five Representative Animal Masses for a 10-Pound Net Explosive Weight Charge (Bin E5) Detonated at 1-m Depth	3.4-178
Figure 3.4-11: Threshold Profiles for Slight Lung Injury (left) and Mortality (right) Based on Five Representative Animal Masses for a 250-Pound Net Explosive Weight Charge (Bin E9) Detonated at 1-m Depth	3.4-179
Figure 3.4-12: Threshold Profiles for Slight Lung Injury (left) and Mortality (right) Based on Five Representative Animal Masses for a 1,000-Pound Net Explosive Weight Charge (Bin E12) Detonated at 1-m Depth	3.4-180
Figure 3.4-13: Ship Strikes by Area (California, Hawaii) by Year, By All Sources from 1991 to 2010 ..	3.4-238
Figure 3.4-14: Ship Strikes By All Sources by California Geographic Strata 1991 to 2010	3.4-238
Figure 3.4-15: Ship Strikes of Individual Species in California and Hawaii from 1991 to 2010	3.4-239

Section 3.5 Sea Turtles

Figure 3.5-1: Auditory Weighting Function for Sea Turtles (T-weighting)	3.5-33
-------------------------------------------------------------------------------	--------

Section 3.6 Seabirds

There are no figures in this section.

Section 3.7 Marine Vegetation

There are no figures in this section.

Section 3.8 Marine Invertebrates

Figure 3.8-1: Locations of Sightings of White Abalone in the Hawaii-Southern California Training and Testing Study Area	3.8-12
Figure 3.8-2: Prediction of Distance to 90 Percent Survivability of Marine Invertebrates Exposed to an Underwater Explosion (Young 1991)	3.8-27

Section 3.9 Fish

Figure 3.9-1: Critical Habitat of the Steelhead Trout within and adjacent to the Southern California Study Area	3.9-21
-----------------------------------------------------------------------------------------------------------------------	--------

Section 3.10 Cultural Resources

Figure 3.10-1: Kauai Submerged Shipwrecks.....	3.10-7
Figure 3.10-2: Molokai, Lanai, Maui, and Kahoolawe Submerged Shipwrecks	3.10-8
Figure 3.10-3: Oahu Submerged Shipwrecks.....	3.10-9
Figure 3.10-4: San Clemente Island Submerged Shipwrecks.....	3.10-11
Figure 3.10-5: San Diego Bay and Silver Strand Training Complex Submerged Cultural Resources	3.10-13

Section 3.11 Socioeconomic Resources

Figure 3.11-1: Hawaiian Islands Shipping Routes	3.11-4
Figure 3.11-2: Southern California Range Complex Shipping Routes.....	3.11-6
Figure 3.11-3: Air Traffic Routes in the Study Area, Hawaii Range Complex (top) and Southern California Range Complex (bottom)	3.11-8
Figure 3.11-4: Southern California Offshore Airspace	3.11-10
Figure 3.11-5: Hawaiian Island Recreational Areas	3.11-17
Figure 3.11-6: Kauai –Niihau Island Recreation Areas.....	3.11-19
Figure 3.11-7: Oahu Island Recreation Areas	3.11-20
Figure 3.11-8: Recreation Areas around San Clemente Island	3.11-21
Figure 3.11-9: Recreational Map of the Silver Strand Training Complex.....	3.11-23

Section 3.12 Socioeconomic Resources

Figure 3.12-1: Simultaneous Activities within the Hawaii-Southern California Training and Testing Study Area	3.12-2
--------------------------------------------------------------------------------------------------------------------	--------

CHAPTER 4 Cumulative Impacts

There are no figures in this section.

CHAPTER 5 Mitigation Measures

There are no figures in this section.

CHAPTER 6 Other Considerations

There are no figures in this section.

CHAPTER 7 List of Preparers

There are no figures in this section.

APPENDIX A Navy Activities Descriptions

There are no figures in this section.

APPENDIX B Notice of Intent

There are no figures in this section.

APPENDIX C Agency Correspondence

There are no figures in this section.

APPENDIX D Air Quality Example Summaries

Figure D.5-1: Record of Non-Applicability Memorandum	D-9
Figure D.5-2: Record of Non-Applicability Form, South Coast Air Basin.....	D-10
Figure D.5-3: Conformity Analysis, South Coast Air Basin	D-11
Figure D.5-4: Record of Non-Applicability Form, San Diego Air Basin	D-15
Figure D.5-5: Conformity Analysis, San Diego Air Basin.....	D-16

APPENDIX E Public Participation

There are no figures in this section.

APPENDIX F Stressors Associated with Navy Activities

There are no figures in this section.

Appendix G Statistical Probability analysis for Estimating Direct Strike Impact and Number of Potential Exposures

There are no figures in this section.

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ACRONYMS AND ABBREVIATIONS

DoD	Department of Defense
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
MMPA	Marine Mammal Protection Act
Navy	U.S. Department of the Navy
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
OEIS	Overseas Environmental Impact Statement
OPAREA	operating area

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